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Congress

# OF THE CROATIAN OPHTHALMOLOGICAL AND OPTOMETRIC SOCIETY



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## KNJIGA

## SAŽETAKA



05 HRVATSKO  
20 OFTALMOLOŠKO I  
23 OPTOMETRIJSKO  
DRUŠTVO

## 1. Luka Šimić

**Naslov:**

Serozna ablacija retine u mlade pacijentice s akutnom bubrežnom insuficijencijom

**Autori:**

Luka Šimić dr. Med., prof. Dr. Sc. Nenad Vukojević, Lorena Karla Rudež dr.med.

**Ustanova:**

KBC Zagreb, Poliklinika za oftalmologiju, ginekologiju i internu medicinu Fokus

**Cilj:**

Cilj ovog rada jest prikazati klinički tijek, dijagnozu i liječenje serozne ablacije retine s akutnom bubrežnom insuficijencijom. Specifičnost u ovom slučaju jest sama rijetkost pojave serozne ablacije u mladih pacijenata.

**Bolesnici i metode:**

Pacijentica stara 15 godina upućena je na konzilijarni pregled s klinike za pedijatriju zbog zamućenog vida na desno oko unazad 1 dan. Na klinici za pedijatriju liječena je zbog brzo progresivnog glomerulonefritisa te tvorbe u medijastinumu koja PHD analizom nije pokazala znakove jasnog malaligniteta. U tijeku obrade učini se određivanje vidne oštine, pregled biomikroskopom, mjerenje očnog tlaka, detaljan pregled očne pozadine te UZV i OCT oba oka

**Rezultati:**

Učinjenom kliničkom obradom postavi se dijagnoza serozne ablacije retine oba oka. Uzevši u obzir rezultate kliničke obrade i osnovnu bolest pacijentice, zaključuje se kako je ablacija retine uzrokovana akutnom bubrežnom insuficijencijom. Daju se preporuke za redovnu kontrolu te se iz dostupne literature zaključuje kako samo poboljšanjem osnovne bolesti može doći do izlječenja ablacije retine.

**Zaključak:**

Serozna ablacija retine oka u pedijatrijskoj populaciji izrazito je rijetka pojava. Važno je kod pacijentice s bubrežnom insuficijencijom detaljno pregledati očnu pozadinu u potrazi za seroznom ablacijom retine. Visoki krvni tlak i visoka razina ureje u krvi mogu uzrokovati seroznu ablaciju retine. Liječi se osnovna bolest, no važno je pratiti pacijenta radi sprječavanja i liječenja mogućih komplikacija.

**Title:**

Serous retinal detachment in young patient with acute kidney failure

**Authors:**

Luka Šimić dr. Med., prof. Dr. Sc. Nenad Vukojević, Lorena Karla Rudež dr. Med.

**Institution:**

KBC Zagreb, Poliklinika za oftalmologiju, ginekologiju i internu medicinu Fokus

**Aim:**

To present the clinical course, diagnosis and treatment of serous retinal detachment in a patient with acute kidney failure. Serous retinal detachment is very uncommon finding in young patients.

**Patients and methods:**

15 year old female patient was sent from pediatric clinic because blurred vision of the right eye. The symptoms started 1 day prior to the examination. The patient was hospitalised on the pedi

atric clinic because of acute kidney failure. During ophtahalmological examination OCT and ultrasound of both eyes, visual acuity check and detail retinal examination were performed.

**Results:**

After eye examination serous retinal detachment of both eyes was diagnosed. It is believed because of the relevant literature that the serous retinal detachment was caused from acute kidney failure. Treatment was based on treating the acute kidney failure which according to literature should improve the condition of the eyes. Only frequent examinations were advised.

**Conclusion:**

Serous retinal detachment is very uncommon finding in pediatric population. It is important to examine in detail eye fundus in patients with acute kidney failure. High blood pressure and high levels of urea can cause serous retinal detachment. It is important to do regular check ups on patients with serous retinal detachment in patients with acute kidney failure to prevent any complications.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Luka

**Ime i prezime / First and Last Name:-Last**

Šimić

## 2. Stanić Robert

**Naslov:**

Duboka sklerektomija i trabekulektomija u filtrirajućim operacijama pedijatrijskog glaukoma

**Autori:**

Stanić R., Rogošić V., Paradžik Šimunović M.

**Ustanova:**

Klinika za očne bolesti, KBC Split

**Cilj:**

Procijeniti vrijednost kombiniranog postupka duboke sklerektomije i trabekulektomije u liječenju pedijatrijskog glaukoma

**Bolesnici i metode:**

Četrnaest očiju u 8 djece (prosječne dobi  $14 \pm 17,1$  mjeseci) s povišenim prijeoperacijskim IOT-om (srednja vrijednost  $28,57 \pm 10,58$  mmHg) podvrgnuto je filtracijskoj operaciji. Bolesnici su praćeni do  $32,7 \pm 6,3$  mjeseca postoperativno. Prijeoperacijski pregled uključivao je: tonometriju u općoj anesteziji, pregled fundusa, gonioskopiju, B ultrasonografiju, dijametar i bistrinu rožnice.

**Rezultati:**

Srednji IOT prvog dana nakon operacije bio je  $5,92 \pm 2,23$  mmHg (raspon 5-13). Nakon 24 mjeseca srednji IOT bio je  $14,35 \pm 3,31$  mmHg (raspon 11-21). Stopa potpunog uspjeha (IOT  $\leq 16$  mmHg) nakon 24 mjeseca bila je 78,5%.

**Zaključak:**

U našoj seriji kombiniranih operacija duboka sklerektomija i trabekulektomija osigurava stabilnu kontrolu IOT-a u bolesnika s pedijatrijskim glaukomom. Ovim operativnim zahvatom postignut je minimum postoperativnih komplikacija, minimalan je utjecaj na postoperativnu vidnu oštrinu te je brz oporavak.

**Title:**

Deep Sclerectomy and Trabeculectomy in Pediatric glaucoma Filtering Surgery

**Authors:**

Stanić R., Rogošić V., Paradžik Šimunović M.

**Institution:**

Department of Ophthalmology University Hospital Centre Split

**Aim:**

To evaluate the value of combined procedure deep sclerectomy and trabeculectomy for the treatment of pediatric glaucoma

**Patients and methods:**

Fourteen eyes in 8 children (mean age  $14 \pm 17,1$  months) with elevated preoperative IOP (mean  $28,57 \pm 10,58$  mmHg) underwent a glaucoma filtering surgery. Patients were followed up to  $32,7 \pm 6,3$  months postoperatively. Preoperative examination included: tonometry under general anesthesia, fundus examination, gonioscopy, B scan ultrasonography, corneal diameter and clarity.

**Results:**

First post op day mean IOP was  $5,92 \pm 2,23$  mmHg (range 5-13). After 24 months mean IOP was  $14,35 \pm 3,31$  mmHg( range 11-21). Complete success rate (IOP  $\leq 16$ mmHg) after 24 months was 78,5%.

**Conclusion:**

In our series combined deep sclerectomy and trabeculectomy provides stabile control of IOP in patients with pediatric glaucoma. Minimum postoperative complications, minimal influence on postoperative visual acuity and rapid recovery was achieved with this surgical procedure.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

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Stanić

### 3. Andrea Radolović Bertetić

**Naslov:**

Herpetički blefarokonjunktivitis i papiledem kao nuspojava liječenja atopijskog dermatitisa

**Autori:**

Andrea Radolović Bertetić, dr.med.1; Domagoj Vlašić, dr.med.1; Martin Oroz, dr.med.1; Ana Pupić-Bakrač, dr.med.1; prof.dr.sc. Nenad Vukojević, dr.med.1

**Ustanova:**

1 Klinika za očne bolesti Medicinskog fakulteta Sveučilišta u Zagrebu, KBC Zagreb

**Cilj:**

Opisati moguće nuspojave liječenja atopijskog dermatitisa

**Bolesnici i metode:**

Prikaz slučaja 28-godišnje pacijentice koja je liječenjem atopijskog dermatitisa razvila herpetički blefarokonjunktivitis i papiledem

**Rezultati:**

Pacijentica s atopijskim dermatitisom posljednje je tri godine liječena sistemskom kortikosteroidnom terapijom s povremenim razdobljima ukidanja. Zbog slabog odgovora na kortikosteroidnu terapiju prije šest mjeseci uvedena je i sistemska terapija baricitinibom.

Na oftalmološkom pregledu pacijentica se prezentirala bilateralnim herpetičkim blefarokonjunktivitisom i papiledemom. CT i MR pokazali su znakove povišenog intrakranijalnog tlaka. Liječena je sistemskim i lokalnim aciklovirom te lokalnom antibiotskom terapijom. Papiledem je opserviran uz blagu spontanu regresiju.

**Zaključak:**

Protokoli liječenja atopijskog dermatitisa uključuju upotrebu imunomodulatorne terapije čije nuspojave mogu stvoriti i oftalmološke komplikacije.

Važne nuspojave baricitiniba (JAK inhibitora) su ozbiljne bakterijske, gljivične i virusne infekcije.

S druge strane, kortikosteroidi mogu biti terapija koja će uvelike poboljšati tijek bolesti, ali dugotrajna upotreba može uzrokovati ozbiljne zdravstvene rizike.

Dakle, svaki lijek u farmakopeji može uzrokovati nuspojave i moramo ga koristiti s oprezom.

**Title:**

Herpetic blepharoconjunctivitis and papilledema as adverse effects of atopic dermatitis treatment

**Authors:**

Andrea Radolović Bertetić, dr.med.1; Domagoj Vlašić, dr.med.1; Martin Oroz, dr.med.1; Ana Pupić-Bakrač, dr.med.1; prof.dr.sc. Nenad Vukojević, dr.med.1

**Institution:**

1 Department of Ophthalmology Zagreb University Hospital Center, University of Zagreb School of Medicine

**Aim:**

To describe potential adverse effects of atopic dermatitis treatment

**Patients and methods:**

Case report of a 28-year-old patient who developed herpetic blepharoconjunctivitis and papilledema during the treatment of atopic dermatitis

**Results:**

Patient with atopic dermatitis has been treated with systemic corticosteroid therapy in the past three years with periods of discontinuation. Due to a weak response to corticosteroid therapy systemic baricitinib was introduced six months ago.

On the ophthalmologic examination patient presented with bilateral herpetic blepharoconjunctivitis and papilledema. CT and MRI showed signs of raised intracranial pressure. She was treated with systemic and local acyclovir and local antibiotic therapy. Papilledema was observed with slight spontaneous regression.

**Conclusion:**

Treatment protocols for atopic dermatitis include the use of immunomodulatory therapy, the adverse effects of which can create ophthalmic complications.

Important adverse effects of baricitinib (JAK inhibitor) are serious bacterial, fungal and viral infections.

On the other hand, corticosteroids can significantly improve the course of the disease, but long-term use in particular can cause serious health risks.

So, each drug in the pharmacopeia can cause adverse effects and we must use it with caution.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Radolović Bertetić

#### 4. Doko Mandić Blanka

**Naslov:**

Konjunktivohalaza – često zanemarena dijagnoza

**Autori:**

Doko Mandić B, Iveković R, Zrinščak O, Petric Vicković I, Lacmanović Lončar V, Škunca Herman J, V atavuk Z

**Ustanova:**

Klinika za očne bolesti KBC Sestre milosrdnice, Zagreb

**Cilj:**

Cilj rada bio je istražiti uspjeh kirurškog liječenja konjunktivohalaze u seriji bolesnika kod kojih nije postignuto smanjenje tegoba primjenom topičke terapije

**Bolesnici i metode:**

Izabrali smo 9 bolesnika koji su imali izražene tegobe i nakon višegodišnjeg konzervativnog liječenja topičkim lubrikantima i steroidima. Željeli smo istražiti kojim ćemo postupkom najučinkovitije „zagladiti“ površinu oka te postići obnovu suznog meniska kako bi se posljedično poboljšala stabilnost suznog filma te smanjila površinska iritacija i upala. U prvoj grupi bolesnika učinjena je kauterizacija konjunktive u svrhu smanjivanja suvišnog tkiva. Kod druge grupe bolesnika učinjeno je kirurško uklanjanje (izrezivanje) viška tkiva konjunktive.

**Rezultati:**

Obje metode iznimno su učinkovite u liječenju konjunktivohalaze. Pri odabiru metode važno je uzeti u obzir karakteristike bolesnika.

U svih bolesnika simptomi su se značajno ili potpuno smanjili unutar tri mjeseca od operacije. Po trebno je duže praćenje kako bi se ustanovila eventualna stopa recidiva.

**Zaključak:**

Konjunktivohalaza je nedovoljno dijagnosticirano i liječeno, a vrlo često stanje koje karakteriziraju labavi, suvišni, ne-edematozni konjunktivalni nabori.

Kod simptomatskih bolesnika kod kojih ne dolazi do poboljšanja na primjenu topičke terapije nakon 6 mjeseci preporučuje se kirurškim putem ukloniti višak konjunktive.

**Title:**

Conjunctivochalasis - an often overlooked diagnosis

**Authors:**

Doko Mandić B, Iveković R, Zrinščak O, Petric Vicković I, Lacmanović Lončar V, Škunca Herman J, V atavuk Z

**Institution:**

Eye clinic, University hospital centre Sestre milosrdnice, Zagreb

**Aim:**

The aim was to explore the success of surgical treatment of conjunctivochalasis in a series of patients in whom no reduction of symptoms was achieved with the application of topical therapy

**Patients and methods:**

We selected 9 patients who had severe complaints even after many years of conservative treatment with topical lubricants and steroids. We wanted to investigate which procedure will most effectively "smooth" the surface of the eye and achieve restoration of the tear meniscus in order to c



onsequently improve the stability of the tear film and reduce surface irritation and inflammation. In the first group of patients, cauterization of the conjunctiva was performed in order to reduce excess tissue. In the second group of patients, surgical removal (excision) of excess conjunctival tissue was performed.

**Results:**

Both methods are extremely effective in the treatment of conjunctivochalasis. When choosing a method, good patient selection is important.

In all patients, the symptoms significantly or completely decreased within three months of the operation. Longer follow-up is needed to establish the eventual recurrence rate.

**Conclusion:**

Conjunctivochalasis is an underdiagnosed and undertreated, and very common condition characterized by loose, redundant, non-edematous conjunctival folds.

In symptomatic patients who do not improve with topical therapy after 6 months, it is recommended to surgically remove the excess conjunctiva

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA ORBITU / Orbit section

**Titula / Title:**

Dr.

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**Ime i prezime / First and Last Name:-First**

Blanka

**Ime i prezime / First and Last Name:-Last**

Doko Mandić

## 5. Belak Marin

### **Naslov:**

Supinirani i bočni postoperativni položaj pacijenta nakon vitrektomije sa endotamponadom 25% SF6 plinom zbog regmatogene retinalne ablacije sa inferiornom retinalnom rupturom- retrospektivna studija

### **Autori:**

Belak Marin, Dobravec Jasna, Mrak Maksimilijan, Vataavuk Zoran

### **Ustanova:**

KBC Sestre milosrdnice

### **Cilj:**

Procijeniti učinkovitost kombiniranog supiniranog i bočnog postoperativnog položaja nakon PPV sa ili bez fakoemulzifikacije, uz endotamponadu 25% SF6 plina zbog retinalne regmatogene ablacije sa multiplim perifernim i donjim rupturama.

### **Bolesnici i metode:**

25 očiju od 25 pacijenata sa ablacijom retine zbog multiplih i donjih ruptura su liječene 23G PPV i 25% SF6 plinom. U studiju su uključene oči kod kojih je učinjena samo vitrektomija ili fakovitrektomija. Isključujući kriteriji : prethodne operacije zbog retinalnih bolesti, PVR stadija C ili lošije, gigantske rupture, miopske makularne rupture. Pacijentima je preporučeno dva sata ležanja na trbuhu postoperativno odmah nakon operacije. Nakon toga pacijentima je preporučeno ležanje na leđima i boku (ovisno o lokaciji rupture) prema odluci kirurga. Pacijentima je rečeno da sjede/stoje samo za vrijeme jela ili odlaska na toalet. Pacijente nismo strogo kontrolirali da li se drže uputa. Pacijenti su praćeni od 6 mjeseci do 2 godine nakon operacije.

### **Rezultati:**

Kod 24/25 (96%) očiju je postignuto uspješno liječenje ablacije retine tijekom perioda praćenja. Jedan pacijent (4%) je imao reablaciju 3 mjeseca nakon operacije zbog razvoja donje proliferativne vitreoretinopatije i makularne rupture. Imao je uspješnu drugu operaciju sa donjom retinektomijom i instilacijom silikonskog ulja. Kao konačni rezultat 25/25 (100%) pacijenata je postiglo uspješno liječenje ablacije retine. 20/25 (80%) pacijenata iz grupe je imalo ablaciju retine sa odvajanjem makule. 17/20 (85%) od pacijenata sa odignutom makulom je nakon operacije imalo konačnu na bolju korigiranu vidnu oštrinu (BCVA) 0.5 linija Snellena i više. Jedan pacijent (4%) je imao epizod u povišenog intraokularnog tlaka (IOT) od 48 mmHg izmjerenu 3 tjedna nakon operativnog zahvata koja je dobro odgovorila na medikamentoznu terapiju. Nije nakon toga imao porast IOT tijekom perioda praćenja niti je zahtijevao trajnu antiglaukomsku terapiju. Nismo zabilježili druge očne komplikacije tijekom studije.

### **Zaključak:**

Naši rezultati sugeriraju da se postoperativni supinirani i bočni položaj u kombinaciji sa PPV i SF6 plinom dobro podnosi od strane pacijenata i da je visoko učinkovit u liječenju ablacije retine sa donjom retinalnom rupturom. 25% SF6 plinska mješavina u supiniranom i bočnom položaju se čini sigurnom i učinkovitom. Potrebno je organizirati randomizirane i prospektivne studije sa većim uzorkom pacijenata kako bi se dalje utvrdila učinkovitost postoperativnog supiniranog pozicioniranja u liječenju inferiorne retinalne regmatogene ablacije.

**Title:**

Supine and lateral positioning after vitrectomy with 25% SF6 gas for rhegmatogenous retinal detachment with inferior retinal breaks- a retrospective study

**Authors:**

Belak Marin, Dobravec Jasna, Mrak Maksimilijan, Vatavuk Zoran

**Institution:**

UHC Sestre milosrdnice

**Aim:**

To evaluate the effectiveness of combined supinated and lateral positioning following PPV with or without phacoemulsification and 25% SF6 gas endotamponade for rhegmatogenous retinal detachment (RRD) with multiple peripheral and inferior breaks.

**Patients and methods:**

25 eyes from 25 patients with RRD due to multiple peripheral and inferior breaks were managed with 23G PPV and 25% SF6 endotamponade. Eyes with phacovitrectomy or just vitrectomy were included in the study. The exclusion criteria were a history of surgery for any retinal diseases, proliferative vitreoretinopathy of grade C or worse, giant retinal tears, or myopic MHS. Patients were recommended two hours of face-down position immediately after surgery. Followed by supinated position or lateral position (depending on the location of holes) at the discretion of surgeon. Patients were instructed to sit/stand up only for the period of eating or going to the toilet. Patients were not strictly controlled if they were keeping this position. Patients were followed for minimum of 6 months after surgery up to two years.

**Results:**

24/25 (96%) eyes got a successful attachment after the first surgery and during follow up period. One patient (4%) had a redetachment 3 months after surgery because of inferior proliferative vitreoretinopathy (PVR) development and macular hole. He had a successful second surgery with inferior retinectomy and silicone oil endotamponade. 25/25 (100%) had successful retinal reattachment as end result. 20/25 eyes (80%) in patient group had RRD with detached macula. 17/20 (85%) of this macula-off patients had end BCVA of  $\geq 0.5$  Snellen lines.

2/25 (8%) patients had a pseudophakic RRD, and 4/25 (16%) patients had phacovitrectomy in the study group.

One patient (4%) had ocular hypertension episode of 48 mmHg measured 3 weeks after surgery which was well controlled with medical therapy. He did not have another IOP raise during the period of follow up. We did not observe any other ocular complications.

**Conclusion:**

Our results suggest that postoperative supine or lateral positioning in combination with PPV and SF6 gas is well tolerated and highly effective in treatment of RRD with peripheral multiple and inferior retinal breaks. 25% SF6 gas mixture with supinated and lateral positioning seem to be safe and effective. Randomized and prospective studies with larger sample sizes are warranted to further determine the efficacy of postoperative supinated positioning for managing inferior RRDs.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

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Marin

**Ime i prezime / First and Last Name:-Last**

Belak

## 6. Martin Oroz

**Naslov:**

Epidemiološki trendovi hitnih oftalmoloških stanja KBC-a Zagreb – desetogodišnja usporedba.

**Autori:**

Martin Oroz, Andrea Radolović Bertetić, Domagoj Vlašić, Ivan Škegro

**Ustanova:**

Klinika za očne bolesti, KBC Zagreb

**Cilj:**

Ustanoviti najčešće dijagnoze, demografske podatke i trajanje tegobe s kojim su se pacijenti javili u hitnu oftalmološku ambulantu KBC-

a Zagreb te rezultate usporediti s epidemiološkim trendovima utvrđenim prije 10 godina.

**Bolesnici i metode:**

Prospektivno istraživanje. U ispitivanje je uključeno 525 pacijenata pregledanih u hitnoj oftalmološkoj ambulanti u šestomjesečnom periodu. Analizom su obuhvaćeni demografski podatci, vrijeme od početka simptoma do dolaska u hitnu ambulantu, posjedovanje uputnice od liječnika za hitan pregled i dijagnoza postavljena u hitnoj ambulanti nakon obrade. Dobiveni podatci su statistički obrađeni te uspoređeni s istraživanjem provedenim 2012. godine.

**Rezultati:**

138 pacijenata se javilo na pregled isti dan nakon pojave simptoma, 193 pacijenta dva dana nakon pojave simptoma, a ostali su došli nakon trećeg dana. 41 pacijent prethodno je pregledan od liječnika primarne zdravstvene zaštite i službeno upućen radi daljnjeg liječenja u hitnu oftalmološku ambulantu. U usporedbi s podacima iz 2012. godine, postoji statistički značajna razlika u broju dana od početka tegoba između 2012. i 2022. godine ( $\chi^2 = 12.574$ ,  $p < 0.01$ ) na način da se u 2022. godini značajno veći broj pacijenata javljao tek nakon 3 dana u hitnu ambulantu. Dobivena je statistički značajna razlika između dvaju uspoređivanih godina u tipu najčešćih tegoba zbog kojih su se pacijenti javljali u hitnu ambulantu ( $\chi^2 = 23.191$ ,  $p < 0.01$ ).

**Zaključak:**

Istraživanje upućuje na činjenicu da pacijenti većinom dolaze direktno na pregled u hitnu službu kliničkog bolničkog centra (tercijarna razina zdravstvene djelatnosti), pri čemu zaobilaze nadležne liječnike primarne zdravstvene zaštite. Iako se najčešće radilo o ozljedama ili upalama, samo 26 % pacijenata je došlo u prvom danu, što ukazuje na to da su ostali pacijenti mogli biti pregledani od strane liječnika primarne zdravstvene zaštite te po potrebi upućeni nadležnim oftalmolozima. U usporedbi s podacima iz 2012. godine, povećan je broj pacijenata koji direktno dolaze u hitnu službu, bez prijašnjeg pregleda, dok istovremeno postoji dulje vrijeme čekanja od pojave simptoma do javljanja liječniku.

**Title:**

Epidemiological trends of ocular emergencies at UHC Zagreb – a ten-year comparison

**Authors:**

Martin Oroz, Andrea Radolović Bertetić, Domagoj Vlašić, Ivan Škegro

**Institution:**

Department of Ophthalmology, University Hospital Centre Zagreb

**Aim:**

To determine the time passed from the onset of symptoms to arrival at the emergency clinic and whether the patients were previously reviewed or referred by primary care physicians. To determine the most frequent reasons for patients' attendance to the emergency ophthalmic clinic at UHC Zagreb.

**Patients and methods:**

A prospective study. The study included 525 patients examined at the emergency ophthalmic unit for six months. The analysis included demographic data, time from onset of symptoms to arrival at the emergency unit, having a medical referral from a primary care physician for an urgent examination, and the established diagnosis after the diagnostic procedure. The obtained data were statistically analyzed and compared with research from 2012.

**Results:**

138 patients came the same day after the onset of symptoms, 193 within two days, while the rest came after three days. 41 patients were previously examined by a primary care physician and sent for further treatment in the emergency ophthalmic clinic. In comparison with data from 2012., there is a statistically significant difference in the number of days since the onset of symptoms between data from 2012. and 2022. ( $\chi^2 = 12.574$ ,  $p < 0.01$ ); in 2022. a significantly larger number of patients reported after three days from the onset of symptoms. There is a statistically significant difference in the most commonly presented patient complaints between 2012. and 2022. ( $\chi^2 = 23.191$ ,  $p < 0.01$ ).

**Conclusion:**

The study suggests most patients come directly to the emergency clinic of the University Hospital Centre Zagreb, which is an institution of the tertiary level of health, bypassing the primary care physicians. Although most of the reasons were injuries or inflammation, only 26% of cases came on the same day, suggesting the other patients could have been reviewed by primary care physicians and sent to competent ophthalmologists. In comparison with previous data from 2012., it seems there is a longer period of waiting from the start of the symptoms to reporting to a doctor and an increase of patients coming to the emergency clinic directly.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Martin

**Ime i prezime / First and Last Name:-Last**

Oroz

## 7. Adrian Lukenda

**Naslov:**

Tretman suhog oka intenzivnim svjetlosnim impulsima – IPL; naša prva iskustva

**Autori:**

Adrian Lukenda, Željka Karaman Martinović, Snježana Lovrinčević

**Ustanova:**

Očna poliklinika Opto centar, Zagreb

**Cilj:**

prikazati učinkovitost i sigurnost serija od najmanje 3 uzastopna tretmana intenzivnim svjetlosnim impulsima (IPL) kod pacijenata sa simptomima i znakovima suhog oka zbog disfunkcije Meibomovih žlijezda.

**Bolesnici i metode:**

pregled literature i prikaz slučajeva. Prikazat ćemo početne rezultate nakon serije od 3 IPL stimulacije (1, 15, 45 i/ili 75 dan) sa po 10 impulsa po oku kod pacijenata sa simptomatskim suhim okom uzrokovanim disfunkcijom Meibomovih žlijezda. Pacijenti su tretirani na TearStim IPL uređaju (ESW vision, Houdan, Francuska). Prije i nakon serija IPL tretmana pacijenti su ispunili OSDI upitnik te je napravljen TBUT i pregled površine oka fluoresceinom, kao i sljedeće pretrage na uređaju I DRA (SBM Sistemi, Orbassano, Italija): automatska interferometrija za analizu lipidnog sloja suznog filma, infracrvena meibografija s pokazateljima gubitka Meibomovih žlijezda, visina suznog meniska i neinvazivni test stabilnosti suznog filma (NIBUT). Svi pacijenti nastavili su koristiti kapi za vlaženje površine oka te grijati i masirati rub vjeđa nakon IPL tretmana.

**Rezultati:**

Liječenje intenzivnim svjetlosnim impulsima novi je postupak liječenja disfunkcije Meibomovih žlijezda s dokazanom učinkovitošću i sigurnošću. Učinkovitost IPL-a može se smanjiti 6 mjeseci nakon zadnjeg tretmana. Kod pacijenata liječenih intenzivnim svjetlosnim impulsima u Očnoj poliklinici Opto centar došlo je do bitnog poboljšanja rezultata OSDI upitnika te dijela objektivnih parametara nakon tretmana. Nuspojave nakon tretmana nisu zabilježene.

**Zaključak:**

Trenutni klinički dokazi pokazuju da je IPL tretman siguran i učinkovit u poboljšanju simptoma i znakova suhog oka zbog disfunkcije Meibomovih žlijezda. Potrebno je više velikih randomiziranih istraživanja kako bi se dodatno poboljšale indikacije te prognoza trajanja učinaka ovog terapijskog pristupa.

**Title:**

IPL - Intense Pulsed Light Treatment for Dry Eye Disease; our first experience

**Authors:**

Adrian Lukenda, Željka Karaman Martinović, Snježana Lovrinčević

**Institution:**

Očna poliklinika Opto centar, Zagreb

**Aim:**

to assess the efficacy and safety of series of at least 3 consecutive intense pulsed light (IPL) treatments in patients with symptoms and signs of dry eye due to Meibomian gland dysfunction.

**Patients and methods:**

literature review and case series. We will present the initial results of the series of at least 3 IPL stimulations (day 1, 15, 45 and/or 75) with 10 pulses per eye in patients with a symptomatic dry eye disease due to the Meibomian gland dysfunction. Patients were treated with a TearStim IPL device (ESW vision, Houdan, France). Prior and after the IPL treatments we examined the TBUT, corneal fluorescein staining and OSDI scores and performed a dry eye diagnostic on an IDRA device (SBM Sistemi, Orbassano, Italy) which included: auto-interferometry test for the evaluation of the lipid layer, infrared meibography showing the Meibomian gland loss percentage, tear meniscus height and non-invasive tear film breakup time (NIBUT). All patients continued using wetting drops, and warm compresses combined with eyelid massage after the IPL treatments.

**Results:**

Intense pulsed light therapy is a new method for the treatment of Meibomian gland dysfunction with a proven efficacy and safety. The efficacy of IPL treatment may decrease within 6 months after the last treatment. In the patients treated with IPL in the Optocent Eye center, there was an improvement in OSDI symptom scores and some objective parameters after the treatment. No adverse effects were noted.

**Conclusion:**

current clinical evidence suggests that IPL is safe and useful in improving symptoms and signs of dry eye disease due to Meibomian gland dysfunction. More large randomized controlled trials evaluating IPL effectiveness are required to further improve the indications as well as the duration of this therapeutic approach.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJA ZA KONTAKTOLOGIJU / Contactology section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Adrian

**Ime i prezime / First and Last Name:-Last**

Lukenda



## 8. Ana Gornik

**Naslov:**

DESCEMETE STRIPPING ONLY FOR FUCHS ENDOTHELIAL CORNEAL DYSTROPHY

**Autori:**

Ana Gornik, Špela Štunf Pukl, Vladimir Pfeifer

**Ustanova:**

Univerzitetni klinični center Ljubljana, Očesna klinika

**Cilj:**

Our aim is to present preoperative criteria and postoperative outcomes in a case series of patients with Fuchs endothelial corneal dystrophy who underwent Descemet stripping only.

**Bolesnici i metode:**

Descemet stripping was performed in 8 eyes of 7 patients with Fuchs endothelial corneal dystrophy from 2019 to 2022. Patients selected had decreased best corrected visual acuity (BCVA), blurred distance vision, increased central corneal thickness (CCT), less than 4 mm of the central corneal endothelium affected and preserved peripheral endothelial count (ECC) (1800 cells/mm<sup>2</sup> or more). Cataract surgery was performed before or at the day of Descemet stripping. Preoperative and postoperative examination included BCVA (Snellen), CCT (Heidelberg Spectralis OCT), endothelial cell count (Tomey Specular Microscope). The central 4 to 5 mm of Descemet membrane were peeled off. Postoperative therapy included topical corticosteroids and antibiotics.

**Rezultati:**

Seven patients have undergone Descemet stripping only, average age at the time of surgery was 62,5 years [51-74]. The average follow-up follow-up 8,3 [2-17] months. Patients with preoperative CCT <800 microns were included in our study (all had a preoperative CCT of <700 microns) and two patients with extensive preoperative corneal oedema (CCT>800microns) were excluded from the analysis. Preoperative BCVA increased from an average 0,61 Snellen preoperatively to 0,8 Snellen [0,3-1.0] postoperatively and CCT decreased by 42 µm. In all 6 eyes, postop central CEC were seen on specular biomicroscopy. No patients needed subsequent endothelial keratoplasty.

**Zaključak:**

In our case series the early stage of central Fuchs dystrophy, pseudophakia and good patient cooperation were connected to a favourable visual outcome. Descemet stripping only is a minimally invasive and cost-effective surgery with few intraoperative and postoperative complications. Careful patient selection for the procedure and patient counselling is crucial.

**Title:**

DESCEMETE STRIPPING ONLY FOR FUCHS ENDOTHELIAL CORNEAL DYSTROPHY

**Authors:**

Ana Gornik, Špela Štunf Pukl, Vladimir Pfeifer

**Institution:**

Univerzitetni klinični center Ljubljana, Očesna klinika

**Aim:**

Our aim is to present preoperative criteria and postoperative outcomes in a case series of patients with Fuchs endothelial corneal dystrophy who underwent Descemet stripping only.

**Patients and methods:**

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**Conclusion:**

In our case series the early stage of central Fuchs dystrophy, pseudophakia and good patient cooperation were connected to a favourable visual outcome. Descemet stripping only is a minimally invasive and cost-effective surgery with few intraoperative and postoperative complications. Careful patient selection for the procedure and patient counselling is crucial.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ana Gornik

## 9. Dora Brijačak

**Naslov:**

Multidisciplinarni izazov liječenja sekundarnog glaucoma - neovaskularnog glaukoma, prikaz slučaja

**Autori:**

Dora Brijačak, Sonja Jandroković, Marija Štanfel, Ivan Škegro, Tomislav Jukić

**Ustanova:**

Specijalistička očna ordinacija za oftalmologiju, Klinički bolnički centar Zagreb, Medicinski fakultet u Zagrebu

**Cilj:**

Neovaskularni glaukom (NVG) je sekundarni glaukom koji ima značajan potencijal gubitaka vida. Liječenje je iznimno zahtjevno i vrlo je važno na vrijeme odrediti optimalan postupak. Ovim izlaganjem želimo ukazati na važnost suradnje različitih specijalista: retinologa, glaukomatologa i subspecijalista za bolesti prednjeg segmenta. Možda je najveći izazov u liječenju sekundarnog glaukoma i NVG-a orkestriranje pravodobnog pristupa liječenju među različitim stručnjacima.

**Bolesnici i metode:**

Ovaj prikaz slučaja ima za cilj opisati složeno liječenje sekundarnog dekompenziranog glaukoma i NVG-

a koji nastaju nakon liječenja ablacije retine lijevog oka kako bi se postigao najbolji vidni ishod. Žena stara 60 godina javila se s visokim vrijednostima intraokularnog tlaka sa sekundarno dekompenziranom glaukomom desnog oka i neovaskularnim glaukomom lijevog oka. Na desnom oku ima visoke vrijednosti očnog tlaka i kataraktu. Mrežnica joj se nije vidjela zbog katarakte, ali je u liječničkom nalazu stajalo da ima rupturu makule IV. Lijevo oko bilo je pseudofakično i imalo je bolju vidnu oštrinu. Neovaskularizacije su bile vidljive na šarenici i u kutu. Postojale su visoke vrijednosti očnog tlaka. Nalaz na retini lijevog oka je nakon operativnog zahvata (PPV) bio zadovoljavajući bez krvarenja, ali sa znakovima ishemije. Tijekom nekoliko boravaka u bolnici rađeni su zahvati, ali u vijek nakon snižavanja očnog tlaka uz intenzivnu lokalnu i opću antiglaukomsku terapiju: transskleralna ciklofotokoagulacija (TSCPC) desnog oka, operacija katarakte s ugradnjom leće desnog oka i anti-VEGF terapija intravitrealna (IVT) lijevog oka.

**Rezultati:**

Pacijentica je upućena oftalmologu kada joj je očni tlak bio iznad 38 mmHg. Vrijednosti visokog intraokularnog tlaka (IOP) opetovano su snižavane per os i lokalnom antiglaukomskom terapijom, transskleralnom ciklofotokoagulacijom (TSCPC), operacijom katarakte anti-VEGF IVT terapijom i intravenozno Manitolom 20% / 250 ml. Nakon svake terapije očni tlak padao je na graničnu vrijednost, a vidna oštrina na oba oka ostala je ista.

**Zaključak:**

Potreban je multidisciplinarni pristup za liječenje tako kompliciranog bolesnika s niskom adhezijom na terapiju. Također je vrlo važno usmjeriti se na ishemijske čimbenike koji potiču neovaskularizaciju, odmah riješiti povišenje IOP-

a kako bi se spriječilo ireverzibilno glaukomsko oštećenje. Anti-

VEGF IVT liječenje neovaskularnog glaukoma dovodi do regresije novih žila šarenice i retine i može sniziti IOP i sačuvati vidni status.

**Title:**

The multidisciplinary challenge of treatment of secondary glaucoma- neovascular glaucoma, case report

**Authors:**

Dora Brijačak, Sonja Jandroković, Marija Štanfel, Ivan Škegro, Tomislav Jukić

**Institution:**

Specialist eye clinic for ophthalmology, University Hospital Centre Zagreb, School of Medicine, University of Zagreb

**Aim:**

Neovascular glaucoma (NVG) is a secondary glaucoma that has significant potential to cause visual loss. The treatment is extremely demanding and it is very important to determine the optimal procedure in a timely manner. With this presentation, we aim to point out the importance of cooperation between different specialists: retinologists, glaucomatologists and subspecialists for anterior segment diseases. Perhaps the biggest challenge to secondary glaucoma and NVG management is orchestrating a timely treatment approach among various specialists.

**Patients and methods:**

This case report aims to describe the complex management of secondary decompensated glaucoma and NVG resulting after treatment of left eye retinal ablation to achieve the best visual outcome. 60-year-

old female presented with high intraocular pressure values with secondary decompensated glaucoma of the right eye and neovascular glaucoma of the left eye. In the right eye, there were high intraocular pressure values and cataract. The retina was not visible due to the cataract, but the medical findings stated that she had a grade IV macular rupture. The left eye was pseudophakic and had better visual acuity. Neovascularizations were visible on the iris and in the corner. There were high values of eye pressure. The findings on the retina of the left eye were satisfactory after the operative procedure (PPV) without bleeding but with signs of ischemia. During several stays in the hospital, procedures were performed, but always after lowering the eye pressure with intensive local and general anti-

glaucoma therapy: transscleral cyclophotocoagulation (TSCPC) of the right eye, cataract surgery with implantation of the lens of the right eye and anti-VEGF therapy intravitreal (IVT) of the left eye.

**Results:**

The patient was referred to an ophthalmologist when her eye pressure was above 38 mmHg. High intraocular pressure (IOP) values were repeatedly lowered with per os and local antiglaucoma therapy, transscleral cyclophotocoagulation (TSCPC), cataract surgery anti-VEGF IVT therapy and intravenously Mannitol 20% / 250 ml. After each therapy, the intraocular pressure level dropped to the threshold value, and the visual acuity remained the same in both eyes.

**Conclusion:**

A multidisciplinary approach is needed to target such a complicated patient with low adherence to therapy. Also is very important to target ischemic factors promoting neovascularization, promptly address elevation in IOP to prevent irreversible glaucomatous damage. Anti-VEGF IVT treatment for neovascular glaucoma leads to regression in iris and retinal neovessels and can lower IOP and preserve visual status.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Dora

**Ime i prezime / First and Last Name:-Last**

Brijačak

## 10. Matea Žužul

### **Naslov:**

Izražaj koneksina 37, 40, 43, 45 i paneksina 1 u ranom razvoju mrežnice i žilnice u čovjeka te u tu morigenezi

### **Autori:**

Matea Žužul, Mirela Lozić, Natalija Filipović, Samir Čanović, Ana Didović Pavičić, Joško Petričević, Nenad Kunac, Violeta Šoljić, Mirna Saraga-Babić, Suzana Konjevoda, Katarina Vukojević

### **Ustanova:**

Opća bolnica Zadar

### **Cilj:**

Otkriti izražaj koneksina i paneksina u razvojnim tjednima ljudskog oka, te otkriti njihovu ulogu u razvoju oka i najčešćim tumorima oka, retinoblastomu ili melanomu, zatim razmotriti buduće terapijske strategije u liječenju navedenih patoloških stanja.

### **Bolesnici i metode:**

Obradili smo ukupno 40 uzoraka ljudskog tkiva ( po 5 uzoraka u 8.,10.,12 tjednu razvoja oka, zatim po 5 uzoraka zdravog odraslog ljudskog oka i retinoblastoma, te 15 uzoraka uvealnog melanoma). Uzorke smo bojali imunohistokemijskim metodama, nakon čega je provedena semikvantitativna i statistička analiza.

### **Rezultati:**

Stanice pozitivne na koneksin 37 primijećene su u ljudskom oku u razvoju sa znatno većom ekspresijom u mrežnici u usporedbi sa žilnicom. U retinoblastomu je ekspresija Cx37 značajno veća u nepromijenjenoj mrežnici nego u žilnici, ali je najveća u tumorskom tkivu retinoblastoma. Ako uspoređujemo mrežnicu i žilnicu zdravog odraslog ljudskog oka, ekspresija koneksina 37 je slična kod oka u razvoju te kod epiteloidnog i vretenastog tipa melanoma. Ekspresija Cx37 je bila značajno veća kod miksoidnog tipa melanoma.

Koneksin 40 pozitivne stanice su pronađene u ljudskom oku u razvoju, sa značajno većom ekspresijom u mrežnici u 8. i 12.tjednu razvoja u usporedbi sa žilnicom. Kod retinoblastoma, ekspresija Cx40 je bila značajno viša u tumorskom tkivu u odnosu na zdravu mrežnicu i žilnicu. Ako uspoređujemo ekspresiju u mrežnici i žilnici zdravog odraslog ljudskog oka, ekspresija Cx40 je bila značajno povišena u usporedbi s okom u razvojnim periodima, te je sveukupno bila veća nego u bilo kojem tipu melanoma. Sveukupna ekspresija Cx40 u miksoidnom melanomu, neovisno o odjeljku oka, je bila značajno viša u usporedbi s drugim tipovima melanoma.

Sveukupna ekspresija koneksina 43 je bila značajno povišena kod retinoblastoma u odnosu na ljudsko oko u 8. i 10. razvojnom tjednu.

Ako uspoređujemo mrežnicu i žilnicu zdravog odraslog ljudskog oka, ekspresija Cx43 je smanjena u usporedbi s okom u razvoju. Sveukupna ekspresija Cx43, neovisno o dijelu oka, bila je značajno veća u epiteloidnom i miksoidnom tipu melanoma u usporedbi s normalnim ljudskim okom i melanomom vretenastih stanica.

Ekspresija koneksin 45 pozitivnih stanica u razvojnim fazama ljudskog oka je bila značajno viša u mrežnici u 8. i 10.tjednu razvoja u usporedbi sa žilnicom. U retinoblastomu ekspresija Cx45 je bila niska i slična u svim dijelovima oka.

Ekspresija Cx45 u normalnom razvojenom ljudskom oku sveukupno je bila veoma niska i kao i u

svim tipovima melanoma.

Sveukupna ekspresija paneksina 1, neovisno o odjeljku oka, je bila veća u retinoblastoma u usporedbi sa svim razvojnim tjednima oka.

Sveukupna ekspresija paneksina 1 u zdravom odraslom ljudskom oku je bila značajno niža nego u epiteloidnom melanomu i u melanomu vretenastih stanica. Epiteloidni tip melanoma ima značajno višu ekspresiju Px1, pogotovo u žilnici, dok melanom vretenastih stanica ima značajno višu ekspresiju u tumorskom tkivu.

**Zaključak:**

Naša je studija pokazala uključenost koneksina 37 i koneksina 40 u normalnu i patološku vaskularizaciju, također i uključenost koneksina 43 u upalni odgovor. Koneksin 45 uključen u rane stadije razvoja oka, a paneksin 1 može utjecati na metabolizam stanice.

Također smo promatrali značajne razlike u ekspresiji analiziranih koneksina i paneksina između različitih tipova tumora, što može biti korisno kod njihovog detaljnijeg razlikovanja. Zaključno, istraživani koneksini i paneksin 1 mogu poslužiti kao potencijalni biomarkeri tumorske prognoze ili moguće kao mete za buduće nove terapijske pristupe.

**Title:**

The Expression of Connexin 37, 40, 43, 45 and Pannexin 1 in the Early Human Retina and Choroid Development and Tumorigenesis

**Authors:**

Matea Žužul, Mirela Lozić, Natalija Filipović, Samir Čanović, Ana Didović Pavičić, Joško Petričević, Nenad Kunac, Violeta Šoljić, Mirna Saraga-Babić, Suzana Konjevoda, Katarina Vukojević

**Institution:**

General hospital Zadar

**Aim:**

To discover the expression of connexins and pannexins in the developmental weeks of the human eye, and to discover their role in the development of the eye and the most common eye tumors, retinoblastoma or melanoma, then to consider future therapeutic strategies in the treatment of the mentioned pathological conditions.

**Patients and methods:**

We processed a total of 40 human tissue samples (5 samples each in the 8th, 10th, 12th week of eye development, then 5 samples each of a healthy adult human eye and retinoblastoma, and 15 samples of uveal melanoma). The samples were stained with immunohistochemical methods, after which a semiquantitative and statistical analysis was performed.

**Results:**

Connexin 37-

positive cells have been observed in the developing human eye with significantly higher expression in the retina compared to the choroid. In retinoblastoma, the expression of Cx37 is significantly higher in the intact retina than in the choroid, but it is the highest in retinoblastoma tumor tissue. If we compare the retina and choroid of a healthy adult human eye, connexin 37 expression is similar in the developing eye and in epithelioid and spindle-type melanoma. Cx37 expression was significantly higher in the myxoid type of melanoma.

Connexin 40 positive cells were found in the developing human eye, with significantly higher expression in the retina at 8 and 12 weeks of development compared to the choroid. In retinoblastoma, Cx40 expression was significantly higher in tumor tissue compared to healthy retina and choroid. If we compare the expression in the retina and choroid of the healthy adult human eye, the

expression of Cx40 was significantly elevated compared to the developing eye, and overall it was higher than in any type of melanoma. The overall expression of Cx40 in myxoid melanoma, independent of the eye compartment, was significantly higher compared to other types of melanoma. The overall expression of connexin 43 was significantly elevated in retinoblastoma compared to the human eye at 8 and 10 weeks of development.

If we compare the retina and choroid of a healthy adult human eye, Cx43 expression is reduced compared to the developing eye. The overall expression of Cx43, independent of the part of the eye, was significantly higher in the epithelioid and myxoid type of melanoma compared to the normal human eye and spindle cell melanoma.

The expression of connexin 45 positive cells in the developmental stages of the human eye was significantly higher in the retina in the 8th and 10th week of development compared to the choroid. In retinoblastoma, Cx45 expression was low and similar in all parts of the eye.

The expression of Cx45 in the normal developing human eye was very low overall and as in all types of melanoma.

The overall expression of pannexin 1, independent of the eye compartment, was higher in retinoblastoma compared to all developmental weeks of the eye.

The overall expression of pannexin 1 in the healthy adult human eye was significantly lower than in epithelioid melanoma and spindle cell melanoma. The epithelioid type of melanoma has a significantly higher expression of Px1, especially in the choroid, while the spindle cell melanoma has a significantly higher expression in the tumor tissue.

#### **Conclusion:**

Our study has shown the involvement of Cx37 and Cx40 expression in normal and pathological vascularization, and Cx43 expression in the inflammatory response. Whereas Cx45 is involved in early stages of eye development, Pnx1 might influence cell metabolism. We also observed significant differences in the expression of analyzed Cxs and Pnx1 between the different types of tumors, which can be used in their fine distinction. Therefore, Cxs and Panx1 could serve as potential molecular biomarkers of tumor prognosis and possibly as targets for future novel therapeutical approaches

#### **Kongres / Congresse:**

22. Kongres HOOD-a

#### **Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

#### **Titula / Title:**

Dr.

Specijalizant / Resident

#### **Ime i prezime / First and Last Name:-First**

Matea

#### **Ime i prezime / First and Last Name:-Last**

Žužul



## 11. Marin Radmilović

**Naslov:**

Kada "normalan" OCT nalaz nije normalan? Prikaz slučaja okultne makularne distrofije.

**Autori:**

Marin Radmilović, Goran Marić, Zoran Vataavuk

**Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska

**Cilj:**

Prikaz slučaja okultne makularne distrofije (OMD) te naglašavanje kliničke nužnosti snimanja i oči tavanja skenova visoke definicije kod oslikavanja metodom optičke koherentne tomografije (OCT)

**Bolesnici i metode:**

Žena u dobi 52 godine upućena je na našu kliniku radi snimanja elektroretinograma (ERG) i vidnih evociranih potencijala (VEP) zbog nerazjašnjenog progresivnog bilateralnog pogoršanja vidne oštine u razdoblju od prethodne 3 godine. Svi prethodni oftalmološki pregledi opisani su kao normalni, s urednim nalazima OCT-

makule i glave vidnog živca, statičkom perimetrijom, magnetskom rezonancijom mozga i orbita i urednom proširenom laboratorijskom obradom. Prema protokolu klinike, pacijentica je prije snimanja ERG-a i VEP-

pregledana od strane retinologa i snimljene su nove OCT snimke makule i glave vidnog živca. Uočene su diskretne promjene u makularnim OCT snimkama sugestivne na okultnu makularnu distrofiju. U svrhu potvrde ili isključenja dijagnoze, snimljeni su VEP te ERG punog polja i multifokalni ERG.

**Rezultati:**

Kombinacija normalnog ERG-a punog polja i abnormalnog multifokalnog ERG-

uz sugestivan OCT nalaz i normalan izgled očne pozadine u skladu je s kliničkom dijagnozom okultne makularne distrofije (OMD), koja je prema nalazima naknadnog genetskog testiranja klasificirana kao nehereditarna OMD. Dodatno, prethodni navodno normalni izvještaji OCT- makule (printane verzije) analizirani su od strane retinologa te je kod istih zamijećena odsutnost skenova visoke definicije na kojima bi se postojeće nepravilnosti mogle uočiti.

**Zaključak:**

OMD je rijedak tip makularne distrofije. Točna mu je prevalencija nepoznata dijelom zbog rijetke pojave, a dijelom i zbog mogućih neprepoznatih slučajeva, ali je vjerojatno manja od 1 na 100.000 osoba. U slučajevima poput ovoga, preporučljivo je zadržati visok stupanj sumnje na rijetke bolesti makule i mrežnice, pri čemu je OCT nezamjenjivo i osjetljivo dijagnostičko oruđe, a koje je osim toga i dostupnije od elektrofizioloških testova. S tim na umu, prijeko je potrebno osigurati da se u svakom takvom slučaju obvezno snimaju i analiziraju OCT snimke visoke rezolucije.

**Title:**

When is a "normal" OCT scan not normal? A case of occult macular dystrophy.

**Authors:**

Marin Radmilović, Goran Marić, Zoran Vataavuk

**Institution:**

Department of Ophthalmology, Sestre milosrdnice University Hospital Center, Zagreb, Croatia

**Aim:**

To present a case of occult macular dystrophy (OMD), and to emphasize the importance and clinical necessity of obtaining and examining high definition optical coherence tomography (OCT) scans.

**Patients and methods:**

A 51-year-old female was referred to our clinic for electroretinography (ERG) and visual evoked potential (VEP) testing due to unexplained progressive bilateral visual impairment over the course of previous 3 years. All previous ophthalmic examinations have been ruled normal, along with macular and optic nerve head OCT scans, static perimetry, brain and orbit magnetic resonance imaging scans, and extended laboratory workup. As per in-house protocol, before the ERG and VEP testing, the patient was seen by our retina specialist and OCT scans were repeated. Discrete disturbances were noted in the macular OCT scans that suggested occult macular dystrophy. Pattern-reversal VEP, full-field ERG and multifocal ERG were performed to corroborate or exclude the diagnosis.

**Results:**

A combination of normal full-field ERG and abnormal multifocal ERG, along with suggestive OCT findings and normal fundus appearance prompted the clinical diagnosis of occult macular dystrophy (OMD). Further genetic testing classified it as nonhereditary OMD. Additionally, previous apparently normal macular OCT reports have been evaluated (printed versions) by our retina specialist and were notably lacking high definition scans that would have otherwise shown the existing irregularities.

**Conclusion:**

OMD is a rare type of macular dystrophy, with exact prevalence unknown due to its rarity and possible underdiagnosis, but likely below 1 in 100.000 people. In cases like this, maintaining a high level of suspicion for rare macular and retinal diseases is advisable. OCT is an indispensable and sensitive diagnostic tool in such cases, also more readily available than electrophysiological tests. However, in these instances care should be taken that high definition OCT scans are taken and analyzed, as not all macular OCT scans are the same.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

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**Ime i prezime / First and Last Name:-Last**

Radmilović

## 12. Ramić Senad

**Naslov:**

Sterilni keratitis kao rijetka komplikacija rožničnog cross-linking-a – prikaz slučaja

**Autori:**

Ramić S., Pavlović I., Šarić D.

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb; Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J. J. Strossmayera u Osijeku; Referentni centar Ministarstva zdravstva za dječju oftalmologiju i strabizam; Referentni centar Ministarstva zdravstva za nasljedne distrofije mrežnice.

**Cilj:**

Prikaz slučaja sterilnog keratitisa kao rijetke komplikacije rožničnog cross-linking-a.

**Bolesnici i metode:**

Šesnaestogodišnji pacijent upućen je u našu ustanovu zbog sumnje na ektaziju rožnice. Uz korekciju kosog astigmatizma najbolja korigirana vidna oštrina desnog oka bila je 0,7, dok je najbolja korigirana oštrina lijevog oka bila 1,0 [Snellen, dec]. Kliničkim pregledom i rožničnom tomografijom (Pentacam®, Oculus Optikgeräte GmbH, Wetzlar, Germany) dijagnosticiran je keratokonus sa uznapređovalom ektazijom desnog oka (Belin ABCD gradus 3-4, Kmax 62,8 D, Pachy. min. 421 µm) i početnom ektazijom lijevog oka, nakon čega je indiciran rožnični cross-linking oba oka, prvo desnog.

**Rezultati:**

Učinjen je rožnični cross-

linking ubrzanim protokolom nakon 30 minutne primjene 0,1% otopine riboflavina u 20% dekstranu. Na kontroli dan nakon zahvata nalaz je bio uredan. Na drugoj postoperativnoj kontroli tjedan nakon zahvata zamijećeni su multifokalni bjeličasti infiltrati prednje strome periferne rožnice uz dovršenu epitelizaciju i odsustvo konjunktivalne injekcije. Bris spojnice bio je sterilan te je, uz intenziviranu primjenu topikalne antibakterijske i glukokortikoidne terapije, zaustavljena progresija infiltrata. Na kontroli 3 mjeseca nakon zahvata zabilježena je najbolja korigirana vidna oštrina desnog oka od 0,7, blago zaravnanje centralne rožnice i stromalno periferno ožiljkavanje, bez znakova progresije bolesti.

**Zaključak:**

Sterilni rožnični infiltrati rijetka su komplikacija nakon cross-linking-a rožnice s potencijalom značajnog oštećenja vida ukoliko zahvaćaju centralni dio rožnice. Primjenom topikalne glukokortikoidne terapije moguće je postići kontrolu i zaustavljanje progresije keratitisa.

**Title:**

Sterile keratitis as a rare complication of corneal cross-linking – a case report

**Authors:**

Ramić S., Pavlović I., Šarić D.

**Institution:**

University Eye Department, University Hospital “Sveti Duh”, Zagreb; Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek; Referenc

e Centre of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strabismus; Reference Centre of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To report a case of sterile keratitis, a rare complication of corneal cross-linking.

**Patients and methods:**

A 16-year-

old male was referred to our Department for corneal ectasia evaluation. The patient had oblique astigmatism and best corrected visual acuity (BCVA) of 0.7 for the right eye, while the BCVA of the left eye was 1.0 [Snellen, dec]. Keratoconus was diagnosed via clinical examination and corneal tomography (Pentacam®, Oculus Optikgeräte GmbH, Wetzlar, Germany). There was an advanced ectasia of the right eye (Belin ABCD grade 3-4, Kmax 62.8 D, Pachy. min. 421 µm) and mild ectasia of the left eye. Corneal cross-linking of both eyes was indicated, right eye first.

**Results:**

After a 30-

minute application of 0.1% riboflavin in 20% dextran, accelerated protocol corneal cross-linking was performed. Findings were unremarkable the first postoperative day. At the 1-week follow-

up there were multifocal white anterior stromal infiltrates in the corneal periphery, the corneal epithelium was healed and there was no conjunctival injection. The conjunctival swab came back sterile and, with intensive topical antibacterial and glucocorticoid therapy, infiltrates progression was halted. At the 3-month follow-

up the BCVA of the right eye was 0.7, there was some mild flattening of the central cornea and peripheral stromal scarring, with no signs of progression.

**Conclusion:**

Sterile corneal infiltrates are a rare complication of corneal cross-linking with the potential of significant visual disturbance if central cornea is affected. Disease control can be achieved with topical glucocorticoid application.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJA ZA KONTAKTOLOGIJU / Contactology section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Senad

**Ime i prezime / First and Last Name:-Last**

Ramić

### 13. Knežić Zagorec Mira

**Naslov:**

Pterigij i refrakcijska dilema u kirurgiji katarakte

**Autori:**

Knežić Zagorec M., Bosnar D., Bušić M., Bjeloš M., Ramić S., Pavlović I.

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilište J. J. Strossmayera u Osijeku, Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam, Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice

**Cilj:**

Prikazati slučaj izazovnog izračuna jakosti intraokularne leće kod pacijenta s istodobnom kataraktom i pterigijem.

**Bolesnici i metode:**

72-

godišnji bolesnik s najbolje korigiranom vidnom oštrinom na daljinu 0,05 (Snellen, decimalni zapis) upućen je na operaciju katarakte lijevog oka. Pregledom na biomikroskopu s procjepnom svjetiljkom uočen je nazalni pterigij koji prelazi limbus rožnice za 4 mm i katarakta stupnja NO4NC4C3 prema LOCS III (engl. Lens Opacification Classification System III). Rožničnom tomografijom (Pentacam®, Oculus Optikgeräte GmbH, Wetzlar, Germany) uočeno je zaravnjenje nazalne periferne rožnice i značajni iregularni rožnični astigmatizam. Zbog pretpostavljene smanjene točnosti izračuna jakosti intraokularne leće (IOL), najprije je učinjena ekscizija pterigija sa spojničnim autotransplantatom. Rožnična tomografija i izračuni jakosti IOL-

a na temelju biometrijskih podataka (IOLMaster 700®, Carl Zeiss, Meditec, Germany) dobivenih na mjesečnim kontrolnim pregledima nakon operacije pterigija uspoređeni su s početnim vrijednostima. Fakoemulzifikacija s implantacijom IOL-

a u kapsularnu vrećicu učinjena je nakon postizanja astigmatičke stabilnosti rožnice 4 mjeseca nakon operacije pterigija.

**Rezultati:**

Prednji rožnični astigmatizam reduciran je sa 7,6 D preoperativno na 0,7 D te 0,2 D 1 mjesec i 4 mjeseca nakon operacije pterigija. Sferni ekvivalent jakosti IOL-

a prema SRK/T i Barrett Universal II formuli reduciran je s 23,5 D na 21,5 D 1 mjesec nakon operacije pterigija i ostao je stabilan 4 mjeseca postoperativno. Izabrana je IOL jakosti 21,5 D. Nekorigirana vidna oštrina na daljinu nakon operacije katarakte bila je 1,0 (Snellen, decimalni zapis).

**Zaključak:**

Promjena predviđene jakosti IOL-

a iznosila je 2 D. Ekscizija pterigija sa spojničnim autotransplantatom te fakoemulzifikacija s implantacijom IOL-a u drugom koraku omogućava točniji izračun IOL-

a i optimalne refrakcijske ishode. Termin operacije katarakte ovisi o vremenu potrebnom za astigmatičku stabilizaciju rožnice, što je u ovom slučaju postignuto 4 mjeseca nakon operacije pterigija.

**Title:**

Pterygium-induced refractive dilemma in cataract surgery

**Authors:**

Knežić Zagorec M., Bosnar D., Bušić M., Bjeloš M., Ramić S., Pavlović I.

**Institution:**

University Eye Department, University Hospital "Sveti Duh", Zagreb, Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek, Reference center of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strabismus, Reference center of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To report a case of challenging IOL power calculation in a patient with concurrent cataract and pterygium.

**Patients and methods:**

A 72-year-old male patient was referred for left eye cataract surgery. His best-corrected distance visual acuity was 0.05 (Snellen, decimal). Slit-lamp examination was remarkable for nasal pterygium extending 4 mm onto the cornea and cataract grade NO4NC4C3 according to Lens Opacification Classification System III. Corneal tomography (Pentacam®, Oculus Optikgeräte GmbH, Wetzlar, Germany) demonstrated flattening of the nasal peripheral cornea and significant irregular corneal astigmatism. The intraocular lens (IOL) power calculations were presumed to be less accurate, so the patient underwent pterygium excision with conjunctival autograft first. Preoperative and postoperative corneal tomography and the IOL power calculations based on biometric measurements (IOLMaster 700®, Carl Zeiss, Meditec, Germany) obtained monthly after pterygium surgery were compared. Phacoemulsification with in-the-bag IOL implantation was performed when corneal astigmatic stability was achieved at the 4-month follow-up visit.

**Results:**

Front corneal astigmatism decreased from 7.6 D preoperatively to 0.7 D and 0.2 D at 1 month and 4 months after pterygium surgery, respectively. The IOL spherical equivalent power using both SRK/T and Barrett Universal II formula decreased from 23.5 D to 21.5 D at 1 month after pterygium surgery, and remained stable up to 4 months. The IOL power of 21.5 D was selected. Uncorrected distance visual acuity after cataract surgery was 1.0 (Snellen, decimal).

**Conclusion:**

Predicted IOL power change was 2 D. In our clinical experience, a two-step procedure which consists of pterygium excision with conjunctival autograft followed by phacoemulsification with IOL implantation provides more accurate IOL calculation and optimal refractive outcomes. The timing of cataract surgery depends on the timing of corneal astigmatic stabilization, which in this case was achieved 4 months after pterygium surgery.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

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Knežić Zagorec

## 14. Maja Malenica Ravlić

**Naslov:**

Validacija upitnika za ispitivanje rizičnih čimbenika za razvoj kratkovidnosti

**Autori:**

Maja Malenica Ravlić, Jelena Škunca Herman, Lana Knežević, Zrinka Car, Zoran Vataavuk

**Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb, Hrvatska

**Cilj:**

Istražiti pouzdanost odgovora roditelja pri ispunjavanju upitnika za ispitivanje rizičnih čimbenika za razvoj miopije.

**Bolesnici i metode:**

U ovu prospektivnu longitudinalnu studiju je uključen po jedan roditelj (majka ili otac) 80 djece, k oji su samostalno ispunili upitnike za ispitivanje čimbenika za razvoj kratkovidnosti. Svim ispitanic ima podijeljena su dva objedinjena upitnika: SZO upitnik, preuzet sa internetske stranice Svjetske zdravstvene organizacije te Upitnik kratkovidnost Vinogradska, izrađen od strane autora ove stu dije, prilikom prvog dolaska te 6 mjeseci kasnije. Prvi upitnik podijeljen je na 4 skupine pitanja: 1) o školskoj nastavi ( 3 pitanja i 7 potpitanja), 2) o dnevnim aktivnostima djece (3 pitanja i 27 potpit anja), 3) o učenju djece i informacijama o obitelji (3 pitanja i 18 potpitanja) te 4) o radu na blizinu/ daljinu ( 22 pitanja). Drugi upitnik kreiran je u našoj ustanovi i obuhvatio je antropometrijske par ametre, refraktivnu grešku roditelja, životni stil (vrijeme provedeno na otvorenom ili kod kuće), šk olski uspjeh (ukupni prosjek ocjena i po pojedninim predmetima) te osobni stav roditelja o nošen ju naočala u vlastitog djeteta. U statističkoj analizi korišteni su Wilcoxon i t-test.

**Rezultati:**

Studiji je pristupilo 80 roditelja (jedan roditelj po djetetu), među kojima 66% muškaraca (n=53). O d ukupno 80 podijeljenih upitnika, njih 52% (n=42) je ispunjeno ispravno i u potpunosti. U 29% (n =23) upitnika uočili smo nepotpuno ispunjavanje i preskakanje odgovara, a u 18% (n=14) ispunje nih upitnika pronađeno je nepravilno odgovaranje u smislu zaokruživanja svih predloženih odgov ora. Nepotpuno ispunjeni upitnici nisu uključeni u daljnju statističku obradu. Za ispunjavanje upit nika prosječno je bilo potrebno 18 minute. U svih analiziranih upitnika utvrđena je statistički znač ajna podudarnost dobivenih odgovora prilikom prvog ispunjavanja i 6 mjeseci kasnije ( $p=0.012$ ). Statistički značajna razlika uočena je u boravku na otvorenom tijekom tjedna (mean 2.5 sati tjeko m vikenda i mean 0.5h tijekom radnog tjedna,  $p<0.001$ ). Također, uočen je i dnevni uvećani broj minuta provedenih u čitanju i radu na blizu (igranje igrice) tijekom vikenda (mean 4h) u usporedb i s radnim tjednom (mean 1.5 sati dnevno,  $p<0.001$ ). Analizirajući drugi dio upitnika, nije se uočila promjena u antropometrijskim parametrima, kao niti podatak o refraktivnoj greški roditelja ( $p=0 .231$  i  $p=0.161$ ). Većina ispitanika je odgovorila je kako bi njihovo dijete dobro prihvatilo nošenje n aočala (72%, n=58), međutim većina roditelja bi teško prihvatila činjenicu da njihovo dijete mora nositi naočale (65%, n=52).

**Zaključak:**

Uočen je značajan broj neadekvatno ili nepotpuno ispunjenih upitnika za ispitivanje čimbenika za razvoj kratkovidnosti, što može ukazivati na potrebu povećanja svijesti roditelja o važnosti progr



esije kratkovidnosti i njezinog ranog otkrivanja te potrebu nadzora prilikom ispunjavanja upitnika ili provjere na kraju ispunjavanja.

**Title:**

Validation of the questionnaire for the examination of risk factors for the development of myopia

**Authors:**

Maja Malenica Ravlić, Jelena Škunca Herman, Lana Knežević, Zrinka Car, Zoran Vatavuk

**Institution:**

University Department of Ophthalmology, University Hospital Center Sestre milosrdnice, Zagreb, Croatia

**Aim:**

To investigate the reliability of parents' responses when completing questionnaires for myopia progression risk factors.

**Patients and methods:**

In this prospective longitudinal study, one parent (mother or father) of 80 children was included, who individually completed the questionnaires for myopia progression risk factors. All subjects were given two unified questionnaires: WHO questionnaire, taken from the Website of the World Health Organization and Questionnaire myopia Vinogradska, produced by the authors of this study, on baseline visit and 6 months later. The first questionnaire is divided into 4 groups of questions : 1) concerning school program (3 questions, 7 subquestions), 2) about children's daily activities ( 3 questions, 27 subquestions), 3) of their learning habits and information about the family ( 3 questions, 18 subquestions ), and 4) concerning daily activities at near distance ( 22 questions). The second questionnaire was created in our institution and included as following: anthropometric parameters, parents' refractive error, their child's lifestyle (time spent outdoors or at home), school performance (overall grades - total and for individual subjects) and parents' personal attitude on their child wearing glasses. Statistical analysis included Wilcoxon paired and paired t-test.

**Results:**

Study included 80 parents (one parent per child), among whom 66% were male (n=53). Out of a total of 80 distributed questionnaires, 52% (n=42) were completed correctly and completely. In 29 % (n=23) of questionnaires, we noticed incomplete and skipped answers, and in 18% (n=14) of completed questionnaires, improper filling out was found in terms of checking all proposed answers. Incompletely completed questionnaires were excluded from further statistical analysis. On average, it took 18 minutes to complete the questionnaire. In all analyzed questionnaires, we found a statistically significant matching of the answers obtained at the baseline and 6 months later (p= 0.012). A statistically significant difference was observed in outdoor activities during the week (mean 2.5 hours over the weekend and mean 0.5h during the working week, p<0.001). Also, there was an increased daily number of minutes spent reading and working close-up (playing computer games) during the weekend (mean 4h) compared to the school days (mean 1.5 hours a day, p<0.001). Analyzing the second part of the questionnaire, no change in anthropometric parameters was observed, as well as data on parents' refractive errors (p = 0.231 and p = 0.161). The majority of subjects responded that their child would easily accept wearing glasses (72%, n=58), but most parents would have a hard time themselves, accepting the fact that their child had to wear glasses (65%, n=52).

**Conclusion:**

A significant number of parents did not complete the questionnaires in total, which may indicate the need to increase their awareness of the global importance of myopia progression and its early detection and the need for supervision when filling out the questionnaire or checking at the end of the filling.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

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Maja

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Malenica Ravlić

## 15. Jelena Škunca Herman

**Naslov:**

Kako odabrati pravi upitnik za istraživanje rizičnih čimbenika miopije?

**Autori:**

Škunca Herman J, Malenica Ravlić M, Knežević L, Car Z, Vatavuk Z.

**Ustanova:**

KBC Sestre milosrdnice

**Cilj:**

Istražiti koji upitnik koristiti za potrebe istraživanja rizičnih čimbenika razvoja i progresije kratkovidnosti

**Bolesnici i metode:**

pretraživanje baze podataka pubmed upisom ključnih riječi „myopia“, „questionnaire“ „school children“ i baze podataka Google Scholar ključnih riječi "myopia" "questionnaire" "children" "schoolchildren" "outdoor" "education" "predictive" i analiza online dostupnih upitnika koji se koriste za istraživanje RČ razvoja i progresije kratkovidnosti. Kriteriji za uključivanje bili su samo upitnici s pitanjima o glavnim čimbenicima rizika koji su u snažnoj i uzročnoj vezi s kratkovidnošću: vrijeme provedeno vani, tjelesna aktivnost, vrijeme ispred ekrana i obrazovanje, dobna skupina od 5-16 godina. Isključujući kriterij bila je dob mlađa od 5 godina i starija od 16 godina, upitnici o rizičnim čimbenicima umjereno i slabo povezanim s miopijom (demografski i antropometrijski podatci, obiteljske karakteristike, socioekonomske karakteristike, okolišni čimbenici rizika poput zagađenosti zraka, cirkadiani ritam, urbano-ruralno, izloženost umjetnom svjetlu) te uobičajena uvjerenja povezanosti miopije s veličinom slova, postura tijela za vrijeme čitanja, čitanje pri slabom osvjetljenju. Analizirani su samo oni upitnici u kojima su postavljena točno određena pitanja određenoj i odabranoj vrsti ispitanika na točno isplaniran način sa svrhom i ciljem koji je dobiti što više istinitih odgovora odnosno podataka o rizičnim čimbenicima povezanim s kratkovidnošću. Analizirana je dostupnost upitnika, razumljivost pitanja, kvaliteta postavljenih pitanja, tip pitanja (otvoreni, zatvoreni i miješani tip), podatci o standardizaciji i validaciji.

**Rezultati:**

Od 226 studija analizirani su upitnici iz 52 studije. 90% (47) upitnika imalo je razumljiva pitanja koja su uglavnom bila mješovitog tipa. Većina studija koristila je vlastiti nestandardiziran i nevalidiran upitnik. Jedini validirani upitnici, upitnici su Svjetske zdravstvene organizacije (SZO) i SMS upitnik (Sydney Myopia Study questionnaire) koji su korišteni samo u 13 studija od kojih je SMS upitnik korišten u 11 studija. U preostale 2 studije korišten je upitnik SZO koji je jedini validiran i standardiziran upitnik.

**Zaključak:**

Kriteriji odabira pravog upitnika trebaju biti standardizacija i validacija zbog valjanosti i pouzdanosti podataka. Upitnik SZO jedini je standardiziran i validiran i trebao bi se kao takav koristiti u istraživanjima rizičnih čimbenika razvoja i progresije kratkovidnosti u istraživanjima.

**Title:**

How to choose the right questionnaire for myopia risk factor detection?

**Authors:**

Škunca Herman J, Malenica Ravlić M, Knežević L, Car Z, Vataavuk Z.

**Institution:**

University Eye Clinic, University Clinical Centre "Sestre milosrdnice"

**Aim:**

to investigate which questionnaire to use for the purpose of detecting risk factors for myopia detection and progression

**Patients and methods:**

A detailed search was performed using the pubmed database with the keywords "myopia", "questionnaire" "school children" and the Google Scholar database with the keywords "myopia", "questionnaire", "children", "schoolchildren", "outdoor", "education" and "predictive". Online available questionnaires that are used to investigate risk factors for myopia detection and progression were analyzed. Inclusion criteria were only questionnaires with questions about the main risk factors that are strongly and causally related to myopia: time spent outside, physical activity, screen time and education, age group from 5 to 16 years. Exclusion criteria were age younger than 5 years and older than 16 years, questionnaires on risk factors moderately and weakly associated with myopia (demographic and anthropometric data, family characteristics, socioeconomic characteristics, environmental risk factors such as air pollution, circadian rhythm, urban-rural, exposure to artificial light) and common beliefs about the connection between myopia and letter size, body posture during reading, reading in low light. Only those questionnaires in which specific questions were asked to a specific and selected type of respondents in a precisely planned manner with the purpose and goal of obtaining as many truthful answers as possible, i.e. data on risk factors related to myopia were analyzed. The availability of the questionnaire, the comprehensibility of the questions, the quality of the questions, the type of questions (open, closed and mixed type), data on standardization and validation were analyzed.

**Results:**

52 studies out of 226 studies were analyzed. 90% (47) of the questionnaires were comprehensible. The most common type of question was a mixed type. Most studies used their own non-standardized and non-validated questionnaire. The only validated questionnaires are the questionnaires of the World Health Organization (WHO) and the SMS questionnaire (Sydney Myopia Study questionnaire), which were used only in 13 studies, of which the SMS questionnaire was used in 11 studies. In the remaining 2 studies, the WHO questionnaire was used, which is the only validated and standardized questionnaire.

**Conclusion:**

The criteria for choosing the right questionnaire should be standardization and validation due to the validity and reliability of the data. The WHO questionnaire is the only standardized and validated one and should be used as such in research of detecting risk factors for myopia detection and progression.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

**Titula / Title:**

Dr.sc.

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Jelena

**Ime i prezime / First and Last Name:-Last**

Škunca Herman

## 16. Martina Galiot Delić

### **Naslov:**

Obostrana optička neuropatija i atrofija retine u pedijatrijskog pacijenta nakon alogenične transplantacije koštane srži uslijed liječenja X vezanog hiper IgM sindroma

### **Autori:**

Martina Galiot Delić, Sanja Perić, Nenad Vukojević, Marija Barišić Kutija, Petra Kristina Ivkić

### **Ustanova:**

Klinički bolnički centar Zagreb, Klinika za očne bolesti

### **Cilj:**

Prikazati pedijatrijskog pacijenta s naglim, bezbolnim gubitkom vida na oba oka 4 mjeseca nakon alogenične transplantacije koštane srži od nesrodnog davatelja radi X-vezanog hiper IgM sindroma.

### **Bolesnici i metode:**

10- godišnji dječak se javlja u hitnu oftalmološku ambulantu zbog naglog pada vida na desno oko . Tijekom narednih dana se žali na izraženo pogoršanje vidne oštine na oba oka. 4 mjeseca ranij e provedena je alogenična transplantacija koštane srži od nesrodnog davatelja radi X-vezanog hiper IgM sindroma. Nakon transplantacije je uključena profilaktična antibiotska, antimikotska i antivirusna terapija te terapija sistemskim kortikosteroidima i imunosupresivom radi sprečavanja razvoja GVHD-

a. Učini se kompletni oftalmološki pregled i obrada koja uključuje VEP, ERG, OCT očnog živca i makule , OCT angiografija, VP Goldmann i VP Octopus LV, FAG i FAF. Učini se i kompletna imunološka, serološka, infektološka i neuroradiološka obrada te pregled neuropedijatra s lumbalnom punkcijom.

### **Rezultati:**

Oftalmološko praćenje tijekom narednih 10 dana upućuje na naglo i progresivno pogoršanje vidne oštine oba oka do brojanja prstiju pred očima na desno oko te vidne oštine 0.2 po Snellenu na lijevo oko. Pregled prednjeg segmenta na biomikroskopu je uredan, desno vidljiv naznačen R APD. Na stražnjem segmentu se nađu stanjene, uske arteriole i bljedilo PNO desno, lijevo PNO uredna izgleda, bez znakova upale i vaskulitisa. Intraokularni tlak je bio uredan. Vidno polje Goldmann prvi dan nakon kontrole u hitnoj službi ukazuje na centralni i ekscentrični otočić vida desno te suženje vidnog polja nazalno lijevo, u narednim danima bilježi se pogoršanje u nalazu vidnog polja na oba oka. Vidni evocirani potencijali su pokazali produženu latenciju P100 vala obostrano, elektoretinogram na snižene amplitude desno za fotopičke i skotopičke odgovore. OCT angiografija ukazuje na normalnu kapilarnu perfuziju, OCT PNO i makule na stanjenje u ganglijskom sloju stanica i u volumenu makule. Nalaz fluoresceinske angiografije ukazuje na atrofiju retine bez znakova vaskulitisa , ishemije i neovaskularizacija. MR mozga i orbita i MRA su uredni osim opisane kortikalne atrofije uslijed dugotrajnog korištenja kortikosteroida. Pristigli nalazi lumbalne punkcije, imunološke i serološke obrade su uredni. Nalazi anti MOG, anti AqP4 i genetska analiza na Leberovu hereditarnu optičku neuropatiju su u tijeku.

### **Zaključak:**

Promjene na retini i vidnom živcu su vrlo rijetke kod GVHD-

a nakon transplantacije koštane srži. Ukoliko se manifestiraju, dovode do značajnog pada vidne o

štrine sve do sljepoće. Ciljanom dijagnostičkom obradom i multidisciplinarnim pristupom, moraju se što prije isključiti drugi infektivni i neinfektivni uzroci, kako bi se što ranije krenulo s adekvatnom terapijom s ciljem da pokuša utjecati na reverzibilne promjene vida i očuva funkcionalna vidna oštrina

**Title:**

Bilateral optic neuropathy and retinal atrophy in pediatric patient after allogeneic transplantation of bone marrow for X-linked hyper IgM syndrome

**Authors:**

Martina Galiot Delić, Sanja Perić, Nenad Vukojević, Marija Barišić Kutija, Petra Kristina Ivkić

**Institution:**

Clinical Hospital Zagreb, Department of ophthalmology

**Aim:**

To present a pediatric patient who presented with abrupt, painless loss of vision on both eyes for months after allogeneic bone marrow transplantation for X-linked hyper IgM syndrome

**Patients and methods:**

10-year-

old patient presented in emergency department of ophthalmology for decline of visual acuity in right eye. After a few days he complained of rapid deterioration of visual acuity in both eyes. Four months earlier allogeneic transplantation of bone marrow from unrelated donor for X-linked hyper IgM syndrome was performed. Prophylactic antibiotic, antimicrobial and antiviral therapy as well as steroid and immunosuppressive therapy was introduced to prevent development of GVHD. Complete ophthalmological examination and work up was done including VEP, ERG, OCT of optic nerve and macula, OCT angiography, visual fields, FAG and FAF. Immunological, serological, neurological workup, examination by neuropediatrician and lumbar puncture was done.

**Results:**

Ophthalmologic control visits in next 10 days point to sudden and progressive visual acuity decline in both eyes, to counting fingers in right eye and 0,2 to Snellen in left eye. Anterior segment was normal in both eyes, except for blunt pupillary light reflex in right eye. Fundus examination showed narrowed and attenuated arterioles and optic nerve head pallor right, in left eye normal optic disc morphology, without signs of vasculitis and inflammation. The intraocular pressure was normal. Goldmann visual field examination on first day after emergency room examination showed extensive peripheral scotomas and preserved central vision in right eye and narrowing of nasal part in left eye, in next few days there is deterioration in visual field findings. Visual evoked potential showed prolonged P100 latency, on electroretinogram decreased amplitude in right eye for photopic and scotopic responses. OCT angiography showed normal capillary perfusion, OCT of optic nerve and macula showed ganglion cell layer and macular thickness thinning. Fluorescein angiography showed signs of retinal atrophy without vasculitis, ischemia or neovascularizations. There was no abnormality in optic nerve and brain MR and MRA except cortical atrophy. Cerebrospinal fluid examination, immunological and serological tests were negative. Results for AQP4, anti MOG and genetic testing for Leber hereditary optic neuropathy are not yet finished.

**Conclusion:**

Changes on retina and optic nerve are very rare manifestation of graft versus host disease (GVHD) after bone marrow transplantation. If they manifest, they lead to a significant deterioration of vision, even blindness. With proper diagnostic examination and multidisciplinary approach, other infectious and non-

infectious causes must be ruled out as soon as possible in order to start adequate therapy and to try to influence reversible vision changes and preserve functional visual acuity.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Martina

**Ime i prezime / First and Last Name:-Last**

Galiot Delić



## 17. Skelin Ljubica

**Naslov:**

Postoperativni astigmatizam nakon fakoemulzifikacijskog zahvata

**Autori:**

Skelin Lj, Siničić A, Znaor Lj, Bućan K.

**Ustanova:**

Klinika za očne bolesti, KBC Split

**Cilj:**

Cilj istraživanja bio je utvrditi utjecaj glavnog rožničnog reza na postoperativni astigmatizam s obzirom na subjektivni dojam kvalitete kirurškog noža i resteriliziranost noža koji se koristio pri operaciji mrežne.

**Bolesnici i metode:**

Istraživanje se provodilo na Klinici za očne bolesti, Kliničkog bolničkog centra Split. Uključeno je 23 pacijenta. Vrijeme provedeno za prikupljanje podataka iznosilo je 6 mjeseci. Zapisan je subjektivni dojam kvalitete keratoma te da li je keratom nov ili resteriliziran.

**Rezultati:**

Od 23 bolesnika uključenih u ovo istraživanje 10 (43,48%) je muškaraca i 13 (56,52%) žena. Medijana dobi ispitanika iznosi 73 (56-88). Vidna oština nakon operacije je značajno bolja. Postoperativni astigmatizam je statistički značajno manji od preoperativnog astigmatizma. Nije pokazana statistički značajna razlika kod korištenja resteriliziranog i novog noža. Dokazana je negativna korelacija predoperativnog astigmatizma u odnosu na postoperativni.

**Zaključak:**

Vidna oština nakon operacije se poboljšala. Veličina incizije od 2,2 milimetra ima povoljan učinak na postoperativni astigmatizam. Usporedbom osi cilindra na autokeratorefraktometru i Pentacam nađena je razlika u vrijednostima, ali nije se pokazala statistički značajnom. Postoperativni astigmatizam je statistički značajno manji od preoperativnog astigmatizma. Nismo pronašli statistički značajnu razliku u indukciji postoperativnog astigmatizma u bolesnika operiranih sa resteriliziranim i neresteriliziranim jednokratnim mikrokeratomima. Pokazali smo pozitivnu korelaciju postoperativne promjene astigmatizma, međutim nije statistički značajna. Dokazana je negativna korelacija predoperativnog astigmatizma u odnosu na postoperativni.

**Title:**

Postoperative astigmatism after phacoemulsification

**Authors:**

Skelin Lj, Siničić A, Znaor Lj, Bućan K.

**Institution:**

Department of Ophthalmology, University Hospital Centre Split

**Aim:**

The aim of the study was to determine the influence of the main corneal incision on postoperative astigmatism considering subjective impression of the quality of the microkeratome and resterilization.

**Patients and methods:**

The research was conducted at the Clinic for Ophthalmology, Clinical Hospital Center Split. 23 patients were included. Patients were examined by an ophthalmologist. Visual acuity (SC, CC, spherical equivalent), intraocular pressure by applanation Goldmann tonometry, fundus in mydriasis with a superfield non-contact lens and biomicroscopic examination of the anterior segment of the eye were recorded. The impression of the quality of the keratoma and reesterilization were recorded.

**Results:**

Of the 23 patients included in this study, 10 (43.48%) were men and 13 (56.52%) were women. The median age of the respondents was 73 (56-88). Visual acuity after surgery is significantly better. Postoperative astigmatism is statistically significantly lower than preoperative astigmatism. No statistically significant difference was shown when using a reesterilized and a new knife. There is a negative correlation between preoperative astigmatism and postoperative astigmatism.

**Conclusion:**

Visual acuity improved after surgery. An incision size of 2.2 millimeters has a beneficial effect on postoperative astigmatism. A comparison of the cylinder axis on the autokeratorefractometer and the Pentacam found a difference in values, but did not prove statistically significant. Postoperative astigmatism is statistically significantly lower than preoperative astigmatism. We found no statistically significant difference in the induction of postoperative astigmatism in patients operated with reesterilized and non-sterilized disposable microkeratomas. We showed a positive correlation of postoperative change in astigmatism, however it is not statistically significant. There is a negative correlation between preoperative astigmatism and postoperative astigmatism.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ljubica

**Ime i prezime / First and Last Name:-Last**

Skelin

## 18. Dubravka Biuk

**Naslov:**

ŠTO JE ISPLATIVIJE – PROMIJENITI U BEZKONZERVANSNU ILI DODATI UMJETNE SUZE NA POSTOJEĆU ANTIGLAUKOMSKU TERAPIJU?

**Autori:**

Dubravka Biuk, Andrijana Kopic, Maja Vinkovic, Roberta Šokac, Patricia Reisz-Majic, Nika Borovac

**Ustanova:**

Klinički bolnički centar Osijek, Klinika za očne bolesti

**Cilj:**

Utvrditi je li za pacijenta isplativije, ali prvenstveno korisnije, promijeniti antiglaukomsku terapiju bez konzervansa u bezkonzervansnu ili na postojeću dodati umjetne suze.

**Bolesnici i metode:**

U praćenje će biti uključeni pacijenti s poremećajem okularne površine i na antiglaukomoj terapiji s konzervansom koji nisu u proteklih mjesec dana imali operaciju na prednjem segmentu oka. Prva skupina ispitanika dobit će na postojeću terapiju umjetne suze koje sadrže hijaluronsku kiselinu i trehalozu, a drugoj skupini ispitanika zamijenit će se postojeća antiglaukomska terapija u istu tu terapiju ali bez konzervansa.

**Rezultati:**

Nakon 4 tjedna učinit će se kontrolni pregled. Pratiti ćemo kvalitetu suznog filma – TBUT test, izgled rožnice – Oxfordska skala i subjektivni osjećaj – OSD upitnik. Pacijenti će biti regrutirani iz ambulante za glaukom.

**Zaključak:**

Pacijenti na antiglaukomoj terapiji često imaju poremećaj okularne površine i subjektivne smetnje u smislu nelagode, crvenila i žuljanja oka. Često su smetnje izazvane konzervansom u antiglaukomoj terapiji. Takve smetnje mogu ih odvratiti od redovitog korištenja antiglaukomske terapije, te je stoga potrebno pronaći odgovarajuću metodu liječenja koja će doprinijeti redovitom korištenju terapije i očuvanju vida kod glaukomskih pacijenata.

**Title:**

WHAT IS MORE EFFECTIVE – SWITCH TO PRESERVATIVE-FREE OR ADD ARTIFICIAL TEARS TO EXISTING ANTI-GLAUCOMA THERAPY?

**Authors:**

Dubravka Biuk, Andrijana Kopic, Maja Vinkovic, Roberta Šokac, Patricia Reisz-Majic, Nika Borovac

**Institution:**

University Hospital Centre Osijek, Eye clinic

**Aim:**

To determine whether it is more effective and useful for glaucoma patients, to switch antiglaucoma therapy to preservative-free antiglaucoma therapy or add artificial tears to the existing one

**Patients and methods:**

This study will include glaucoma patients with ocular surface disease which have antiglaucoma therapy that contains preservatives who did not undergo anterior segment surgery in the past month. The first group of patients will get artificial tears containing hyaluronic acid and

d trehalose for their existing therapy, and the second group of patients will have their existing anti-glaucoma therapy replaced by the preservative-free anti-glaucoma therapy.

**Results:**

After 4 weeks, a control examination will be done. We will monitor the quality of the tear film - TBUT test, corneal appearance - Oxford scale and subjective feeling - OSD questionnaire. Patients will be recruited from our glaucoma unit.

**Conclusion:**

Patients on anti-glaucoma therapy often have an ocular surface disease and subjective disturbances in terms of discomfort and redness of the eye. They are often caused by preservatives that are part of the drops. Such disturbances can discourage patients from regular use of anti-glaucoma therapy, and therefore it is necessary to find an appropriate treatment that will contribute to the regular use of therapy and preservation of vision in glaucoma patients.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Dubravka

**Ime i prezime / First and Last Name:-Last**

Biuk

## 19. Tin Šimić

**Naslov:**

Prikaz slučaja: Bilateralne metastaze žilnice kod karcinoma dojke

**Autori:**

Tin Šimić dr. med, Prof.dr.sc Tea Čaljkušić-

Mance, Prof.dr.sc. Nenad Vukojević, Lana Kostić dr.med, Vedran Markušić dr.med

**Ustanova:**

Klinički Bolnički Centar Rijeka, Klinički Bolnički Centar Zagreb

**Cilj:**

Intraokularna metastaza kod primarnog karcinoma dojke predstavlja relativno rijetku patologiju sa incidencijom od 2%-

7%. Žilnica, sa incidencijom od 88%, predstavlja dominantno sjelo metastatskih intraokularnih novotvorina. S obzirom da je pojava intraokularnih metastaza direktno povezana sa lošom prognozom liječenja, cilj je prikazati važnost oftalmološkog pregleda kod onkoloških pacijenata.

**Bolesnici i metode:**

Prikaz slučaja 71-

godišnje pacijentice kod koje se prilikom općeg oftalmološkog pregleda zbog slabljenja vida desnog oka, postavi sumnja na tumorski proces oba oka. Pacijentica do obrade nije teže bolovala, obiteljska anamneza negativna na onkološke bolesti. U tijeku obrade učini se kompletna oftalmološka obrada uz UTZ orbite i MR orbite te radiološko-

kirurška: mamografija, CT toraksa te rukom vođena CNB dojke kao i patohistološka obrada uzorka.

**Rezultati:**

Učinjenom oftalmološkom obradom postavi se dijagnoza neoplazme žilnice oba oka, a kompletnom obradom postavi se dijagnoza invazivnog luminal B HER2 neg. karcinoma dojke sa metastazama u plućima i orbitama. S obzirom na nalaz učini se brahiterapija lijevog oka ugradnjom 106RuC CB aplikatora te se pacijentica uputi na daljnje kirurško-onkološko liječenje.

**Zaključak:**

Pristup liječenju zloćudnih oftalmoloških neoplazmi ostaje dalje predmet proučavanja. S obzirom da je rano otkrivanje zloćudnih novotvorina kao i njihovih metastaza ključno za adekvatno liječenje ovim prikazom slučaja prikazali smo važnost kompletnog oftalmološkog pregleda u sklopu multidisciplinarne obrade tumora, naročito karcinoma dojke i pluća.

**Title:**

Case report: Breast cancer with bilateral choroidal metastasis

**Authors:**

Tin Šimić MD, Prof.dr.sc Tea Čaljkušić-

Mance, Prof.dr.sc. Nenad Vukojević, Lana Kostić MD, Vedran Markušić MD

**Institution:**

Clinical Hospital Center Rijeka, Clinical Hospital Center Zagreb

**Aim:**

Intraocular metastasis of primary breast cancer is a relatively rare pathology with an incidence of 2-

7%. Choroid, with 88% incidence, represents the dominant site of intraocular metastasis. Given that, the occurrence of intraocular metastasis is directly associated with poor prognosis, our aim was to demonstrate the importance of ophthalmological screening in oncological patients.

**Patients and methods:**

Case study of a 71-year-old female patient complaining of significant sight loss in her right eye, detected with a suspected tumor in both eyes during general ophthalmological screening. Until screening, the patient has no significant illness and no family history of cancer. For further diagnosis a complete ophthalmological examination was conducted with orbital ultrasound and MRI and also radiological-surgical screening: mammography, CT of thorax, manual core needle biopsy and histopathological sample testing.

**Results:**

Ophthalmological examination indicated choroidal neoplasm in both eyes, while conducting a complete examination confirmed the diagnosis of an invasive luminal B HER2 neg. breast cancer with orbital and lung metastasis. Due to such diagnosis, brachytherapy in the left eye was performed by installing a 106RuCCB applicator. The patient was then instructed to further surgical and oncological treatment.

**Conclusion:**

The approach to treating malignant ophthalmological neoplasm still remains subject to further research. Given that early diagnosis of malignant tumors and its metastatic forms is fundamental to providing adequate treatment, this case report underlines the importance of a complete ophthalmological examination as a part of multidisciplinary cancer diagnosis, more specifically in breast and lung cancer.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Specijalizant / Resident

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Tin

**Ime i prezime / First and Last Name:-Last**

Šimić

## 20. Bosnar Damir

**Naslov:**

Ekstrakcija submakularnog perfluorokarbonskog tekućina: novi kirurški pristup

**Autori:**

Bosnar D., Predović J., Šarić B., Bušić M., Knežić Zagorec M.

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilište J. J. Strossmayera u Osijeku, Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam, Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice

**Cilj:**

Prikazati novu kiruršku tehniku ekstrakcije submakularnog perfluorokarbonskog tekućina (PFCL, engl. perfluorocarbon liquid).

**Bolesnici i metode:**

Bolesnik u dobi od 17 godina s posttraumatskom regmatogenom ablacijom mrežnice i proliferativnom vitreoretinopatijom liječen je 23-

gauge pars plana vitrektomijom (PPV) s instilacijom silikonskog ulja. PFCL korišten je kao intraoperativna tamponada. Pregledom fundusa u midrijazi u drugom postoperativnom tjednu uočena su dva subretinalna „mjehurića“ u superotemporalnom dijelu makule uz prilježnu mrežnicu. Dijagnoza zaostalog submakularnog PFCL-

a potvrđena je optičkom koherentnom tomografijom. Tri tjedna nakon inicijalnog zahvata, bez prethodne evakuacije silikonskog ulja, učinjena je ekstrakcija submakularnog PFCL pomoću 25-gauge/38-

gauge subretinalne PolyTip® kanile (MedOne Surgical, Sarasota, USA), MicroDose™ sustava za injektiranje (MedOne Surgical, Sarasota, USA) i automatiziranog sustava za ekstrakciju viskozne tekućine (Constellation® Vision System, Alcon Laboratories, Fort Worth, TX, USA).

**Rezultati:**

Nisu zabilježene ni intraoperativne ni postoperativne komplikacije. Tijekom četiri postoperativna tjedna nije uočena reablacija mrežnice ni značajna makularna atrofija te je indicirana evakuacija silikonskog ulja.

**Zaključak:**

Ova minimalno invazivna kirurška tehnika omogućila je uspješnu ekstrakciju submakularnog PFCL-

a bez prethodne evakuacije silikonskog ulja. Ovakav kirurški pristup omogućuje ranu ekstrakciju submakularnog PFCL-a s ciljem prevencije subfovealne migracije PFCL-

a i posljedične atrofije. Potrebna su daljnja istraživanja kako bi se evaluirala učinkovitost i sigurnost profila ove nove tehnike.

**Title:**

Removal of submacular perfluorocarbon liquid: a novel surgical approach

**Authors:**

Bosnar D., Predović J., Šarić B., Bušić M., Knežić Zagorec M.

**Institution:**

Department of Ophthalmology, University Hospital "Sveti Duh", Zagreb, Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek, Reference center of the Ministry of Health of the Republic of Croatia for Pediatric ophthalmology and Strabismus, Reference center of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To report a new surgical technique for removal of submacular perfluorocarbon liquid (PFCL).

**Patients and methods:**

We present a case of a 17-year-old male patient who underwent 23-gauge pars plana vitrectomy (PPV) with silicone oil (SO) tamponade due to posttraumatic macula-off rhegmatogenous retinal detachment complicated by proliferative vitreoretinopathy. PFCL was used for intraoperative tamponade. Postoperative week 2 dilated fundus examination revealed an attached retina under silicone oil with two subretinal "bubbles" in the superotemporal macula. The diagnosis of retained submacular PFCL was confirmed by optical coherence tomography. Three weeks after the initial surgery, without removing SO, removal of submacular PFCL was performed combining 25-gauge/38-gauge subretinal PolyTip® cannula (MedOne Surgical, Sarasota, USA), MicroDose™ injection kit (MedOne Surgical, Sarasota, USA), and automated viscous fluid extraction system (Constellation® Vision System, Alcon Laboratories, Fort Worth, TX, USA).

**Results:**

Neither intraoperative nor postoperative complications were recorded. During the 4-week follow-up, the retina remained completely attached and no significant macular atrophy was observed. Therefore, SO removal was planned.

**Conclusion:**

Being minimally invasive, this technique allowed successful removal of submacular PFCL without removing SO. This surgical approach provides an opportunity for early removal of submacular PFCL in order to prevent subfoveal PFCL migration and subsequent atrophy. Further studies are needed to evaluate efficacy and safety profile of this novel technique.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Damir

**Ime i prezime / First and Last Name:-Last**

Bosnar



## 21. Kopic Andrijana

**Naslov:**

OKLUZIJA CENTRALNE RETINALNE VENE KAO KOMPLIKACIJA ODONTOGENE CISTE MAKSIARNOG SINUSA – prikaz slučaja

**Autori:**

Kopic, Andrijana; Benašić, Tvrtka; Vinković, Maja; Biuk, Dubravka; Barać, Josip

**Ustanova:**

Klinički bolnički centar Osijek, Klinika za očne bolesti

**Cilj:**

prikazati slučaj 46-

godišnje pacijentice s okluzijom centralne retinalne vene kojoj je tijekom dijagnostičke obrade otkrivena cista maksilarnog sinusa odontogenog podrijetla

**Bolesnici i metode:**

46-

godišnja pacijentica javila se u hitnu ambulantu naše Klinike zbog naglo nastalog mutnog vida de snog oka, te je pregledom fundusa otkrivena okluzija centralne retinalne vene desnog oka. Učinjena je fluoresceinska angiografija, optička koherentna tomografija i preporučena daljnja dijagnostička obrada. Pacijentica je potpuno zdrava, anamnestički navodi da je prije deset godina operirala desni maksilarni sinus, ali ne navodi kliničke smetnje. Tijekom obrade učinjen je CT maksilarnog sinusa koji je otkrio opsežnu cistu odontogenog podrijetla.

**Rezultati:**

Pacijentica je upućena na konzultaciju na Zavod za maksilofacijalnu i oralnu kirurgiju gdje joj je u općoj anesteziji učinjen operativni zahvat odstranjenja ciste koja je bila ispunjena obilnim gnojnim i kazeoznim sadržajem. Kod pacijentice smo predvidjeli terapiju intravitrealnom anti-VEGF terapijom 2 tjedna nakon operativnog zahvata, no na pregledu je utvrđeno blago poboljšanje nalaza, te smo se odlučili za daljnje praćenje bez intravitrealne terapije. Uz česte kontrole, tri mjeseca nakon dolaska, kod pacijentice smo vidjeli potpunu regresiju simptoma i nalaza na angiografiji.

**Zaključak:**

Kod okluzivnih vaskularnih bolesti retine kod mlađih osoba bez rizičnih čimbenika uputno je detaljno uzeti anamnezu, te proširiti dijagnostičku obradu radi mogućih drugih uzroka okluzije kako nam ne bi promakla teže bolesti i stanja.

**Title:**

CENTRAL RETINAL VEIN OCCLUSION AS A COMPLICATION OF ODONTOGENIC CYST OF THE MAXILLARY SINUS - case report

**Authors:**

Kopic, Andrijana; Benašić, Tvrtka; Vinković, Maja; Biuk, Dubravka; Barać, Josip

**Institution:**

University Hospital Centre Osijek, Eye clinic

**Aim:**

to present the case of a 46-year-old female patient with central retinal vein occlusion who was diagnosed with a maxillary sinus cyst of odontogenic origin during the diagnostic workup

**Patients and methods:**

A 46-year-old female patient came to our Clinic because of sudden blurred vision in the right eye, and a fundus examination revealed occlusion of the central retinal vein of the right eye. Fluorescein angiography, optical coherence tomography were performed and further diagnostic workup was recommended. The patient is completely healthy, she reports that she had right maxillary sinus operation ten years ago, but she does not report any clinical problems. During that workup CT of the maxillary sinus was performed and it revealed extensive right sinus odontogenic cyst.

**Results:**

The patient was sent for consultation to the Department of Maxillofacial and Oral Surgery, where she underwent surgery under general anesthesia to remove the cyst, which was filled with abundant purulent and caseous content. In the case of our patient, we planned intravitreal anti-VEGF therapy 2 weeks after the surgery, but the examination revealed a slight improvement in the fundus examination, and we decided to continue monitoring without intravitreal therapy. With frequent check-ups, three months after arrival, we saw a complete regression of the patient's symptoms and findings on angiography.

**Conclusion:**

In the case of occlusive retinal vascular diseases in younger people without risk factors, it is advisable to find out detailed anamnestic data, and expand the diagnostic workup for possible other causes of occlusion so that we do not miss more serious diseases and conditions.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

POSTER SEKCIJA / Poster section

**Titula / Title:**

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Andrijana

**Ime i prezime / First and Last Name:-Last**

Kopić

## 22. Ivan Jerković

**Naslov:**

"AI" chatbot u oftalmologiji - Postaju li liječnici zastarjeli?

**Autori:**

Ivan Jerković, Zoran Vataavuk

**Ustanova:**

KBC Sestre milosrdnice

**Cilj:**

Prikazati prednosti i nedostatke te potencijal umjetne inteligencije u oftalmologiji

**Bolesnici i metode:**

Tijekom istraživanja korišten je chatbot ChatGPT AI

**Rezultati:**

Prednosti aplikacije "AI" chatbota, u ovom slučaju ChatGPT, uključuju od direktnih humanoidnih razgovora sa pacijentom u aktualnom vremenu; konzultacija vezano za najčešće tegobe/upite; edukacije te preporuke za dijagnostiku; potencijal za brzu i točnu obradu podataka. Neke od mana su: ograničenost pisanim algoritmom; pristup bazama podataka online te pristup fiksnim bazama podataka; povremena konfabulacija neprovjerenih podataka tzv. "AI halucinacije"; manjak empatije te osobnog kontakta itd. Predmnijeva se smanjenje troškova po bolesniku, ušteda vremena liječniku i pacijentu te poboljšanje ukupne brige za pacijenta.

**Zaključak:**

Umjetna inteligencija će svakako zauzimati važno mjesto u svakodnevnoj interakciji liječnika i pacijenta. Prednosti ovakve tehnologije su brojne, kao i mane. Potencijal je ograničen trenutnim algoritmom, provjerenom ispravnom povezanošću činjenica, fiksnom te online bazom podataka. Sve ovo navedeno, uz maštu programera te upite korisnika iz kojih "AI" neovisno uči, čini chatbot aplikacije vrijednim oruđem u našoj praksi.

**Title:**

"AI" chatbot in ophthalmology - Are doctors becoming obsolete?

**Authors:**

Ivan Jerković, Zoran Vataavuk

**Institution:**

KBC Sestre milosrdnice

**Aim:**

To demonstrate advantages, flaws and potential of AI in ophthalmology

**Patients and methods:**

During research a chatbot "ChatGPT AI" was used.

**Results:**

The advantages of "AI" chatbot, in this case ChatGPT, include direct humanoid conversation with patient in real time; consultation regarding most frequent symptoms/questions; education of patients and diagnostic recommendation; potential for fast and accurate data processing. Some of the flaws are limited algorithm capacity; database access (online and offline); occasional confabulation of unverified data such as "AI hallucinations"; lack of empathy and person to person contact

t etc. Results to be expected in the near foresight are: reduction of total cost per patient, time saving for patient/doctor leading to overall patient/doctor satisfaction.

**Conclusion:**

For sure artificial intelligence will hold important place in a day to day doctor/patient interaction. Advantages of this kind of technology are numerous, as are its flaws. The potential is limited by current algorithm, verified correct fact ligation, fixed and online database. Combined all that with imagination of programmers, user questions from which AI will learn independently, make the chatbot application a valuable tool in everyday practice.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ivan

**Ime i prezime / First and Last Name:-Last**

Jerković

## 23. Maja Bakula

**Naslov:**

Prednji OCT u dijagnostici punktalnih oštećenja

**Autori:**

Maja Bakula, Iva Bešlić, Lorena Karla Rudež, Jelena Juri Mandić

**Ustanova:**

Klinika za očne bolesti, KBC Zagreb

**Cilj:**

Usporedba OCT karakteristika normalnog lakrimalnog punktuma i punktalnih lezija

**Bolesnici i metode:**

Prospektivna studija u trajanju 2 mjeseca. Prednji OCT i njegove značajke bit će analizirani kod 10 zdravih dobrovoljaca i u 10 pacijenata s bolestima lakrimalnog punktuma

**Rezultati:**

Anatomske parametri koji se mogu proučavati OCT-om uključuju morfologiju punktuma, promjer suznog punktuma i dimenzije i oblik vertikalnog dijela proksimalnog kanalikulusa

**Zaključak:**

Prednji OCT može poslužiti kao objektivna i neinvazivna dijagnostička metoda kod bolesti koje zahvaćaju proksimalni dio odvodnog suznog sustava. Daljnja istraživanja su potrebna radi poboljšanja tehnike snimanja i definiranja standardiziranih vrijednosti

**Title:**

Anterior OCT in diagnosing punctal disorders

**Authors:**

Maja Bakula, Iva Bešlić, Lorena Karla Rudež, Jelena Juri Mandić

**Institution:**

Department of Ophthalmology, University Hospital Centre Zagreb

**Aim:**

Comparison of OCT characteristics of normal lacrimal punctum and punctal lesions

**Patients and methods:**

Prospective study lasting 2 months. Anterior OCT and its features will be analyzed in 10 healthy volunteers and in 10 patients with diseases of the lacrimal punctum

**Results:**

Anatomical parameters that can be studied by OCT include the morphology of the punctum, the diameter of the lacrimal punctum, and the dimensions and shape of the vertical portion of the proximal canaliculus.

**Conclusion:**

Anterior OCT can serve as an objective and non-invasive diagnostic method for diseases affecting the proximal part of the lacrimal drainage system. Further research is needed to improve the imaging technique and to define standardized values

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA ORBITU / Orbit section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Maja

**Ime i prezime / First and Last Name:-Last**

Bakula

## 24. Ognjen Zrinščak

**Naslov:**

Liječenje retrakcije donje vjeđe u Gravesovoj orbitopatiji slobodnim autogenim tarzalnim transplantatom

**Autori:**

Ognjen Zrinščak, Renata Iveković, Ivanka Petric Vicković, Valentina Lacmanović Lončar, Zoran Vatavuk

**Ustanova:**

Klinika za očne bolesti, KBC Sestre milosrdnice

**Cilj:**

Retrakcija donje vjeđe u bolesnika s Gravesovom orbitopatijom, iako od manje funkcionalne važnosti i manje zabrinjavajuća od drugih manifestacija bolesti štitnjače, pridonosi osjećaju nelagodnosti uz dodatnu estetsku komponentu. Uslijed nepotpunog zatvaranja vjeđa dovodi do ekspozicije ožnice i brojnih komplikacija pa s posljedičnom promjenom izgleda uvelike utječe na kvalitetu života bolesnika. Korištenje materijala za povećanje visine retrahirane donje vjeđe i poboljšanje simptoma opisano je u više radova, ali optimalan izbor materijala nije poznat.

**Bolesnici i metode:**

Prikazujemo dva slučaja (četiri vjeđe) korištenja autogenog tarzalnog transplantata kao materijala korištenog za povećanje visine donje vjeđe u liječenju retrakcije uslijed Gravesove orbitopatije.

**Rezultati:**

Registrirano je poboljšanje položaja donje vjeđe sa smanjenjem inferiornog prikaza bjeloočnice i simptomatologije praćeno s minimalnim komplikacijama.

**Zaključak:**

Slobodni autogeni transplantat tarsusa može se smatrati opcijom u izboru materijala za liječenje retrakcije vjeđe u sklopu Gravesove orbitopatije.

**Title:**

Treatment of Lower Eyelid Retraction in Graves' Orbitopathy by Free Tarsus Autogenous Grafting

**Authors:**

Ognjen Zrinščak, Renata Iveković, Ivanka Petric Vicković, Valentina Lacmanović Lončar, Zoran Vatavuk

**Institution:**

University Department of Ophthalmology, Clinical Hospital Center Sestre milosrdnice

**Aim:**

Lower eyelid retraction, commonly seen in Graves' orbitopathy contributes to ocular discomfort and an unsightly appearance. It is of less functional importance and concern than other ocular manifestations of thyroid eye disease. However, it may lead to incomplete lid closure resulting in corneal exposure while patients often suffer from aesthetic impairment making it a combined functional and aesthetic problem.

**Patients and methods:**

We present two cases (four eyelids) of free tarsus autogenous graft (FTG) usage as a spacer in the treatment of lower eyelid retraction due to Graves' orbitopathy.

**Results:**

There was an improvement of lower eyelid position with a decrease of inferior scleral show and symptoms accompanied by minimum complications and no donor site morbidity.

**Conclusion:**

Free tarsus autogenous graft could be considered as an option in choosing a spacer in dealing with lower eyelid retraction in Graves' disease.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA ORBITU / Orbit section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ognjen

**Ime i prezime / First and Last Name:-Last**

Zrinscak



## 25. Leon Marković

**Naslov:**

Popravak rupture makule pune debljine krvnim ugruškom: serija slučajeva

**Autori:**

Leon Marković, Borna Šarić, Vlatka Brzović Šarić, Ana Maria Varošaneć, Mladen Bušić

**Ustanova:**

Klinika za očne bolesti Kliničke bolnice "Sveti Duh", Zagreb

**Cilj:**

Prikaz kirurške tehnike koja koristi autologni krvni ugrušak (ABC) u liječenju ruptur makule pune debljine (FTMH).

**Bolesnici i metode:**

Ova studija je bila intervencijska serija slučajeva. U studiju je uključeno šest očiju šest pacijenata koji su bili podvrgnuti vitrektomiji u kombinaciji s ABC u liječenju FTMH. Praćeni su funkcionalni i anatomske ishodi

**Rezultati:**

Prosječna dob pacijenata bila je  $59,0 \pm 9,9$  godina. Svi slučajevi bili su podvrgnuti standardnoj 23-gauge 3-port, transkonjunktivalnoj mikroincizijskoj vitrektomiji bez šavova s ILM pilingom u kombinaciji s ABC. Zatvaranje makularne rupe postignuto je u svih šest slučajeva. Prosječno vrijeme praćenja bilo je  $8,2 \pm 3,2$  mjeseca.

**Zaključak:**

Upotreba kirurške tehnike koja koristi ABC omogućuje liječenje ruptur makule pune debljine.

**Title:**

Full thickness macular hole repair by blood clot: a case series

**Authors:**

Leon Marković, Borna Šarić, Vlatka Brzović Šarić, Ana Maria Varošaneć, Mladen Bušić

**Institution:**

University Eye Department, University Hospital "Sveti Duh"

**Aim:**

To evaluate the surgical technique using autologous blood clot (ABC) for the management of full thickness macular holes (FTMHs).

**Patients and methods:**

This study was a consecutive, interventional case series. Six eyes of 6 patients who underwent vitrectomy combined with ABC for the treatment of FTMH were reviewed. Functional and anatomic outcomes were evaluated.

**Results:**

The mean age was  $59.0 \pm 9.9$  years. All cases underwent standard 23-gauge three-port, transconjunctival, sutureless microincision vitrectomy with ILM peeling combined with ABC. Closure of the macular hole was achieved in all six cases. The mean follow-up time was  $8.2 \pm 3.2$  months.

**Conclusion:**

This surgical technique using ABC provides an option for the treatment of MHs.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Leon

**Ime i prezime / First and Last Name:-Last**

Marković

## 26. Marin Lovrić Josipa

### **Naslov:**

Izražaj biljega staničnog ciklusa i proliferacije u tumorigenezi i razvoju ljudskog oka

### **Autori:**

Marin Lovrić J; Filipović N; Znaor Lj; Rančić A; Petričević J; Kunac N; Šoljić V; Saraga-Babić M; Vukojević K.

### **Ustanova:**

Klinički bolnički centar Split, Klinika za očne bolesti

### **Cilj:**

Istražiti izražaj Ki67, p19INK4d, MSX1 i 2, PD-L1, pRB, ciklin A, citokeratin-8 i vimentina u 8. tjednu razvoja ljudskog oka, utvrditi njihovo međudjelovanje u razvoju oka i najčešćim tumorima oka, retinoblastomu i melanomu žilnice te razmotriti mogućnosti primjene u liječenju navedenih patoloških stanja.

### **Bolesnici i metode:**

Na Kliničkom zavodu za patologiju, sudsku medicinu i citologiju KBC-a Split te iz Arhivske zbirke Zavoda za Anatomiju, Histologiju i Embriologiju MF Split prikupljeno je pet uzoraka oka u 8. tjednu razvoja, pet uzoraka zdravog ljudskog oka, pet uzoraka retinoblastoma te petnaest uzoraka malignog melanoma žilnice (po pet uzoraka iz svake histološke podskupine: epiteloidnog, vretenastog i miješanog tipa). Uzorke tkiva pregledao je patolog koji je postavio dijagnozu. Korišteni su samo dobro očuvani uzorci tkiva, pripremljeni po standardiziranom protokolu (fiksacija u 4% otopini paraformaldehida u PBS-u, dehidracija etanolom, uklapanje u parafin te izrada rezova debljine 5µm). Rezovi tkiva su se inkubirali s primarnim protutijelima na istraživane čimbenike, a potom je slijedila inkubacija s odgovarajućom kombinacijom sekundarnih protutijela. Analiza rezova obojanih imunohistokemijskom metodom provedena je na mikrofotografijama snimljenim na povećanju ×40 digitalnom kamerom DP71 (Olympus, Tokyo, Japan). Područja interesa bila su mrežnica, žilnica i tumorska područja retinoblastoma i melanoma žilnice. Slike su analizirane ImageJ softwareom (Rasband, W.S., ImageJ, U. S. National Institutes of Health, Bethesda, Maryland, USA, 2018.) te kvantitativno, semikvantitativno i kolokacijskom analizom. Primjenom dvostrukog imunofluorescentnog bojanja analizirali smo koekspresiju tj. istovremenu prisutnost različitih biljega u istoj stanici od strane četiri neovisna istraživača.

### **Rezultati:**

Obrazac ekspresije markera p19, Ki67, MSX1, MSX2, PDL1, pRB i CY CLINA2 kvantitativno je i semikvantitativno analiziran u histološkim presjecima oka u razvoju i postnatalnog ljudskog oka u 8. tjednu, u retinoblastomu i u različitim uvealnim melanoma te istraživano dvostrukom imunofluorescencijom. Imunoreaktivnost p19 karakterizira retinalne i/ili horoidalne stanice u zdravim i tumorskim tkivima: ekspresija je bila niža u postnatalnoj retini nego u retini i retinoblastomu u razvoju, dok je bila visoka u epiteloidnim melanomima. Ekspresija Ki67 bila je visoka u oku u razvoju, retinoblastomu i koroidalnim melanomima. p19- i Ki67-pozitivne stanice lokalizirale su u retini i žilnici razvojnog oka. Ekspresija MSX1 i MSX2 bila je slična u oku u razvoju

i retinoblastomu, dok je nije bilo u oku nakon rođenja. Njihova različita ekspresija bila je evidentna između epiteloidnog i miksoidnog melanoma. MSX1 izražaj značajno se razlikovao između različitih tipova melanoma – najniži izražaj u epiteloidnom melanomu, veći u miksoidnom melanomu, a najveći u vretenastom melanomu. MSX2 izražaj bio je najniži u miksoidnom melanomu. Slično tome, PDL1 je bio odsutan u epiteloidnim melanomima, dok je bio visoko izražen u tkivima u razvoju i tumorskim tkivima. Izražaj pRB i CYCA2 bio je karakterističan za uzorke oka u razvoju i tumora, ali ne i za zdravo postnatalno oko. pRB- pozitivne stanice uočene su u razvojnog oku u retini (osobito u fotoreceptorima) i žilnici, kod retinoblastoma (mrežnica i tumorsko tkivo) te kod raznih tipova melanoma uz izuzetak epiteloidnog melanoma koji nije imao izražaj pRB u žilnici. Promjena u obrascima izražaja CYCA2 sličila je onima pRB u zdravom ljudskom oku te u oku ljudskog embrija starosti 8 tjedana i u retinoblastomu. Izražaj CYCA2 u tumorskom tkivu retinoblastoma bio je značajno veći u usporedbi s retinom istog oka. Također, izražaj CYCA2 je bio značajno veći u usporedbi mrežnice zdravog ljudskog oka i oka u 8. tjednu razvoja. Najveći izražaj CYCA2 nađen je u epiteloidnom i tumorskom tkivu vretenastog melanoma te nešto niži u tumorskom tkivu miksoidnog melanoma. Jak izražaj CYCA2 također je pronađen u retini melanoma, a najveći u miksoidnom melanomu. CK8- pozitivne stanice uočene su u oku u 8. tjednu razvoja u retini i u žilnici i u miksoidnog tipa melanoma; CK8 kod retinoblastoma i kod raznih tipova melanoma (retina, žilnica i tumorsko tkivo) bio je negativan, uz izuzetak miksoidnog melanoma koji je imao izražaj CK8 u žilnici. Vimentin pozitivne stanice vidljive su i u razvojnog oku u retini i žilnici, kod retinoblastoma (preostala retina i tumorsko tkivo) te kod raznih melanoma. Izražaj vimentina nije pronađen u zdravom ljudskom oku u retini i žilnici. Kod retinoblastoma i melanoma najveći izražaj bio je u tumorskom tkivu, dok su preostala retina i žilnica imali sličan izražaj.

#### **Zaključak:**

Uočene razlike u ekspresiji analiziranih markera koreliraju s podrijetlom i stupnjem stanične diferencijacije uzoraka tkiva. Fina ravnoteža izražaja mogla bi igrati ulogu i u razvoju ljudskog oka i u nastanku intraokularnih tumora. Stoga bi razumijevanje njihovog odnosa i međudjelovanja moglo otvoriti nove putove za potencijalne terapijske intervencije i bolje razumijevanje mehanizama koji leže u osnovi plastičnosti razvoja oka i razvoja neoplazmi.

#### **Title:**

Expression of cell cycle and proliferation markers in tumorigenesis and development of the human eye

#### **Authors:**

Marin Lovrić J; Filipović N; Znaor Lj; Rančić A; Petričević J; Kunac N; Šoljić V; Saraga-Babić M; Vukojević K.

#### **Institution:**

University Hospital Split, Ophthalmology department

#### **Aim:**

To investigate the expression of Ki67, p19INK4d, MSX1 and 2, PD-L1, pRB, cyclin A, cytokeratin-8 and vimentin in the 8th week of human eye development, to determine their interaction in eye development and the most common intraocular tumors, retinoblastoma and choroidal melanoma, and to consider possibilities of its application in the treatment of the aforementioned pathological conditions.

#### **Patients and methods:**

At the Clinical Department of Pathology, Forensic Medicine and Cytology of KBC Split and from the Archive Collection of the Department of Anatomy, Histology and Embryology of the MF Split, five eye samples were collected in the 8th week of development, five samples of a healthy human eye, five samples of retinoblastoma and fifteen samples malignant melanoma of the choroid (five samples from each histological subgroup: epithelioid, spindle and mixed type). The tissue samples were examined by a pathologist who made the diagnosis. Only well-preserved tissue samples were used, prepared according to a standardized protocol (fixation in a 4% paraformaldehyde solution in PBS, dehydration with ethanol, embedding in paraffin and making 5 µm thick sections). Tissue sections were incubated with primary antibodies against the investigated factors, followed by incubation with the appropriate combination of secondary antibodies. Analysis of sections stained by the immunohistochemical method was performed on microphotographs taken at ×40 magnification with a DP71 digital camera (Olympus, Tokyo, Japan). The areas of interest were the retina, choroid, and tumor areas of retinoblastoma and choroidal melanoma. Images were analyzed with ImageJ software (Rasband, W.S., ImageJ, U.S. National Institutes of Health, Bethesda, Maryland, USA, 2018) and quantitative, semi-quantitative and collocation analysis. Using double immunofluorescent staining, we analyzed co-expression, ie the simultaneous presence of different markers in the same cell by four independent researchers.

### **Results:**

The expression pattern of markers p19, Ki-67, MSX1, MSX2, PDL1, pRB and CYCLINA2 was quantitatively and semiquantitatively analyzed in histological sections of the developing eye and postnatal human eye at 8 weeks, in retinoblastoma and in various uveal melanomas was investigated by double immunofluorescence. p19 immunoreactivity characterizes retinal and/or choroidal cells in healthy and tumor tissues: expression was lower in the postnatal retina than in developing retina and retinoblastoma, while it was high in epithelioid melanomas. Ki67 expression was high in the developing eye, retinoblastoma, and choroidal melanomas. p19- and Ki67-positive cells co-localized in the retina and choroid of the developing eye. The expression of MSX1 and MSX2 was similar in the developing eye and retinoblastoma, while it was absent in the postnatal eye. Their differential expression was evident between epithelioid and myxoid melanoma. MSX1 expression was significantly different between different types of melanoma – the lowest expression in epithelioid melanoma, higher in myxoid melanoma, and the highest in spindle melanoma. MSX2 expression was lowest in myxoid melanoma. Similarly, PDL1 was absent in epithelioid melanomas, whereas it was highly expressed in developing and tumor tissues. The expression of pRB and CYCA2 was characteristic of the developing eye and tumor samples, but not of the healthy postnatal eye. pRB-positive cells were observed in the developing eye in the retina (especially in the photoreceptors) and choroid, in retinoblastoma (retina and tumor tissue) and in various types of melanoma with the exception of epithelioid melanoma which did not have pRB expression in the choroid. The change in CYCA2 expression patterns resembled those of pRB in the healthy human eye and in the eye of an 8-week-old human embryo and in retinoblastoma. The expression of CYCA2 in retinoblastoma tumor tissue was significantly higher compared to the retina of the same eye. Also, the expression of CYCA2 was significantly higher in the comparison of the retina of a healthy human eye and the eye in the 8th week of development. The highest expression of CYCA2 was found in epithelioid and tum

or tissue of spindle melanoma and slightly lower in tumor tissue of myxoid melanoma. Strong expression of CYCA2 was also found in retinal melanoma, and the highest in myxoid melanoma. CK 8-

positive cells were observed in the eye at the 8th week of development in the retina and in the choroid and in the myxoid type of melanoma; CK8 in retinoblastoma and in various types of melanoma (retina, choroid and tumor tissue) was negative, with the exception of myxoid melanoma, which had CK8 expression in the choroid. Vimentin-positive cells were also detected in the developing eye in the retina and choroid, in retinoblastoma (remaining retina and tumor tissue) and in various melanomas. Vimentin expression was not found in the retina and choroid of the healthy human eye. In retinoblastoma and melanoma, the highest expression was in the tumor tissue, while the remaining retina and choroid had a similar expression.

**Conclusion:**

The observed expression differences of the analyzed markers correlate with the origin and stage of cell differentiation of the tissue samples. The fine balance of expression could play a role in both human eye development and ocular tumorigenesis. Therefore, understanding their relationship and interplay could open new avenues for potential therapeutic interventions and a better understanding of the mechanisms underlying the developmental plasticity of the eye and the development of neoplasms.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA UVEA-u / Uvea section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

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Josipa

**Ime i prezime / First and Last Name:-Last**

Marin Lovrić

## 27. Kristina Lončarić

**Naslov:**

Bilateralni papilitis uzrokovan toxocarom

**Autori:**

Kristina Lončarić, Ines Matoc, Tomislav Gregurić, Mario Sviben, Zoran Vatavuk

**Ustanova:**

Klinički bolnički centar Sestre Milosrdnice

**Cilj:**

Prezentirati slučaj konsekutivnog bilatelarnog papilitisa u pacijenta seropozitivnog na Toxocarum.

**Bolesnici i metode:**

Prikaz slučaja 54.godišnjeg muškarca koji se prezentirao bezbolnim, naglo nastalim brzo progresivnim mutnijim vidom na desno oko. Pregledom očne pozadine ustanovila se edematozna glava vidnog živca, s peripapilarnim krvarenjima i suptilnim bjelkastim perivaskularnim omotačima, bez granulomatoznih lezija. Provedeno je liječenje pulsnom kortikosteroidnom terapijom, no bez poboljšanja, te je zaostala vidna oštrina 0.05. Opsežnom obradom dobiven je nalaz pozitivne serologije na Toksokaru. Nakon 3 mjeseca nastupili su isti simptomi i sličan nalaz na lijevom oku, te je odmah započeto liječenje pulsnom kortikosteroidnom terapijom uz naknadno smanjivanje doze, te istovremeno albendazol 400mg dva puta dnevno tijekom 2 tjedna. U likvoru se također ustanovio pozitivan nalaz serologije na Toksokaru. Tijekom bolničkog liječenja vidna oštrina se pogoršala na 0.4. Postupno je došlo do regresije edema PNO, s parcijalnom atrofijom i vidnom oštrinom 0.7, uz trajne izražene gubitke vidnog polja.

**Rezultati:**

S obzirom na rezultate dijagnostičke obrade, najvjerojatnija dijagnoza je konsekutivni bilatelarni papilitis uzrokovan Toksokarom.

**Zaključak:**

Opisat će se diferencijalno dijagnostičke dvojbe i multidisciplinarni pristup zbrinjavanja rijetke prezentacije infekcije Toksokarom.

**Title:**

Bilateral Toxocara Papillitis

**Authors:**

Kristina Lončarić, Ines Matoc, Tomislav Gregurić, Mario Sviben, Zoran Vatavuk

**Institution:**

Sestre Milosrdnice University Hospital Center

**Aim:**

To report a case of consecutive bilateral toxocara-seropositive papillitis.

**Patients and methods:**

A case report of a 54-year old man who presented first with sudden, painless and fast progressive visual blurring of the right eye. Fundus examination revealed an optic nerve head edema with peripapillary splinter haemorrhages, subtle sheathing of the peripapillary vessels and macular subretinal fluid. No granulomatous lesions were found. The patient received pulse corticosteroid treatment, followed by a taper, but without a good response, as optic atrophy developed and visual acuity remained 0.05.

The results of an extensive work-up revealed a positive Toxocara serology. 3 months later the same symptoms started on the left eye, with similar fundus findings. Immediate treatment was started with pulse corticosteroids, with subsequent taper, along with albendazole 400 mg bid for 2 weeks. Cerebrospinal fluid serology came positive for Toxocara. During hospitalization, visual acuity worsened to 0.4. After the treatment, the inflammation subsided without recurrence during the follow up and the visual acuity improved to 0.7 but with persisting severe visual field defects.

**Results:**

According to the results of the work-up, the most probable diagnosis is consecutive bilateral Toxocara papillitis.

**Conclusion:**

Differential diagnostic challenges and multidisciplinary approach are described for a rare presentation of Toxocara infection.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

**Titula / Title:**

Dr.

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KRISTINA

**Ime i prezime / First and Last Name:-Last**

LONČARIĆ



## 28. Markioli Bruno

**Naslov:**

Pseudoizokromatske tablice po Ishihari kao metoda ispitivanja kolornog vida u djece s posebnim potrebama

**Autori:**

Markioli B, Kabić Š, Vanjaka Rogošić L, Rogošić V

**Ustanova:**

Klinika za očne bolesti, KBC Split, predstojnik prof. dr. sc. Kajo Bućan, dr. med

**Cilj:**

Cilj istraživanja bio je testiranje dviju skupina djece s pseudoizokromatskim tablicama po Ishihari, te utvrditi razliku u obliku težine interpretacije, tj. vremena čitanja tablica u djece s posebnim potrebama i zdrave djece

**Bolesnici i metode:**

U istraživanje je bilo uključeno 56 ispitanika koji su bili podijeljeni u dvije skupine po 28 ispitanika. U kontrolnoj skupini je bilo 14 dječaka i 14 djevojčica, dok je u eksperimentalnoj skupini bilo 16 dječaka i 12 djevojčica. Ustroj istraživanja je presječno istraživanje, a mjesto održavanja: Osnovna škola „Spinut“ i Centar za odgoj i obrazovanje „Slava Raškaj“ u Splitu. Glavna mjera ishoda je vrijeme potrebno za čitanje pseudoizokromatskih tablica po Ishihari u obje ispitivane skupine.

**Rezultati:**

Od svih ploča Ishihara tablice, najviše se griješilo na pločama 7 i 13. Nije dokazana statistički značajna razlika u broju pogrešaka na ploči 7 između zdrave djece i djece s posebnim potrebama ( $p=0.771$ ). Također, nije dokazana statistički značajna razlika u broju pogrešaka na ploči 13 između zdrave djece i djece s posebnim potrebama ( $p=1$ ). Razlika medijana brzine vremena čitanja Ishihara tablica između skupine zdrave djece i djece s posebnim potrebama iznosila je najviše 5 sekundi, a najmanje 1 sekundu. Sve su razlike medijana brzine čitanja ploča Ishihara tablica statistički značajne ( $p<0.001$ ).

**Zaključak:**

Nije bilo statistički značajnih razlika u broju pogrešaka na tablicama između ispitivanih skupina. Djeca s posebnim potrebama trebaju statistički značajno više vremena za čitanje svih ploča Ishihara tablica tako da s njima treba raditi s više strpljenja i biti vođen načelom individualnog pristupa i zvan zadanog vremena. Zaključujemo da su pseudoizokromatske tablice po Ishihari dobra metoda provjere, tj. testiranja kolornog vida u djece s posebnim potrebama.

**Title:**

Ishihara pseudoisochromatic plates as a method of color vision testing in children with special needs

**Authors:**

Markioli B, Kabić Š, Vanjaka Rogošić L, Rogošić V

**Institution:**

Department of ophthalmology, University Hospital Centre Split, head of the clinic: prof. dr. sc. Kajo Bućan, MD

**Aim:**

The aim of the study was testing two groups of children with Ishihara pseudoisochromatic plates that can give difference in the form of hard interpretation, in other words, the possibility of slower plate reading speed for children with special needs as opposed to healthy children

**Patients and methods:**

The study included 56 subjects divided into two groups of 28 subjects. Control group had 14 boys and 14 girls, while the experimental group had 16 boys and 12 girls. This cross-sectional study was conducted at Spinut Elementary School and Slava Raškaj Education and Development Center in Split. The main outcome measurement was the time needed to read/interpret Ishihara pseudoisochromatic plates in both groups tested.

**Results:**

Out of all Ishihara plates, most errors were made on plates 7 and 13. There was no statistically significant difference in the number of errors on plate 7 between healthy children and children with special needs ( $p=0.771$ ). In addition, there was no statistically significant difference in the number of errors on plate 13 between healthy children and children with special needs either ( $p=1$ ). Median difference in the reading speed for Ishihara plates between healthy children and children with special needs was 5 seconds at the most, and 1 second at the minimum. All differences in the Ishihara plates reading speed were statistically significant ( $p<0.001$ )

**Conclusion:**

There were no statistically significant differences in the number of errors on the plates between the two groups of subjects. Children with special needs required statistically significant additional time for reading all Ishihara plates, so when working with children with special needs, one should work with more patience, led by the principle of individualized approach beyond the allocated times. The pseudoisochromatic plates by Ishihara can be a good screening method of checking or testing color vision in children with special needs children.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Bruno

**Ime i prezime / First and Last Name:-Last**

Markioli

## 29. Pavlović Ivan

**Naslov:**

Centralna makularna debljina ili volumen makule u pacijenata na anti-VEGF terapiji – što bolje korelira se vidnom oštrinom?

**Autori:**

Pavlović I., Bračić J., Martinčević D., Bosnar D., Brzović-Šarić V., Šarić B., Predović J.

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb; Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J. J. Strossmayera u Osijeku; Referentni centar Ministarstva zdravstva za dječju oftalmologiju i strabizam; Referentni centar Ministarstva zdravstva za nasljedne distrofije mrežnice.

**Cilj:**

Analiza korelacije centralne makularne debljine (CST) ili makularnog volumena (MV) s vidnom oštrinom (VO) u pacijenata na intravitrealnoj anti-VEGF terapiji.

**Bolesnici i metode:**

Retrospektivna analiza podataka bolesnika oboljelih od neovaskularne senilne makularne degeneracije (nAMD) ili dijabetičkog makularnog edema (DME) liječenih brolocizumabom na Klinici za očne bolesti Kliničke bolnice „Sveti Duh“ od svibnja 2021. do siječnja 2023. godine. Sakupljeni su dob, spol, VO, intraokularni tlak, broj i vrsta ranije primijenjene intravitrealne terapije te CST i MV mjereni spectral domain optičkom koherentnom tomografijom (OCT).

**Rezultati:**

U istraživanje je uključeno 280 bolesnika (prosječna dob 74,8±8,7 godina; 54,3% žene; 339 očiju), od kojih 254 bolesnika s nAMD (303 očiju) i 26 bolesnika s DME (36 očiju). Sveukupno su analizirana 1004 pojedinačna pregleda. MV je pokazao statistički značajnu obrnutu korelaciju s VO ( $\rho = -0,123$ , 95% CI  $-0,183$  do  $-0,061$ ,  $p=0,0001$ ), a CST nije ( $\rho = 0,014$ , 95% CI  $-0,076$  do  $0,048$ ,  $p=0,66$ ), ta je razlika bila statistički značajna ( $p=0,01$ ). Osim MV, statistički značajna korelacija postojala je između VO i dobi ( $\rho = -0,315$ , 95% CI  $-0,370$  do  $-0,258$ ,  $p<0,0001$ ) i VO i broja ranije primijenjenih doza brolocizumaba ( $\rho = 0,078$ , 95% CI  $0,017$  do  $0,14$ ,  $p=0,01$ ).

**Zaključak:**

MV je u značajnoj korelaciji s VO, što ga potencijalno čini važnijim parametrom za praćenje od CST u bolesnika na anti-VEGF terapiji.

**Title:**

Central macular thickness or macular volume in patients undergoing anti-VEGF therapy – which correlates better with visual acuity?

**Authors:**

Pavlović I., Bračić J., Martinčević D., Bosnar D., Brzović-Šarić V., Šarić B., Predović J.

**Institution:**

University Eye Department, University Hospital “Sveti Duh”, Zagreb; Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek; Reference Centre of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Stra

bismus; Reference Centre of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To analyze the correlation between central subfield thickness (CST) or macular volume (MV) and visual acuity (VA) in patients undergoing intravitreal anti-VEGF therapy.

**Patients and methods:**

Retrospective analysis of patients treated with brolocizumab for neovascular age-related macular degeneration (nAMD) or diabetic macular edema (DME) at the University Eye Department, University Hospital "Sveti Duh" between May 2021 and January 2023. Age, gender, VA, intraocular pressure, number and type of previously administered intravitreal therapy, and CST and MV measured by spectral domain optical coherence tomography (OCT) were collected.

**Results:**

Two hundred and eighty patients were included (mean age 74.8±8.7 years; 54.3% female; 339 eyes), 254 patients with nAMD (303 eyes) and 26 with DME (36 eyes). The analysis included 1004 visits in total. MV was statistically significantly invertedly correlated with VA (rho -0.123, 95% CI -0.183 to -0.061, p=0.0001), while CST was not (rho -0.014, 95% CI -0.076 to 0.048, p=0.66), the difference was statistically significant (p=0.01). There was a statistically significant correlation between VA and age (rho -0.315, 95% CI -0.370 to -0.258, p<0.0001), and VA and number of previous brolocizumab applications (rho 0.078, 95% CI 0.017 to 0.14, p=0.01).

**Conclusion:**

MV significantly correlates with VA, which potentially makes it a more important parameter than CST in patients undergoing anti-VEGF therapy.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

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Ivan

**Ime i prezime / First and Last Name:-Last**

Pavlović

### 30. Car Zrinka

**Naslov:**

Adekvatnost upitnika u predviđanju miopije u djece

**Autori:**

Car Z., Škunca Herman J., Malenica Ravlić M., Knežević L., Vatauk Z.

**Ustanova:**

KBC Sestre Milosrdnice

**Cilj:**

Ova analiza literature ima za cilj procijeniti ograničenja i izazove povezane s upotrebom upitnika u predviđanju početka i napredovanja miopije u djece.

**Bolesnici i metode:**

Provedeno je sustavno pretraživanje pomoću baze podataka Pubmed s ključnim riječima: "miopija" "upitnik" "djeca" "škola" dajući 176 rezultata, daljnje pretraživanje pomoću Google Scholar i ključnim riječima "miopija" "upitnik" "djeca" "školarci" "vani" "obrazovanje" "predviđanje" dajući 144 rezultata. Kriteriji za uključivanje bili su glavni čimbenici rizika koji su u snažnoj i uzročno posljedičnoj vezi s kratkovidnošću: vrijeme provedeno vani, tjelesna aktivnost, vrijeme pred ekranom i obrazovanje. Čimbenici isključenja bili su dob manja od 5 i veća od 16 godina, kao i svi čimbenici koji su eliminirani prethodnim studijama poput vrste prehrane ili hipovitaminoza. Čimbenici koji nisu uključeni u ovu analizu bili su rasa, pridržavanje, studije povezane s metodama liječenja ili popratna stanja kao što je suho oko ili socioekonomsko stanje koji nisu bili predmet naše analize.

**Rezultati:**

Analizirane su ukupno 52 studije. Uključivale su 18 prospektivnih kohortnih studija, 28 studija presjeka, jedna pilot studiju i 5 klaster analiza.

Većina studija koristila je vlastite improvizirane verzije upitnika, dok je 11 studija koristilo Sydney Myopia Study upitnik, 2 SZO upitnik o miopiji i 3 Myopia Investigation Study u Taipeiju. Od njih su validirani samo Sydney i SZO upitnici.

Provedena je daljnja analiza načina provedbe upitnika, u samo dva istraživanja upitnike je administrirao anketar. Preostalih 50 studija koristilo je upitnike koje su pojedinačno ispunjavali ili roditelji (33), djeca (10) ili i djeca i roditelji (5).

**Zaključak:**

Korištenje upitnika u predviđanju miopije u predškolske i školske djece ima dosta ograničenja i izazova. Analiza različitih upitnika pokazala je da ne postoji konsenzus i standardizirani jedinstveni upitnik što različite studije čini teškim za usporedbu pa su upitni zaključci o različitim čimbenicima rizika.

**Title:**

The adequacy of questionnaires in predicting myopia in children

**Authors:**

Car Z., Škunca Herman J., Malenica Ravlić M., Knežević L., Vatauk Z.

**Institution:**

KBC Sestre Milosrdnice

**Aim:**

This literature analysis aims to evaluate the limitations and challenges associated with the use of questionnaires in predicting the onset and progress of myopia in children.

**Patients and methods:**

A systematic search was conducted using the Pubmed database with the keywords: "myopia" "questionnaire" "children" "school" giving 176 results, a further search using Google scholar and the keywords "myopia" "questionnaire" "children" "schoolchildren" "outdoor" "education" "predictive" giving 144 results. Inclusion criteria were the major risk factors that are in strong and causal relationship with myopia: time spent outdoors, physical activity, screen time, and education. Exclusion factors were ages under 5 and over 16, as well all factors that were eliminated through previous studies such as type of diet or hypovitaminosis. Factors not included in this analysis were race, compliance, studies related to treatment methods, or concomitant conditions such as dry eye or socioeconomic state which were not the subject of our analysis.

**Results:**

In total 52 studies were analyzed. They were divided into 18 prospective cohort studies, 28 cross-sectional studies, one pilot study and 5 cluster surveys.

Most studies used their own improvised versions of questionnaires, while 11 studies used the Sydney Myopia Study questionnaire, 2 used the WHO myopia questionnaire and 3 used the Myopia Investigation Study in Taipei. Of these only the Sydney and Who questionnaires are validated. Further analysis was done of the method of implementation of the questionnaires, in just two studies the questionnaires were interviewer administered. The remaining 50 studies used questionnaires that were individually completed by either the parents (33), children (10) or both the children and parents (5).

**Conclusion:**

The use of questionnaires in predicting myopia in preschool and school children has plenty of limitations and challenges. Analysis of the various questionnaires showed that there is no consensus and standardized uniform questionnaire which makes the different studies difficult for comparison.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Zrinka

**Ime i prezime / First and Last Name:-Last**

Car

## 31. Patricia Reisz-Majić

**Naslov:**

Dermalni fileri- komplikacije i terapija

**Autori:**

dr.sc. Patricia Reisz-Majić, prof.dr.sc. Dubravka Biuk

**Ustanova:**

Klinika za očne bolesti, KBC Osijek, Medicinski fakultet Osijek, Sveučilište Josipa Juraja Strossmayera, Osijek

**Cilj:**

Ukazati na rastući rizik od razvoja komplikacije aplikacije dermalnih filera i potrebe hitne oftalmološke terapije.

**Bolesnici i metode:**

Rastuća populacija tretiranih pacijenata dermalnim filerima.

**Rezultati:**

Trend porasta broja aplikacija i porasta broja indikacija za aplikaciju dermalnim filerima, ali i razvoj ilegalnog tržišta, povećava rizik za razvoj najozbiljnije komplikacije- vaskularne okluzije.

Kao kliničar -

okuloplastičar koji se bavi i estetskom medicinom, povezujem te dvije grane medicine, a predavanjem želim ukazati na simptome komplikacija i potrebu hitnosti terapije.

**Zaključak:**

Predavanje ima svrhu podizanja svijesti o potrebi spremnosti oftalmologa kako bi pružio hitnu i adekvatnu terapiju pacijentu sa oftalmološkom komplikacijom - sljepoćom, kao posljedicom okluzije arterije centralis retine ili neke njene grane dermalnim filerom.

**Title:**

Dermal fillers- complications and therapy

**Authors:**

Patricia Reisz-Majić, Dubravka Biuk

**Institution:**

Eye Clinic, Faculty of Medicine Josip Juraj Strossmayer of Osijek, University Hospital Centre Osijek, Croatia

**Aim:**

Point out the growing risk of complications from the application of dermal fillers and the need for urgent ophthalmic therapy.

**Patients and methods:**

A growing population of patients treated with dermal fillers.

**Results:**

The trend of an increase in the number of applications and an increase in the number of indications for the application of dermal fillers, as well as the development of the illegal market, increases the risk for the development of the most serious complication - vascular occlusion.

As a clinician - oculoplastic surgeon who also deals with aesthetic medicine, I connect these two b

ranches of medicine, and with the lecture I want to point out the symptoms of complications and the need for urgent therapy.

**Conclusion:**

The purpose of the lecture is to raise awareness of the need for an ophthalmologist to provide urgent and adequate therapy to a patient with an ophthalmological complication - blindness, as a result of occlusion of the central retinal artery or one of its branches with dermal filler.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

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Patricia

**Ime i prezime / First and Last Name:-Last**

Reisz-Majić



## 32. Domagoj Vlašić

**Naslov:**

Korioretinopatija kao posljedica liječenja aripiprazolom: slikovne dijagnostičke značajke

**Autori:**

Domagoj Vlašić, dr. med.; Martin Oroz, dr. med.; Andrea Radolović Bertetić, dr. med.; prim. dr. s c. Mirjana Nasić, dr. med., prof. dr. sc. Nenad Vukojević, dr. med.

**Ustanova:**

OB Dubrovnik, KBC Zagreb

**Cilj:**

Prikaz slučaja korioretinopatije uzrokovane aripiprazolom

**Bolesnici i metode:**

39-

godišnji pacijent s dijagnozom shizofrenije i zamagljenim vidom desnog oka obrađivan je zbog atipične retinopatije.

**Rezultati:**

U ovom istraživanju, pregledan je 39-

godišnji muški pacijent zamagljenim vidom na desnom oku zbog atipične retinopatije. Pacijent uz ima aripiprazol tri godine zbog shizofrenije. Multimodalna slikovna dijagnostika otkrila je promjene u pigmentnom epitelu mrežnice na desnom oku. Nakon što je terapija promijenjena u drugi atipični antipsihotik - risperidon, promjene epitela pigmentnog epitela mrežnice su se spontano povukle nakon 4 tjedna.

**Zaključak:**

Aripiprazol, atipični antipsihotik, lijek je novije generacije koji nije često povezan s promjenama na retini poput tioridazina. Iako se patofiziološki mehanizmi još uvijek ne razumiju u potpunosti, slikovne dijagnostičke metode u ovom slučaju ukazuju da pigmentni epitel mrežnice može biti promijenjen. Stoga bi liječnici trebali biti svjesni potencijalne korioretinalne toksičnosti novih atipičnih antipsihotika.

**Title:**

Comprehensive Assessment of Aripiprazole-Induced Chorioretinopathy through Multimodal Imaging

**Authors:**

Domagoj Vlašić, MD; Martin Oroz, MD; Andrea Radolović Bertetić, MD; Mirjana Nasić, PhD, MD; professor Nenad Vukojević, PhD, MD

**Institution:**

Department of Ophthalmology, Dubrovnik General Hospital; Department of Ophthalmology, Zagreb University Hospital Centre

**Aim:**

This case report aims to document a case of chorioretinopathy induced by aripiprazole.

**Patients and methods:**

A 39-year-old male schizophrenic patient with blurred vision was examined for an atypical retinopathy.

**Results:**

In this case, a 39-year-old male schizophrenic patient with blurred vision in his right eye was examined for an atypical retinopathy. The patient had been taking aripiprazole for 3 years. Multimodal imaging revealed PED (pigmented epithelium detachment) in the right eye. After changing the therapy to another atypical antipsychotic – risperidone - retinal pigment epithelium changes spontaneously resolved after 4 weeks.

**Conclusion:**

Aripiprazole, an atypical antipsychotic, has been introduced more recently than antipsychotics that have been commonly associated with chorioretinopathies, such as thioridazine. Although the pathophysiological mechanisms are not fully understood, imaging in this case suggests that the retinal pigmentary epithelium may be involved. Therefore, clinicians should be aware of the potential chorioretinal toxicity of new atypical antipsychotics.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Domagoj

**Ime i prezime / First and Last Name:-Last**

Vlašić

### 33. Ivan Boras

**Naslov:**

"Subtreshold" makularni laser u liječenju kronične centralne serozne makulopatije: rezultati jednogodišnjeg praćenja

**Autori:**

Ivan Boras

**Ustanova:**

BoVision očna poliklinika, Dubrovnik

**Cilj:**

Analizirati sigurnost i efikasnost "subtreshold" makularnog lasera u liječenju kronične centralne serozne makulopatije.

**Bolesnici i metode:**

Bolesnici s kroničnom centralnom seroznom makulopatijom u trajanju od minimalno 4 mjeseca, liječeni s 577 nm - žutim laserom i praćeni u razdoblju od godine dana.

**Rezultati:**

Nakon liječenja s 577 nm žutim laserom došlo je do značajne redukcije subretinalne tekućine kod pacijenata s kroničnim oblikom centralne serozne makulopatije tijekom praćenja od 12 mjeseci. Kod manjeg broja pacijenata bilo je potrebno ponoviti tretman laserom jer primarni tretman nije doveo do redukcije subretinalnog fluida. Tijekom praćenja nije došlo do neželjenih nuspojava tretmana.

**Zaključak:**

Tretman centralne serozne makulopatije s žutim 577 nm pokazao se sigurnim i efikasnim u smanjenju subretinalnog fluida. Daljnja randomizirana ispitivanja potrebna su kako bi se utvrdila efikasnost, ali i titracijski protokol prije samog lasera.

**Title:**

Subtreshold macular laser in treatment of chronic central retinal maculopathy: One year follow up.

**Authors:**

Ivan Boras

**Institution:**

BoVision eye clinic, Dubrovnik

**Aim:**

To evaluate safety and efficacy of subthreshold laser in treatment of chronic central serous retinopathy

**Patients and methods:**

Patients diagnosed with chronic central serous maculopathy and minimum duration of disease of 4 months, were treated with 577 nm yellow macular laser.

**Results:**

After treatment with a 577 nm yellow laser, there was a significant reduction of subretinal fluid in patients with a chronic form of central serous maculopathy during a 12-month follow-up. In a smaller number of patients, it was necessary to repeat the laser treatment because the p

primary treatment did not lead to a reduction of the subretinal fluid. During the follow-up, there were no unwanted side effects of the treatment

**Conclusion:**

Treatment of central serous maculopathy with yellow 577 nm laser was proved to be safe and effective in reducing subretinal fluid. Further randomized trials are needed to determine the effectiveness, but also the titration protocol before the laser itself.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ivan

**Ime i prezime / First and Last Name:-Last**

Boras

### 34. Mia Zorić Geber

**Naslov:**

Ekspozicija cjevčice kao kasna komplikacija kirurgije glaukomaških drenažnih implantata

**Autori:**

Mia Zorić Geber

**Ustanova:**

Klinika za očne bolesti KBC Sestre milosrdnice

**Cilj:**

...

**Bolesnici i metode:**

...

**Rezultati:**

...

**Zaključak:**

...

**Title:**

Tube exposure as a late complication of Glaucoma Drainage Implant Devices Surgery

**Authors:**

Mia Zorić Geber

**Institution:**

Department of Ophthalmology, Sestre milosrdnice University Hospital Center

**Aim:**

...

**Patients and methods:**

...

**Results:**

...

**Conclusion:**

...

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Prof.dr.sc.

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10000

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**Form Host**

<https://www.hood.com.hr/hood-prijava-radova>

**Entry ID**

1021



## 35. Tea Čaljkušić-Mance

**Naslov:**

DA LI JE HISTOLOŠKI KORIOAMNIONITIS FAKTOR RIZIKA ZA RAZVOJ ROPA

**Autori:**

Tea Čaljkušić-

Mance, Maja Mrak, Erik Lacman, Lana Kostić, Nikolina Jurišić, Sandro Dessardo, Nada Sindičić-Dessardo

**Ustanova:**

Klinički bolnički centar Rijeka, Klinika Fran Mihaljević, Klinički bolnički centar Zagreb

**Cilj:**

Ispitati postoji li uzročno-posljedična veza između histološkog korioamnionitisa i retinopatije prematuriteta (ROP)

**Bolesnici i metode:**

Retrospektivna studija uključila je 262 novorođenčeta rođenih u periodu od 1999-2008 u Kliničkom bolničkom centru u Rijeci. Analiza podataka konvencionalnim statističkim metodama ispitala je povezanost histološkog korioamnionitisa, manje gestacijske dobi, niže porođajne težine, sindroma fetalnog upalnog odgovora (FIRS-a), niže Apgar ocjene u petoj minuti, amnijske infekcije, uporabe surfaktanta i mehaničke ventilacijske potpore i razvoja ROP-a (svih stadija).

**Rezultati:**

Analiza podataka ukazala je na jaku povezanost manje gestacijske dobi, niže porođajne težine, sindroma fetalnog upalnog odgovora (FIRS-a), niže Apgar ocjene u petoj minuti i razvoja ROP-a (svih stadija), za razliku od histološkog korioamnionitisa, amnijske infekcije, uporabe surfaktanta i mehaničke ventilacijske potpore. Path analiza potvrdila je značajan utjecaj histološkog korioamnionitisa i FIRS-a na gestacijsku dob, ali ne i na razvoj ROP-a. Mehanička ventilacija se nije pokazala statistički značajnim rizikofaktorom za razvoj ROP-a u našem istraživanju.

**Zaključak:**

Histološki korioamnionitis ne možemo smatrati rizičnim faktorom za razvoj ROP-a u bilo kojem stadiju.

**Title:**

IS HISTOLOGICAL CHORIOAMNIONITIS A RISK FACTOR FOR THE DEVELOPMENT OF ROP

**Authors:**

Tea Čaljkušić-

Mance, Maja Mrak, Erik Lacman, Lana Kostić, Nikolina Jurišić, Sandro Dessardo, Nada Sindičić-Dessardo

**Institution:**

Clinical Hospital Center Rijeka, Clinic Fran Mihaljević, Clinical Hospital Center Zagreb

**Aim:**

The aim of this study was to investigate if there is a causal relationship between histological chorioamnionitis and retinopathy of prematurity (ROP)

**Patients and methods:**



The retrospective study included 262 infants born between 1999-2008 in the Clinical hospital centre Rijeka. Analysis of the data from our study population with conventional statistical methods investigated is there a strong association between histological chorioamnionitis, shorter gestational age, lower birth weight, Fetal Inflammatory Response Syndrome (FIRS), lower Apgar score at 5 minutes, amniotic infection, surfactant use, mechanical ventilator support and development of ROP (any stage).

**Results:**

Analysis of the data demonstrated that there is a strong association between shorter gestational age, lower birth weight, Fetal Inflammatory Response Syndrome (FIRS), lower Apgar score at 5 minutes, and development of ROP (any stage), which is not the case with the histological chorioamnionitis, amniotic infection, surfactant use, and mechanical ventilator support. Path analysis confirmed that both histological chorioamnionitis and FIRS have a significant effect on gestational age but not on the development of ROP. Mechanical ventilation wasn't a statistically significant risk factor for the development of ROP in our study which was maybe affected by the sample size.

**Conclusion:**

Histological chorioamnionitis cannot be definitively considered a risk factor for development of retinopathy of prematurity in any stage

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tea

**Ime i prezime / First and Last Name:-Last**

Čaljkušić-Mance

## 36. Goñi Guarro Idoia

### **Naslov:**

Kliničke karakteristike i stadij bolesti u trenutku postavljanja dijagnoze glaukoma u bolesnika u Referentnom centru za glaukom u Zagrebu, Hrvatska

### **Autori:**

Goñi Guarro I, Zorić Geber M, Goñi FJ, Vataavuk Z

### **Ustanova:**

KBC Sestre milosrdnice

### **Cilj:**

Istražiti kliničke karakteristike i stadij oštećenja u trenutku postavljanja dijagnoze glaukoma.

### **Bolesnici i metode:**

Retrospektivna konsekutivna studija provedena je na Klinici za očne bolesti KBC Sestre milosrdnice, Referentni centar za glaukom Ministarstva zdravstva Republike Hrvatske. Iz baze podataka temeljem kriterija uputnice za prvi pregled s dijagnozom "glaukom" i "očna hipertenzija" s najmanje dva kontrolna pregleda i kliničkom slikom glaukoma pri prvom pregledu u studiju je uključeno ukupno 58 bolesnika (111 očiju). Analizirane su binarne varijable (Da/Ne), bilježeći prisutnost ili odsutnost vizualizacije optičkog diska (OD), optičke koherentne tomografije (OCT) (Carl Zeiss Meditec Inc, Dublin, California, USA), mjerenja intraokularnog tlaka (IOT), vidnog polja (VP) (Octopus 900 Perimeter, Haag-

Streit USA) te primijenjene terapije, uključujući operaciju glaukoma. Analizirane kvantitativne varijable bile su omjer ekskavacije i promjera diska, c/d omjer (CDR), debljina peripapilarnog sloja retinalnih živčanih vlakana (p-RNFLT) i debljina kompleksa ganglijskih stanica (GCCT) mjerene OCT-om i vrijednosti intraokularnog tlaka (IOT). Sve varijable zabilježene su na temelju prvog posjeta i spitanika za koji su podatci bili dostupni. Dijagnoza glaukoma temeljila se na nalazima koje je zabilježio kliničar te stadijima glaukoma na temelju interpretacije VP-a (pojednostavljena Hodapp-Parrish-

Andersonova klasifikacija) i OCT stupnjevanja uznapredovalosti glaukoma (Paolo Brusini OCT Glaucoma Staging System).

### **Rezultati:**

Za 111 očiju učinjeno je ukupno 105 CDR analiza, 111 mjerenja IOT-a te 95 OCT-a i 87 pregleda VP-a. Od toga je 60 (57,1%) CDR-a, 80 (72%) IOT-a ( $\geq 21$  mmHg), 54 (56,8%) OCT-a i 52 (56,5%) pregleda VP-a doprinijelo dijagnozi glaukoma. Srednja vrijednost RNFLT-a u OCT-u iznosila je 72  $\mu$ m s prosječnim srednjim defektom (MD) od 3,54 dB. Prosječna ekskavacija CDR-a iznosila je 0,6, a najčešća vrijednost bila je 0,7 u 20% slučajeva. GCCT je učinjen u 16 (14,4%) slučajeva sa srednjom vrijednošću od 83,5  $\mu$ m. Prema stadiju oštećenja glaukoma nađenom na VP-u bilo je 10 (11,49%) suspektnih na glaukom; 10 (11,49%) ranih glaukopskih oštećenja; 15 (17,24%) umjerenih glaukopskih oštećenja; 15 (17,24%) uznapredovalih glaukopskih oštećenja. Normalni rezultati zabilježeni su u 20 (22,98%) slučajeva, dok su neuvjerljivi i nepouzdana rezultata nađena u 14 (16%) odnosno 3 (3,45%) slučajeva. U OCT-u je 31 (32,6%) slučaj bio stadij 0; 12 (12,6%) granični slučajevi; 12 (12,6%) slučajeva stadij 1; 13 (13,6%) slučajeva stadij 2; 10 (10,5%) slučajeva stadij 3; 7 (7,4%) slučajeva stadij 4 i 10 (10,5%) slučajeva bili su stadij 5. Propisana lokalna terapija zabilježena je u 90 (81%) očiju. Operacija je planirana

na 24 (22%) oka. Ukupno 16 (14%) dijagnoza temeljilo se na četiri parametra; 35 (31%) na 3 parametra, pri čemu je najčešće korištena kombinacija OD-a, OCT-a i IOT-a (15 (42%) slučajeva)); 25 (22%) na dva parametra, pri čemu su OD i IOT najzastupljeniji u 9 (36%) slučajeva, a 29 (26%) temeljeno je na jednom parametru, pri čemu je IOT bio najčešće korišten u 23 (79%) dijagnoze. U 6 (5%) očiju nije nađeno objektivnih dokaza glaukoma.

#### **Zaključak:**

Najčešće dijagnosticiran tip glaukoma bio je primarni glaukom otvorenog kuta (49%), zatim suspekti glaukom (17%), normotenzivni i pseudoeksfolijativni glaukom (11%). Stadij oštećenja i kod VF i kod OCT-

a pokazao je slične rezultate kod suspektih glaukoma (11,49% i 12,6%) i početnog glaukoma (11,49% i 12,6%). Umjereni glaukom bio je najviše registriran stadij (17,24%; 24,1%). Dijagnoza glaukoma pretežno se temelji na tri parametra: kombinaciji OD-a, OCT-a i IOT-a (najčešće jedan; u 42% slučajeva). Međutim, IOT ostaje glavni odlučujući čimbenik u trenutku dijagnoze glaukoma (79%).

#### **Title:**

Clinical characteristics and disease stage at the time of glaucoma diagnosis in patients at the Glaucoma Referral Center in Zagreb, Croatia.

#### **Authors:**

Goñi Guarro I, Zorić Geber M, Goñi FJ, Vataavuk Z

#### **Institution:**

KBC Sestre milosrdnice

#### **Aim:**

To investigate the clinical characteristics and stage of damage at the time of making the glaucoma diagnosis.

#### **Patients and methods:**

This was a retrospective, consecutive case note review of patients attending the Glaucoma Referral Center of the Ministry of Health of the Republic of Croatia in Zagreb, from December 2020 to February 2023. A total of 111 eyes of 58 patients were included in the study with a diagnosis of "glaucoma" and "ocular hypertension", with at least two follow-

up visits and being considered representative of glaucoma diagnosis at presentation. Binary variables (Yes/No) were taken, recording the presence or absence of optic disc (OD) visualization, intraocular pressure (IOP) measurement, Optic Coherence Tomography (OCT) (Carl Zeiss Meditec Inc, Dublin, California, USA) and Visual Field (VF) (Octopus 900 Perimeter, Haag-Streit USA) performance and therapy received, including glaucoma surgery. Quantitative variables analysed were cup-disc ratio (CDR), peripapillary thickness layer of retinal nerve fibres (p-RNFL) and ganglion cell complex thickness (GCCT) on OCT, and IOP values. All variables were recorded based on the first visit for which data were available. Glaucoma diagnosis was based on the findings noted by the clinician in the clinical notes and glaucoma staging in VF (simplified Hodapp-Parish-

Anderson classification) and OCT Glaucoma Staging System (Paolo Brusini OCT Glaucoma Staging System).

#### **Results:**

Among the 111 eyes, a total of 105 CDR analysis, 111 IOP measurements and 95 OCT and 87 VF examinations were performed. Of those, 60 (57,1%) CDR, 80 (72%) IOP ( $\geq 21$  mmHg), 54 (56,8%) O

CT and 52 (56,5%) VF examinations contributed to glaucoma diagnosis. Mean value of RNFLT in OCT was of 72  $\mu\text{m}$  with an average mean defect (MD) of 3,54 dB. Mean excavation in CDR was 0,6, being the most prevalent value 0.7 in 20 cases (20%). GCCT was performed in 16 (14,4%) cases with a mean value of 83,5  $\mu\text{m}$ . According to the level of damage of glaucoma found in the VF, there were 10 (11,49%) glaucoma suspects; 10 (11,49%) early glaucomatous loss cases; 15 (17,24 %) moderate glaucomatous loss cases; 15 (17,24 %) advanced glaucomatous loss cases. Normal results were reported in 20 (22,98%) cases, while inconclusive and unreliable results were found in 14 (16%) and 3 (3,45%) cases, respectively. In OCT, 31 (32,6%) cases were classified as stage 0; 12 (12,6%) cases were border; 12 (12,6%) cases stage 1; 13 (13,6%) cases stage 2; 10 (10,5%) cases stage 3; 7 (7,4%) cases stage 4 and 10 (10,5%) cases were stage 5. Prescribed local therapy was recorded in 90 (81%) eyes. Surgery was planned in 24 (22%) eyes. A total of 16 (14%) diagnoses were based in four parameters; 35 (31%) in three parameters, being the combination of OD, OCT and IOP the most used one (15 (42%) cases); 25 (22%) in two parameters, being OD and IOP the most prevalent in 9 (36%) cases, and 29 (26%) were based in one parameter, being the IOP the most representative in 23 (79%) diagnoses. In 6 (5%) eyes, there was no objective evidence of glaucoma.

#### **Conclusion:**

The most diagnosed type of glaucoma was simplex primary open angle glaucoma (49%), followed by suspected glaucoma (17%), normotensive and PEX full name glaucoma (11%). The stage of damage in both VF and OCT showed similar results in glaucoma suspects (11,49% and 12,6%) and in initial glaucoma (11,49% and 12,6%), and being moderate glaucoma (17,24 %; 24,1%) the most registered stage moderate glaucoma. The diagnosis of glaucoma is predominantly based on three parameters: the combination of OD, OCT and IOP (the most often one; in 42% of cases). However, IOP remains the main determining factor at the time of glaucoma diagnosis (79%).

#### **Kongres / Congresse:**

22. Kongres HOOD-a

#### **Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

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## 37. Antonela Geber

**Naslov:**

Očni simptomi kao posljedica nedostatka vitamina A nakon barijatrijske operacije

**Autori:**

Antonela Geber<sup>1</sup>, Igor Petriček<sup>1</sup>, Nenad Vukojević<sup>1</sup>, Marko Hawlina<sup>2</sup>

**Ustanova:**

1. Klinika za očne bolesti, Klinički bolnički centar Zagreb, Zagreb, Hrvatska 2. Klinika za očne bolesti, Sveučilišni medicinski centar Ljubljana, Ljubljana, Slovenija

**Cilj:**

Cilj je predstaviti pacijenta s kseroftalmijom (suhoćom spojnice i rožnice) i niktalopijom (noćnom sljepoćom) zbog nedostatka vitamina A (VAD engl. vitamin A deficiency) povezanog s barijatrijskom operacijom (s ciljem redukcije tjelesne mase).

**Bolesnici i metode:**

Ovaj prikaz slučaja opisuje 60-godišnjeg muškarca koji se prezentirao akutnom pojavom niktalopije tri tjedna prije oftalmološkog pregleda u Kliničkom bolničkom centru Zagreb. Pacijent je opisao i simptome suhog oka poput iritacije i pečenja, kao i nedavni gubitak težine od oko 10 kg tijekom posljednjih nekoliko mjeseci. Prije osam godina podvrgnut je djelomičnoj resekciji želuca i tankog crijeva s ciljem redukcije tjelesne mase te je od tada neredovito uzimao oralne vitaminske dodatke prehrani. Pregled pacijenta je uključivao najbolje korigiranu vidnu oštrinu (BCVA engl. best corrected visual acuity), Ishihara test boja, zjenične funkcije, bulbomotoriku, test konfrontacije vidnoga polja i pregled biomikroskopom s procjepnom svjetiljkom. Objektivni znakovi suhoće oka procijenjeni su uz pomoć TBUT testa (engl. tear breakup time - test vremena pucanja suznog filma), fluoresceinske obojenosti rožnice i spojnice prema skali NEI (National Eye Institute), i LIPCOF (engl. lid-parallel conjunctival folds - konjunktivalni nabori paralelni sa kapcima). Daljnji pregled uključivao je Goldmannovu aplanacijsku tonometriju, fundoskopiju, fotofundus, elektoretinografiju (ERG), optičku koherentnu tomografiju (OCT engl. optical coherence tomography), vizualno izazvane potencijale (VEP engl. visual evoked potentials), vidno polje Octopus i Goldmann, te laboratorijsku obradu.

**Rezultati:**

BCVA je bila 1,0 u oba oka. Ishihara test boja, zjenične funkcije, bulbomotorika te test konfrontacije vidnog polja bili su uredni. Pregled procjepnom svjetiljkom pokazao je depozite, nalik na Bitotove pjege, na spojnici duž limbusa rožnice na 3 sata u oba oka. TBUT je iznosio 3/3 sekunde, fluoresceinsko bojenje rožnice 4/2 s difuznim malim točkastim bojenjem, fluoresceinsko bojenje konjunktive 0/0, a LIPCOF 0/0. Intraokularni tlak, fundoskopski pregled i fotofundus bili su uredni. ERG (elektoretinografija) pokazao je ugašene skotopičke odgovore (funkcija štapića) u oba oka. Amplituda fotopičkih odgovora (funkcija čunjića) bila je normalna. OCT je pokazao atenuiranu elipsoidnu zonu (EZ) fotoreceptora. VEP, te vidno polje Octopus i Goldmann nisu u pokazivali znakove koji bi odgovarali VAD-u. Laboratorijski pregled potvrdio je nedostatak vitamina A (41,9 µg/L). Pacijentu je preporučeno korištenje umjetnih suza, te je započeo s oralnim nadomještanjem vitamina A (50 000 IU tijekom

5 dana, 25 000 IU tijekom 10 dana te 50 000 IU jednom tjedno kao održavajuća doza). Ubrzo je pacijent prijavio subjektivno poboljšanje noćnog vida i nestanak simptoma suhog oka. Kontrolni pregled četiri mjeseca kasnije nije pokazao znakove suhog oka (TBUT je bio 5+ sekundi, bojenje rožnice bilo je 0/0, a Bitotove pjege nisu bile prisutne na spojnici), ERG skotopički odgovori bili su uredni, EZ fotoreceptora je bila vidljiva na OCT-u, a razine vitamina A u serumu bile su uredne.

**Zaključak:**

VAD izazvan barijatrijskom operacijom zbog nedostatne suplementacije vitamina A može predstavljati značajni dijagnostički izazov. Istovremeno, može dovesti do ozbiljnih stanja kao što su keratomalacija, perforacija rožnice ili potpuni gubitak vida. Ovaj slučaj naglašava važnost razmatranja VAD-

a kao mogućeg uzroka simptoma suhog oka i noćne sljepoće kod pacijenata koji bili podvrgnuti barijatrijskoj operaciji.

**Title:**

Ocular Symptoms as a Result of Vitamin A Deficiency Following Bariatric Surgery

**Authors:**

Antonela Geber<sup>1</sup>, Igor Petriček<sup>1</sup>, Nenad Vukojević<sup>1</sup>, Marko Hawlina<sup>2</sup>

**Institution:**

1.Department of Ophthalmology, University Hospital Centre Zagreb, Zagreb, Croatia 2.Eye Hospital, University Medical Centre Ljubljana, Ljubljana, Slovenia

**Aim:**

The aim is to present a patient with xerophthalmia (dryness of conjunctiva and cornea) and nyctalopia (night blindness) due to vitamin A deficiency (VAD) associated with bariatric (weight loss) surgery.

**Patients and methods:**

This case report describes a 60-year-old male patient who presented with an acute onset of nyctalopia three weeks prior to the ophthalmological examination at University Hospital Centre Zagreb. The patient reported symptoms of dry eye such as irritation and burning, as well as a recent weight loss of approximately 10 kg over the last few months. The patient had undergone partial gastric and small bowel resection as part of bariatric surgery eight years ago and had been taking oral vitamin supplements irregularly since then. The examination included best corrected visual acuity (BCVA), Ishihara color test, pupil function, ocular motility, confrontation field test, and slit-lamp examination. Objective dry eye signs were assessed by noting TBUT (tear break-up time), fluorescein corneal and conjunctival staining according to the NEI (National Eye Institute) scale, and LIPCOF (lid-parallel conjunctival folds). Further examination included Goldmann applanation tonometry, fundoscopic exam, photo-fundus, full-field electroretinography (ERG), optical coherence tomography (OCT), visual evoked potentials (VEP), Octopus and Goldmann perimetry, and laboratory workup.

**Results:**

The BCVA was 1.0 in each eye. Ishihara color test, pupil function, ocular motility, and confrontation field test were normal. Slit-lamp examination showed conjunctival deposits along the corneal limbus at 3 o'clock in both eyes, which appeared to be Bitot's spots. TBUT was 3/3 seconds, fluorescein corneal staining was 4/2 with diffuse small dotted staining, fluorescein conjunctival staining was 0/0, and LIPCOF was 0/0.

Intraocular pressure, funduscopy examination, and photo-fundus were normal. Full-field ERG showed extinguished scotopic responses (rod function) in both eyes. Amplitudes of photopic response (cone function) were normal. OCT showed attenuation of photoreceptor ellipsoid zone (EZ). VEP, Octopus, and Goldmann perimetry showed no specific signs matching VAD. Laboratory workup confirmed VAD (41.9 µg/L). The patient was advised to use artificial tears, and oral vitamin A supplementation was initiated (50,000 IU for 5 days, 25,000 IU for 10 days, and 50,000 IU once a week as a maintenance dose). Subjective improvement of night vision and disappearance of dry eye symptoms were reported shortly after. Control examination four months later showed no signs of dry eye (TBUT was 5+ seconds, corneal staining was 0/0, and there were no Bitot's spots on conjunctiva), ERG scotopic responses were normal, photoreceptor EZ was visible on OCT, and vitamin A levels in serum were normal.

**Conclusion:**

Bariatric surgery-induced VAD due to inadequate vitamin A supplementation may present a significant diagnostic challenge. At the same time, it can lead to severe conditions such as keratomalacia and corneal perforation or complete loss of vision. This case highlights the importance of considering VAD in the differential diagnosis of post-bariatric surgery patients presenting with xerophthalmia and nyctalopia.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

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Geber

## 38. Ivana Valković Antić

**Naslov:**

Konsenzualna oftalmotonička reakcija nakon trabekulektomije

**Autori:**

Ivana Valković Antić, Tea Čaljkušić Mance

**Ustanova:**

Klinički bolnički centar Rijeka

**Cilj:**

Cilj ove studije je istražiti konsenzualnu oftalmotoničku reakciju u naših pacijenata koji su bili izloženi filtracionoj glaukomoj operaciji. Studije nakon monokularne primjene kapi protiv glaukoma i laserske trabekuloplastike pokazale su pad intraokularnog tlaka (IOT), ali su studije nakon operacije glaukoma pokazale heterogene rezultate.

**Bolesnici i metode:**

Retrospektivno su pregledani podaci 30 bolesnika kod kojih je isti kirurg u Kliničkom bolničkom centru Rijeka učinio operativni zahvat trabekulektomije s mitomicinom C. Kriteriji za uključivanje u ovu studiju bili su uspješna operacija sa smanjenjem IOT-a na operiranom oku. Niti jedan bolesnik nije bio podvrgnut sustavnoj hipotenzivnoj terapiji. U ovih bolesnika kontralateralne oči su imale topikalnu hipotenzivnu terapiju ili su bili bez topikalne terapije. IOT u oba oka zabilježen je 1 dan prije operacije, kao i 1 dan, 1 mjesec, 6 mjeseci i 12 mjeseci nakon operacije.

**Rezultati:**

Nakon trabekulektomije, naši su pacijenti pokazali pad IOT-a drugog oka u ranom postoperativnom razdoblju i nakon 6, ali ne i nakon 12 mjeseci. Pacijenti koji su imali viši IOT na drugom oku, zahtijevali su raniju trabekulektomiju, unutar 6 mjeseci. Pacijenti koji su u konačnici zahtijevali trabekulektomiju drugog oka imali su niži IOT tijekom praćenja nakon operativnog postupaka.

**Zaključak:**

Postoperativno smanjenje IOT-

a u oku može se objasniti boljom suradljivošću pacijenata nakon operacije, kada pacijent postaje savjesniji u uzimanju lijekova. IOT u kontralateralnom oku pokazuje da postoji značajno smanjenje bez obzira na to je li pacijent bio na topikalnim očnim hipotenzivima ili ne u ranom postoperativnom razdoblju. Nakon operacije glaukoma treba pomno pratiti IOT drugog oka kako se ne bi privedjelo povećanje IOT-a, uglavnom kod glaukopskih očiju pod topičkom glaukopskom terapijom.

**Title:**

Consensual ophthalmotonic reaction following trabeculectomy

**Authors:**

Ivana Valković Antić, Tea Čaljkušić Mance

**Institution:**

Clinical hospital center Rijeka

**Aim:**



The purpose of this study is to investigate the consensual ophthalmotonic reaction in our patients who have been exposed to monocular filtration surgery. Studies following monocular application of glaucoma drops and laser trabeculoplasty showed a drop in fellow eye intraocular pressure but studies following monocular surgery showed heterogeneous results.

**Patients and methods:**

Medical charts of 30 patients who underwent trabeculectomy with mitomycin C performed by the same surgeon at the Clinical hospital center Rijeka were retrospectively reviewed. Inclusion criteria for this study were successful filtration surgery with IOP reduction in the operated eye. No patients were undergoing systemic hypotensive therapy. In these patients the contralateral eyes had topical hypotensive therapy or no therapy at all. The IOP in each fellow eye was recorded 1 day before surgery as well as 1 day, 1 month, 6 months and 12 months after surgery.

**Results:**

Following monocular penetrating filtration surgery, our patients demonstrated a fellow eye IOP drop in the early postoperative period and after 6 but not after 12 months. Patients who had higher fellow eye IOP, required earlier trabeculectomy, within 6 months. Patients who ultimately required fellow eye trabeculectomy had lower IOP during follow-up after these procedures.

**Conclusion:**

Postoperative reduction of IOP in fellow eye can be explained by a better compliance of patients after intervention, when the patient becomes more conscientious about taking medications. IOP in the contralateral eye shows that there is a significant reduction irrespective of whether the patient was on topical ocular hypotensive medications or not in early postoperative period. After filtration surgery, IOP of the fellow eye should be monitored closely not to overlook IOP rise, mostly glaucomatous eye under medical therapy.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

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Valković Antić

## 39. Tadić Ivana

**Naslov:**

Pseudo-Foster-Kennedy sindrom: da ili ne? Prikaz slučaja.

**Autori:**

Tadić I, Olujić I, Rađa F, Znaor Lj, Bućan K.

**Ustanova:**

Klinika za očne bolesti, KBC Split.

**Cilj:**

Prikazati slučaj pacijentice s unilateralnim edemom papile i kontralateralnom optičkom atrofijom, opisati njegove kliničke posebnosti te dijagnostičke poteškoće.

**Bolesnici i metode:**

godine zbog edema papile vidnog živca i eksudata u makuli desnog oka te atrofija glave vidnog živa drugog oka. Zbog zamagljenog vida na desnom oku i optičkom koherentnom tomografijom u erificiranog subretinalnog fluida je prethodnih 15 dana konzervativno liječena u vanjskoj ustanovi pod dijagnozom centralne serozne retinopatije (CSR). Učinjena je opširna oftalmološka obrada koja je uključivala optičku koherentnu tomografiju (OCT), OCT angiografiju, fluoresceinsku angiografiju (FA), kompjutoriziranu perimeretriju i vidne evocirane potencijale (VEP). Također i slikovna radiološka obrada: kompjuterizirana tomografija mozga i orbita (CT), magnetska rezonanca mozga i orbita (MRI) te MRI angiografija krvnih žila mozga. Potom i imunološka obrada, testiranje na virusne hepatitis i HIV te serološka testiranja za infektivne bolesti. U dogovoru s specijalistom medicinske genetike poslani su uzorci za sekvencioniranje i delecijско duplikacijsku analizu gena unutar neurooftalmološkog panela u laboratorij u Finskoj.

**Rezultati:**

Oftalmološkom obradom potvrđen je klinički nalaz fundoskopije oba oka. Radiološkim slikovnim metodama isključeni su patološki procesi koji bi se mogli povezati s oftalmološkim simptomima i znakovima. Opširnom serološkom obradom infektolozi su isključili infektivnu prirodu bolesti. Genetskom analizom potvrđeno je kako je pacijentica heterozigot za varijantu nesigurnog značenja ACO2. Varijante ACO2 mogu uzorkovati autosomno dominantno ili recesivno nasljednu optičku atrofiju ali se varijanta kod pacijentice ne može povezati s njenim fenotipom.

**Zaključak:**

Pseudo-Foster-

Kennedy sindrom opisuje se kao unilateralni edem optičkog diska s kontralateralnom optičkom atrofijom uz izostanak intrakranijalne mase koja uzrokuje kompresiju optičkog živca. Opširnom dijagnostičkom obradom nije utvrđen etiološki uzrok kliničke slike kod pacijentice. Pacijentica je uključena u redovito oftalmološko i neurološko praćenje.

**Title:**

Is it Pseudo-Foster-Kennedy syndrome? A case report.

**Authors:**

Tadić I, Olujić I, Rađa F, Znaor Lj, Bućan K.

**Institution:**

Department of Ophthalmology, University hospital center Split.

**Aim:**

To present a case of a patient with unilateral papilledema and contralateral optic atrophy, describe its clinical features and diagnostic difficulties.

**Patients and methods:**

A 29-year-old female patient was admitted for hospital treatment in October 2022 due to papilledema and exudate in the macula of the right eye and atrophy of the optic nerve head of the other eye. Due to blurred vision in the right eye and subretinal fluid verified by optical coherence tomography she was treated conservatively for the previous 15 days in an external institution with the diagnosis of central serous retinopathy (CSR). An extensive ophthalmological workup was performed including optical coherence tomography (OCT), OCT angiography, fluorescein angiography (FA), computerized perimetry and visual evoked potentials (VEP). Radiology diagnostic imaging included computerized tomography of the brain and orbit (CT), magnetic resonance imaging of the brain and orbit (MRI) and MRI angiography of blood vessels of the brain. Immunological tests, testing for viral hepatitis and HIV and serologic tests were done. In agreement with a specialist in medical genetics samples were sent for sequencing and deletion duplication analysis of genes within the neuro-ophthalmology panel in a laboratory in Finland.

**Results:**

Ophthalmological tests confirmed the fundoscopic findings. Radiological imaging tests did not find pathological processes that could be associated with ophthalmological symptoms and signs. Through extensive serological tests infectologists ruled out the infectious nature of the disease. Genetic analysis confirmed that the patient is heterozygous for a variant of uncertain significance. Variants in ACO2 have been associated with autosomal dominant or recessive non-syndromic optic atrophy but this variant is not expected to be related to the patient's phenotype.

**Conclusion:**

Pseudo-Foster-Kennedy syndrome is described as unilateral optic disc edema with contralateral optic atrophy in the absence of an intracranial mass causing compression of the optic nerve. Extensive diagnostic workup did not establish the etiological cause of the patient's condition. The patient is included in regular ophthalmological and neurological monitoring.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

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Ivana

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Tadić

## 40. Rađa Filip

**Naslov:**

Ispitivanje vidnog polja: Bulbicam u odnosu na Octopus perimetar

**Autori:**

Rađa F, Dukić J, Znaor Lj

**Ustanova:**

Klinika za očne bolesti, KBC Split

**Cilj:**

Utvrđiti učinkovitost Bulbicam-a u odnosu na Octopus perimetar u ispitivanju vidnoga polja

**Bolesnici i metode:**

Uzorak za istraživanje su pacijenti sa sumnjom na glaukom i oni s dijagnosticiranim glaukomom bez prisutnosti drugih očnih bolesti. Istraživanje je provedeno u KBC-u u Split između 1.3. i 14.4.2022. Svaki ispitanik podvrgnut je standardnom ispitivanju vidnog polja korištenjem Octopus perimetra (Octopus model 900; Haag-Streit, Koniz, Švicarska) i testiranju vidnog polja korištenjem Bulbicama (Bulbicam model 1.0; BulbiTech, Trondheim, Norveška), a oba je proveo isti kliničar.

**Rezultati:**

Podaci će biti analizirani kod svih pacijenata upućenih na testiranje vidnoga polja sa sumnjom na glaukom ili s dijagnosticiranim glaukomom bez prisutnosti drugih očnih bolesti u razdoblju od 1.3. do 14.4.2022.

Podaci će biti statistički obrađeni i prikazani putem Excel tablice.

**Zaključak:**

Rana detekcija ispada u vidnome polju i detekcija progresije istih jedan je od ključnih čimbenika u liječenju glaukoma.

Stoga kraće trajanje pretrage i eventualna veća dostupnost zbog same veličine uređaja su od iznimne koristi u svakodnevnoj kliničkoj praksi.

**Title:**

Visual field testing: Bulbicam versus Octopus perimeter

**Authors:**

Rađa F, Dukić J, Znaor Lj

**Institution:**

Ophthalmology clinic, University Hospital Center Split

**Aim:**

To determine the effectiveness of Bulbicam in relation to the Octopus perimeter in visual field testing

**Patients and methods:**

The research sample were patients with suspected glaucoma and those with diagnosed glaucoma without the presence of other eye diseases. The research was conducted in University Hospital Center Split in the period from 1.3. to 14.4.2022. Each subject underwent standard visual field testing using an Octopus perimeter (Octopus model 900; Haag-Streit, Koniz, Switzerland) and visual field testing using Bulbicam (Bulbicam model 1.0; BulbiTech, Trondheim, Norway). Both performed by the same clinician.

**Results:**

The data will be analyzed for all patients referred for visual field testing with suspected glaucoma or with diagnosed glaucoma without the presence of other eye diseases in the period from 1.3. to 14.4.2022.

The data will be statistically analyzed and presented using an Excel table.

**Conclusion:**

Early detection of defects in the visual field and detection of their progression is one of the key factors in the treatment of glaucoma.

Therefore, the shorter duration of the examination and possible greater availability due to the sheer size of the device are extremely useful in everyday clinical practice.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Filip

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Rađa

## 41. Maja Mrak

**Naslov:**

PRIKAZ SLUČAJA: RETROBULBARNI KAPILARNI HEMANGIOM KOD EKSTREMNOG NEDONOŠČETA

**Autori:**

Maja Mrak, Erik Lacman, Zvezdana Alpeza-Dunato, Vedran Markušić, Renata Gržetić, Tea Čaljkušić-Mance

**Ustanova:**

Klinički bolnički centar Rijeka

**Cilj:**

Prikazati slučaj unilateralnog retrobulbarnog kapilarnog hemangioma kod ekstremnog prematurusa te ishod medikamentoznog liječenja propranololom

**Bolesnici i metode:**

Prikaz slučaja: Žensko nedonošče rođeno u 28. tjednu podvrgnuto je postupku probira na ROP. U tijeku pregleda primijećen je lijevi periorbitalni edem i izražena proptoz počevši od 49. dana života, korigirane gestacijske dobi 35 6/7 tjedana. Nisu zabilježene površinske promjene na koži. Oftalmološki pregled pokazao je promjene na očnoj pozadini koje odgovaraju ROP-u I. Orbitalni ultrazvuk pokazao je zadebljane mišiće, osobito musculus rectus lat. MRI, 52. dana života pokazuje u području lateralne polovice lijeve orbite kao i u području krova orbite, neposredno uz m.rectus lateralis, m.rectus superior i m. obliquus superior formaciju u arealu dužine 22 mm te debljine do 7 mm koja značajno potiskuje m.rectus lateralis prema medijalno (moguća infiltracija, nejasne granice) te comprimira m.rectus superior s mjestimičnim znakovima intrakonalnog širenja u području posteriornog dijela te je blaže i kompresivnim efektom pomaknut optički živac koji je urednog intenziteta signala. Opisana formacija je visokog signala u T2 mjernoj slici s intenzivnom postkontrastnom imbibicijom i mjestimičnim zonama flow voida, a govorit će u prilog hemangioma. Ventralno se širi prema gornjoj vjeđi koja pokazuje blaže edematozne promjene. Gornja oftalmička vena je naznačenija, blaže dilatirana i tortuotičnog tijeka. Kroz gornju orbitalnu fisuru vidi se ekstenzija hemangioma u područje regije kavernoznog sinusa koji je uklopljen u hemangiom. Proteže se u arealu dužine 13 mm te debljine do 6 mm bez vidljive komunikacije. Propranolol 1 mg/kg/d započet je na 53. dana života, a zatim 56. dana povećan na 2 mg/kg/d podijeljeno u 3 doze. Ponovljena MRI pokazala je djelomičnu involuciju kapilarnog hemangioma u skladu s odgovorom na medicinsku terapiju. Od tada je nastavljena terapija propranololom 2x5,5 mg per os/dnevno (4,5 mjeseca).

**Rezultati:**

Četveromjesečno liječenje propranololom značajno je reduciralo edem vjeđa, proptozu i zadebljanje očnih mišića.

**Zaključak:**

Liječenje retrobulbarnog kapilarnog hemangioma kod ekstremnog nedonoščeta propranololom rezultira povoljnim ishodom.

**Title:**

CASE REPORT: UNILATERAL RETROBULBAR CAPILLARY HEMANGIOMA IN EXTREME PREMATURE INFANT

**Authors:**

Maja Mrak, Erik Lacman, Zvezdana Alpeza-Dunato, Vedran Markušić, Renata Gržetić, Tea Čaljkušić-Mance

**Institution:**

Clinical Hospital Center Rijeka

**Aim:**

Present a case of unilateral retrobulbar capillary hemangioma in extreme premature infant and the outcome of propranolol treatment

**Patients and methods:**

Case report: A female premature infant born at 28 weeks underwent a ROP screening procedure. She was noted to have increasing left periorbital edema and proptosis starting at day of life (DOL) 49, corrected gestational age 35 6/7 weeks. No superficial skin changes were noted. Ophthalmologic examination showed ROP I changes. Orbital ultrasound showed thickened muscles, especially musculus rectus lat. MRI at DOL 52 showed in the area of the lateral half of the left orbit as well as in the roof area of the orbit, immediately adjacent to m.rectus lat., m.rectus sup. and m.obliquus sup., a formation of 22 mm long and up to 7 mm thick can be seen, which significantly pushes the m.rectus lat. towards the medial (possible infiltration, vague boundaries) and impresses m.rectus sup. with interspersed signs of intraconal expansion in the posterior part area and is shifted by a milder and compressive effect the optic nerve. The described formation is high signal in T2 measuring picture with intense postcontrast enhancement and interspersed flow void zones and will speak in favor of hemangiomas. Ventral spreads to the upper eyelid, which shows milder edematous changes. The upper ophthalmic vein is indicated, mildly dilated and tortuous course. Through the upper orbital fissure, an extension of the hemangioma into the region of the cavernous sinus is seen, which is embedded in the hemangioma. It extends in a range of 13 mm long and up to 6 mm thick with no visible communication. Propranolol 1 mg/kg/d was started on DOL 53 and was increased to 2 mg/kg/d divided three times a day on day of life 56. Repeat MRI showed partial interval involution of the suspected left orbital capillary hemangioma consistent with response to medical therapy. She was continued on propranolol 2x5,5 mg per os since then (4,5 months).

**Results:**

Four-month treatment with propranolol significantly reduced eyelid edema, proptosis and thickening of the eye muscles of the left eye.

**Conclusion:**

Retrobulbar capillary hemangioma in extreme premature infant which was treated with intensive propranolol therapy resulting in a favorable outcome.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Maja

**Ime i prezime / First and Last Name:-Last**  
Mrak



## 42. Tamara Paravić

**Naslov:**

Prikaz slučaja – Gigantski papilarni keratokonjunktivitis

**Autori:**

Tamara Paravić, dr.med. specijalizant oftalmologije i optometrije ; Petra Grubešić, dr.med. specijalist oftalmologije i optometrije ; Renata Gržetić – Lenac, dr.med. oftalmolog, subspecijalist prednjeg segmenta oka ; Damir Vukušić, dr.med. oftalmolog, subspecijalist prednjeg segmenta oka ; Prof.dr.sc. Tea Čaljkusić – Mance, dr.med. oftalmolog, subspecijalist stražnjeg segmenta oka

**Ustanova:**

KBC Rijeka

**Cilj:**

Prikaz slučaja gigantskog papilarnog keratokonjunktivitisa i važnost pravovremenog prepoznavanja i postavljanja dijagnoze zbog adekvatnog liječenja i prevencije mogućih komplikacija. U prikazu slučaja riječ je o inicijalno neprepoznatom atopijskom keratokonjunktivitisu koji je pridonio smetnjama u vidu izraženog podražaja bulbarne spojnice, papilarne reakcije tarzalne spojnice kao i promjenama na rožnici te recidivirajućim HSV infekcijama oka kod glaukomske pacijentice. S obzirom na navedene tegobe kod pacijentice je u više navrata mijenjana glaukomska terapija radi mišljenja o alergijskoj reakciji na nju, a u sklopu čije je kliničke slike dijagnoza ostala neprepoznata.

**Bolesnici i metode:**

Žena, 1954. godište. Pri ambulantnoj obradi pacijentice učinjen je opći oftalmološki pregled, koristila se kamera prednjeg segmenta, učinjena je pahimetrija i spekularna mikroskopija. U sklopu obrade gigantskog papilarnog keratokonjunktivitisa pacijentici je uzeta detaljna anamneza, mikrobiološki i laboratorijski je obrađena te je upućena na pregled dermatologu i imunologu.

**Rezultati:**

S obzirom na kliničku sliku gigantskih papila tarzalne spojnice i panusa rožnice s neovaskularizacijama, a uz sterilan nalaz brisa spojnice i poboljšanja nalaza na kortikosteroidnu i antihistaminičnu terapiju postavljena je dijagnoza gigantskog papilarnog keratokonjunktivitisa. Sukladno tome određena je terapija uz redovite kontrole intraokularnog tlaka. Kod pacijentice se uz terapiju lokalnim i oralnim antihistaminicima supratarzalno aplicirao triamcinolon, a uz dodanu dijagnozu teškog oblika suhog oka su se u terapiju uvele ciklosporinske kapi. Po primjeni terapije dolazi do potpune regresije tegoba, poboljšanja kliničke slike i vidne oštine.

**Zaključak:**

Ostane li neprepoznat i neadekvatno liječen, gigantski papilarni keratokonjunktivitis može uzrokovati trajno oštećenje vida. Pacijenti zahtijevaju dugotrajno i pomno praćenje oftalmologa radi prevencije komplikacija same bolesti i mogućih nuspojava koje nastaju radi dugotrajnog korištenja terapije. Ukoliko se liječi pravilno i pravovremeno u većem broju slučajeva je reverzibilno stanje.

**Title:**

Case report: Giant papillary keratoconjunctivitis

**Authors:**

Tamara Paravić, MD, resident of ophthalmology and optometry ; Petra Grubešić, MD, ophthalmologist and optometrist specialist ; Renata Gržetić – Lenac, MD, ophthalmologist, anterior segment specialist ; Damir Vukušić - MD, ophthalmologist, anterior segment specialist ; Prof.dr.sc. Tea Čaljkušić - Mance, MD ophthalmologist, retina specialist

**Institution:**

Clinical Hospital Center Rijeka

**Aim:**

A case report of Giant Papillary Keratoconjunctivitis and the importance of on-time identification and differential diagnosis for adequate treatment and prevention of possible complications. In this case the focus is on an initially non-recognized atopic keratoconjunctivitis which caused disturbances; pronounced stimulus of the bulbar conjunctiva and a papillary reaction of the tarsal conjunctiva as well as changes in the cornea and recurrent HSV infections of the eye on a 59-year-old female patient with glaucoma. Due to all mentioned issues and an opinion that an allergic reaction is present, there have been several changes regarding previously given local, glaucoma therapy. This opinion fitted the diagnosis and remained unrecognized.

**Patients and methods:**

Woman, born 1954. During the initial workup of the patient, main ophthalmological exam was carried out with the use of anterior segment camera, pachymetry and specular microscopy was done. Combined with GPC workup a detailed medical history of patient was taken which included microbiological and laboratory analysis. Also, the patient was sent for dermatological and immunological review.

**Results:**

Because of a sterile swab of the conjunctiva and an improved clinical picture after introducing a corticosteroid and antihistamine therapy, GPC diagnosis was established due to a clinical picture of giant papillae on the tarsal conjunctiva and pannus of the cornea with neovascularization. In accordance with the diagnosis a therapy and regular control of intraocular pressure was prescribed. In addition to local and oral antihistamines, supratarsal injection of triamcinolone was applied and with a sub-diagnosis of a dry eye ciclosporin eye drops were added to the therapy. After application of mentioned therapy, a full regress of symptomatology, improvement of the clinical picture and visual acuity.

**Conclusion:**

If remained unrecognized and untreated, giant papillary keratoconjunctivitis can lead to vision loss. Patients with giant papillary keratoconjunctivitis require close, long term follow up examinations for possible development of vision threatening complications and medication side effects. If treated on-time and in the right way in many cases it is a reversible condition.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

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Tamara

**Ime i prezime / First and Last Name:-Last**

Paravić

### 43. Dean Šarić

**Naslov:**

Laserska refrakcijska kirurgija nakon penetrantne keratoplastike

**Autori:**

D.Šarić, D. Grgić, N. Zrakić, B. Mihaljević, S. Ramić, M. Bušić

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica "Sveti Duh" Zagreb, Poliklinika Optical Express

**Cilj:**

Procijeniti učinkovitost refrakcijske kirurgije (fotorefraktivne keratektomije (PRK)) u ispravljanju refrakcijske pogreške kod očiju koje su bile podvrgnute prethodnoj penetrantnoj keratoplastici (PK).

**Bolesnici i metode:**

21 keratorefraktivni postupak na 21 oku kod 21 pacijenta učinjen je između 2012. i 2022. Svaki je pacijent nakon penetrantne keratoplastike imao miopiju i astigmatizam. Izmjerena je keratometrijska vrijednost, manifestna refrakcija, najbolje korigirana vidna oštrina, nekorigirana vidna oštrina te komplikacije prije i nakon refrakcijskog zahvata.

**Rezultati:**

Proveden je ukupno 21 postupak fotorefraktivne keratektomije na 21 oku kod 21 pacijenta. Post PK preoperativni manifestni refrakcijski sferni ekvivalent i cilindrična pogreška bili su  $-5,12 \pm 4,21$  dioptrije odnosno  $5,22 \pm 2,56$  D. PRK postoperativni manifestni refrakcijski sferni ekvivalent i cilindrična pogreška bili su  $-1,61 \pm 2,24$  D odnosno  $2,22 \pm 1,41$  D. Došlo je do poboljšanja nekorigirane vidne oštrine za 2 reda ili više kod svih pacijenata. Zabilježena je jedna epizoda akutnog odbacivanja presatka koja je riješena lokalnim i topikalnim kortikosteroidima.

**Zaključak:**

PRK je učinkovit postupak u smanjenju kirurški izazvane refrakcijske pogreške nakon penetrantne transplantacije rožnice kod većine pacijenata u ovoj seriji slučajeva. Smanjenje astigmatizma može omogućiti bolje postavljanje kontaktnih leća ili naočala za postizanje najbolje ispravljene binokularne vidne oštrine.

**Title:**

Laser refractive surgery after penetrating keratoplasty

**Authors:**

D.Šarić, D. Grgić, N. Zrakić, B. Mihaljević, S. Ramić, M. Bušić

**Institution:**

Eye Clinic, Clinical hospital "Sveti Duh" Zagreb, Polyclinic Optical Express

**Aim:**

To evaluate the efficacy of photorefractive keratectomy (PRK) excimer laser refractive surgery in correcting refractive error in eyes that have undergone previous penetrating keratoplasty (PK).

**Patients and methods:**

21 keratorefractive procedures on 21 eyes from 21 patients were evaluated between 2012 and 2022. Each patient presented a previous history of a PK with subsequent postoperative myopia and astigmatism. Keratometric value, manifest refraction, best-corrected visual acuity, uncorrected visual acuity, and complications were evaluated before and after PRK.

**Results:**

There were a total of 21 photorefractive keratectomy (PRK) procedures performed on 21 eyes in 21 patients. The post PK preoperative manifest refractive spherical equivalent and cylindrical error were  $-5.12 \pm 4.21$  diopter and  $5.22 \pm 2.56$  D, respectively. The PRK postoperative manifest refractive spherical equivalent and cylindrical error were  $-1.61 \pm 2.24$  D and  $2.22 \pm 1.41$  D, respectively. There was a 2-line or greater improvement of uncorrected visual acuity in all patients. There was one episode of acute graft rejection. It was resolved with local and topical corticosteroids.

**Conclusion:**

PRK is effective procedure in reducing surgically induced refractive error after penetrating corneal transplantation in most patients in this case series. The reduction of astigmatism may allow improved contact lens or spectacle fitting to achieve best-corrected binocular visual acuity.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Dean

**Ime i prezime / First and Last Name:-Last**

Šarić

#### 44. Iveković Renata

**Naslov:**

Higijena vjeđa u tehnološki razvijenom svijetu

**Autori:**

Iveković R, Zrinščak O, Petric Vicković I, Lacmanović Lončar V, Vatavuk Z

**Ustanova:**

Klinika za očne bolesti KBC Sestre milosrdnice

**Cilj:**

Istaknuti važnost održavanja higijene vjeđa kod upalnih ili iritativnih simptoma

**Bolesnici i metode:**

Slučajevi oboljenja vjeđa poput upala Meibomovih žlijezda, suho oko ili demodikoza biti će prikazani

**Rezultati:**

Većina poremećaja na vjeđama nema trajnu posljedicu za vidnu oštrinu ili život bolesnika., mnoge uzrokuju iritativne simptome ili upalu vjeđa i tako utječu na kvalitetu života bolesnika. Znakovi poremećaja na vjeđama mogu biti toliko suptilni i neprimjetni bez detaljnog pregleda i mogu ostati nedijagnosticirani. Trepavice su također zaštitni aparat oka i bez njih gotovo sve izaziva iritaciju u očiju. Suvremene dijete mogu biti razlogom patoloških pojava na vjeđama npr. smanjene funkcije Meibomovih žlijezda ili kvantitativnim promjenama u trepavicama.

Tehnologija je divna stvar. Razvija se izuzetno brzo i prilagođava naš svakodnevni život, pomaže nam uspostaviti vezu s drugim ljudima, čini naše živote jednostavnijima. Uglavnom previše dobrih stvari može biti loše. Mnogo ljudi provodi previše vremena na e-čitačima, pametnim telefonima ili laptopima ili igrajući se na tabletima. Što to znači za zdravlje očiju? Broj treptaja vjeđa se smanjuje kod gledanja na kompjutere. Pitanje je što je bilo prvo: smanjenje broja treptaja koje dovode do suhog oka ili upale žlijezda u vjeđama ili do demodikoze ili je sve to bilo prvo i prouzročilo computer vision syndrome.

Higijena vjeđa preporučuje se kod različitih poremećaja i preporuka je da traje duže od 6 mjeseci. Također izuzetno je bitan poremećaj u bakterijskom mikrobiotu spojnice. Prisutnost oportunističkih infekcija može stimulirati i zaraženost različitim grinjama npr. poput Demodexa.

**Zaključak:**

Sve te promjene i patološki nalazi na vjeđama utječu na kvalitetu i stabilnost suznog filma- dobra briga i higijena vjeđa je potrebna kako bi se odstranilo prljavštinu, debris i strana tijela koja se nakupljaju tijekom radnog dana na našim vjeđama i trepavicama.

**Title:**

Eyelid Hygiene in the Technologically Developed World

**Authors:**

Ivekovic R,Zrinscak O,Petric Vickovic I, Lacmanovic Loncar V,Vatavuk Z

**Institution:**

University Department of Ophthalmology University Hospital Center Sestre milosrdnice

**Aim:**

To point out importance of eyelid hygiene in different inflammatory or irritative symptoms

**Patients and methods:**

Several cases of eyelid disorders like inflammation of Meibomian glands, dry eye or demodicosis. will be presented.

**Results:**

Most eyelid disorders are not vision- or life-threatening, many of them can induce irritative symptoms and inflammation altering the patient's quality of life. Signs of eyelid disorders can be so subtle that without a detailed examination of the lid margin, they can go undiagnosed. Without the eyelashes, almost anything could irritate your eyes causing them to become irritated and infected. Modern diet may be the reason of pathological appearance of eyelids like Meibomian gland dysfunction or quantitative changes in eyelashes.

Technology is a wonderful thing. It develops rapidly to accommodate our ever-changing needs, it helps us connect to others, and it makes our lives easier and more convenient. However, as the saying goes, too much of a good thing can be bad. Whether it is for work or play, many people spend hours a day reading on e-readers, texting on smartphones, typing on laptops or playing on tablets. However, what does this mean for eye health? During looking at computers, our blinking rate decrease. Therefore, what was first: decrease of blinking and dry eye or inflammation of eyelid glands or demodicosis or all this happened first and after that, we developed computer vision syndrome.

Eyelid hygiene is recommended in different eyelid disorders and performing it is highly recommended even in periods longer than 6 months. Also very important is bacterial microbiota imbalance in the conjunctival sac and eyelid conjunctiva. Presence of opportune infections can stimulate infestations with different mites like Demodex.

**Conclusion:**

All this changes and pathological findings on eyelid do influence on quality and stability of the lacrimal film - given the amount of dirt, pollution, debris, and foreign matter that accumulates on our eyelids and lashes on a daily basis, good eyelid care and hygiene is essential.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA ORBITU / Orbit section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Renata

**Ime i prezime / First and Last Name:-Last**

Iveković

## 45. Gordana Đipalo

**Naslov:**

Akutno odbacivanje transplantata rožnice nakon 2 doze mRNA cjepiva protiv Covid – 19 infekcije i svježeg preboljenja Covid-19 bolesti

**Autori:**

Gordana Đipalo, Dean Šarić, Mladen Bušić

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica "Sveti Duh" Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J.J. Strossmayera u Osijeku. Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam. Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice

**Cilj:**

Opisati slučaj akutnog odbacivanja transplantata rožnice nakon cijepljenja sa 2. doze mRNA cjepivom protiv koronavirusne bolesti COVID-19 i svježeg preboljenja Covid-19 bolesti

**Bolesnici i metode:**

Bolesnik s prethodnom keratoplastikom razvio je poslije cijepljenja i svježeg preboljenja imunološko odbacivanje transplantata rožnice na oba oka

**Rezultati:**

Prikazati će se rezultati izvršenih pretraga, prva linija liječenja, napredovanje i krajnji rezultat liječenja pacijenta. Nekoliko radova opisuje slučajeve odbacivanja transplantata ubrzo nakon cjepiva protiv Covid-19 infekcije, no isto tako opisuju da brza reakcija i akutno liječenje mogu dovesti do stabilizacije situacije i krajnjeg željenog rezultata.

**Zaključak:**

Moguće je odbacivanje transplantata rožnice neposredno nakon preboljenja ili primitka cjepiva. Potrebne su daljnje studije, redovita praćenja transplantiranih pacijenata kako bi došli do jasnog i zročno posljedičnog mehanizma reakcije između transplantata rožnice i cjepiva protiv Covid-19 infekcije. Te kako bi otkrili moguću povezanost odbacivanja transplantata sa cjepivom i budućim virusnim infekcijama.

**Title:**

Acute rejection of corneal grafts after 2 doses of mRNA vaccine against Covid-19 infection and fresh infection of Covid-19 disease

**Authors:**

Gordana Đipalo, Dean Šarić, Mladen Bušić

**Institution:**

Department of Eye Diseases, University Hospital "Sveti Duh" Zagreb, School of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, J.J. Strossmayer University of Osijek. Reference Center of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strabismus. Reference Center of the Ministry of Health of the Republic of Croatia for hereditary retinal dystrophy



**Aim:**

To describe the case of acute rejection of corneal grafts after vaccination of the 2nd dose of mRNA vaccine against coronavirus disease COVID-19 and fresh recovery of Covid-19 disease

**Patients and methods:**

Patient with previous keratoplasty developed immune rejection of corneal grafts in both eyes after vaccination and recent recovery

**Results:**

The results of the tests, the first line of treatment, progression and the end result of the patient's treatment will be presented. Several papers describe cases of transplant rejection shortly after the Covid-

19 vaccine, but also they describe that rapid reaction and acute treatment can lead to stabilization of the situation and the final desired result.

**Conclusion:**

Corneal transplant rejection is possible immediately after fresh infection from Covid-19 or vaccine against Covid-19 infection. Day-long studies are needed, regular follow-up of transplant patients to come up with a clear causal mechanism of reaction between corneal grafts and Covid-

19 infection vaccines. And to discover a possible link between transplant rejection and vaccine in future viral infections.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Gordana

**Ime i prezime / First and Last Name:-Last**

Đipalo

## 46. Dean Šarić

### **Naslov:**

Kada su kontaktne leće bolje rješenje od refrakcijske kirurgije za korekciju visoke kratkovidnosti

### **Autori:**

D. Šarić, S. Ramić

### **Ustanova:**

Klinika za očne bolesti, Klinička bolnica "Sveti Duh" Zagreb, Poliklinika Optical Express

### **Cilj:**

Procijeniti učinak preoperativne i postoperativne keratometrije na refrakcijski ishod nakon laser in situ keratomileuse (LASIK) za visoku kratkovidnost.

### **Bolesnici i metode:**

Retrospektivno su analizirani podatci o 112 očiju (56 bolesnika) s kratkovidnošću  $\geq -8$  D koji su imali korekciju LASIK metodom od siječnja 2015. do studenog 2022. godine. Mjerene su postoperativna keratometrija, aberacije viseg reda (HOA) i zadovoljstvo pacijenata.

### **Rezultati:**

LASIK je učinjen kod 112 očiju (srednja dob 28 godina). Pacijenti su grupirani prema stupnju preoperativne kratkovidnosti u dvije skupine: Skupina 1,  $-8$  D do  $-10$  D; Skupina 2,  $-10$  do  $-12$  D. Ishod među različitim skupinama kratkovidnosti stratificiran je prema pred i postoperativnoj keratometriji. Trend prema većoj podkorekciji zabilježen je u očima s preoperativnom keratometrijom  $<43,5$  D u usporedbi s onima sa strmijom keratometrijom  $>46$  D u obje skupine kratkovidnosti. Podkorekcija i snažniji porast HOA zabilježeni su i u postoperativnim skupinama keratometrije  $<35$  D.

### **Zaključak:**

Mozemo zaključiti da preoperativna i postoperativna keratometrija utječu na ishod HOA-e i zadovoljstvo pacijenata i mogu se koristiti za odabir loših kandidata za refrakcijsku kirurgiju kod visokih miopa.

### **Title:**

When contact lenses are better solution than refractive surgery in high myopia

### **Authors:**

D. Šarić, S. Ramić

### **Institution:**

Eye Clinic, Clinical hospital "Sveti Duh" Zagreb, Policlinic Optical Express

### **Aim:**

To evaluate the effect of preoperative and postoperative keratometry on the refractive outcome after laser in situ keratomileusis (LASIK) for high myopia.

### **Patients and methods:**

Records of 112 eyes (56 patients) with myopia  $\geq -8$  D who had LASIK from January 2015 to November 2022, were retrospectively analyzed. Main outcome measures were postoperative keratometry, high order aberrations (HOA) and patients satisfaction.

### **Results:**

LASIK was performed in 112 eyes (mean age 28 years). Patients were grouped according to the degree of preoperative myopia into two groups: Group 1, -8 D to -10 D; Group 2, -10 to -12 D. The refractive outcome among the different myopia groups was stratified by pre- and postoperative keratometry. A trend toward greater undercorrection was noted in eyes with preoperative keratometry <43.5 D compared with those with steeper keratometry >46 D in both myopia groups. The undercorrection and stronger increase in HOA was also noted in postoperative keratometry groups <35 D.

**Conclusion:**

Preoperative and postoperative keratometry appeared to influence the HOA outcome and patients satisfaction and can be used to select poor candidates for refractive surgery.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJAU ZA KONTAKTOLOGIJU / Contactology section

**Titula / Title:**

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Dean

**Ime i prezime / First and Last Name:-Last**

Šarić

## 47. Nenad Vukojević

**Naslov:**

Difuzna žilnična atrofija, nova dijagnoza u spektru PRPH2 mutacije ili varijanta distrofije mrežnice

**Autori:**

Nenad Vukojević, Tomislav Jukić, Marija Vukojević, Marija Štanfel, Krešimir Mandić, Dalibor Opačić

**Ustanova:**

Klinika za očne bolesti, Medicinski fakultet Sveučilišta u Zagrebu, KBC Zagreb

**Cilj:**

Cilj ovog rada je prikaz pacijenta s promjenama centralne žilnice, makule i mrežnice stražnjeg pola u sklopu PRPH2 mutacije.

**Bolesnici i metode:**

Kolor fotografija, fundus autofluorescenca i SD OCT korišteni su za praćenje promjena kroz šest godina.

**Rezultati:**

Funkcionalna i slikovna dijagnostika fundusa oba oka prikazala je promjene i napredovanje bolesti u razdoblju od šest godina koje su dovele do ekstremnog pogoršanja vidne funkcije.

**Zaključak:**

Iako je PRPH2 mutacija karakteristika centralne areolarne distrofije žilnice i nekih makularnih distrofija, progresija bolesti kod ovog pacijenta pokazuje na potrebu redefiniranja poremećaja izazvanih PRPH2 mutacijom.

**Title:**

Diffuse choroidal atrophy, a new diagnosis in the spectrum of PRPH2 mutation or retinal dystrophy variant

**Authors:**

Nenad Vukojević, Tomislav Jukić, Marija Vukojević, Marija Štanfel, Krešimir Mandić, Dalibor Opačić

**Institution:**

Department of Ophthalmology, School of Medicine, University of Zagreb, UHC Zagreb

**Aim:**

The aim is the presentation of a patient with changes in the central choroid, macula, and posterior pole retina as part of the PRPH2 mutation.

**Patients and methods:**

Color fundus photography, fundus autofluorescence, and SD-OCT were used to monitor changes over six years.

**Results:**

Functional and imaging diagnostics of the fundus appearance showed the progression of the disease over a period of six years, which led to an extreme deterioration of visual function.

**Conclusion:**

Although PRPH2 mutation is characteristic of central areolar choroidal dystrophy and some macular dystrophies, the progression of the disease in this patient indicates the need to redefine disorders caused by PRPH2 mutation.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA UVEA-u / Uvea section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Nenad

**Ime i prezime / First and Last Name:-Last**

Vukojević

## 48. Luka Ivić

**Naslov:**

Slučaj očnog ishemijskog sindroma kao bolesti koja oponaša uveitis

**Autori:**

Luka Ivić, Nenad Vukojević

**Ustanova:**

Zavod za Oftalmologiju, Klinički Bolnički Centar Zagreb, Zagreb, Republika Hrvatska

**Cilj:**

Cilj je prikazati bolesnika sa očnim ishemijskim sindromom koji se manifestirao kao bolest koja oponaša uveitis

**Bolesnici i metode:**

Ovaj prikaz slučaja opisuje 75-godišnju pacijenticu koja se javila s hiperemijom, bolovima i fotofobijom desnog oka od jutra zbog čega je pregledana u Hitnoj oftalmološkoj ambulanti Kliničkog bolničkog centra Zagreb. Anamnestički navodi da ima stalne bolove i nelagodu u malim zglobovima koje je liječila Ibuprofenom za dnjih 20 godina. Inicijalni pregled uključivao je najbolju korekciju vidne oštine (BCVA), pregled procjepnom svjetiljkom, Goldmannovu aplanacijsku tonometriju i fundoskopski pregled. Daljnja obrada uključivala je optičku koherentnu tomografiju (OCT), fluoresceinsku angiografiju (FAG), gonioskopiju i ultrazvuk (UZ) karotidnih i vertebrobasilarnih arterija.

**Rezultati:**

BCVA na prvom posjetu bio je 0,4/0,5. Pregled desnog oka procjepnom svjetiljkom pokazao je hiperemiju bulbarne spojnice, pigmentirane precipitate na endotelu rožnice, prisutnost upalnih stanica u prednjoj sobici (Tyndall 0,5+) i zjenicu nereaktivnu na svjetlo. Pregled lijevog oka procjepnom svjetiljkom bio je uredan. Intraokularni tlak izmjeren Goldmannovom aplanacijskom tonometrijom bio je 14/14 mmHg. Fundoskopski pregled oba oka pokazao je arteriosklerotsko suženje arterija i dilataciju vena. Početna radna dijagnoza bolesnika bila je prednji uveitis koji je liječen atropinskim kapima za oči, deksametazon kapima i mašću za oči te lokalnim i oralnim nesteroidnim protuupalnim lijekovima. Tijekom sljedećih posjeta, BCVA desnog oka pogoršala se do brojanja prstiju na 2 m. Na desnom oku razvila se gusta nukleokortikalna katarakta. Nadalje, našu se stražnje sinehije na poziciji 12 sati i neovaskularizacije šarenice desnog oka. Uz to, gonioskopija je pokazala neovaskularizaciju iridokornealnog kuta desnog oka. Tada je fundoskopski pregled desnog oka pokazao plameničasta i točkasta krvarenja medioretine. Učinjena je daljnja slikovna dijagnostika: OCT nalaz je bio bez posebnosti. FAG je pokazao odgođeno punjenje gornje temporalne i gornje nazalne grane središnje retinalne vene desnog oka. UZ pregled karotidnih i vertebrobasilarnih arterija pokazao je reverzibilni protok unutar desne oftalmičke arterije. Postavljena je nova radna dijagnoza okularno ishemijskog sindroma desnog oka. Tijekom sljedeća četiri posjeta provedena su četiri tretmana retinalne fokalne laserske fotokoagulacije, bez značajne regresije neovaskularizacije šarenice i iridokornealnog kuta. Planira se daljnja terapija IVT antiVEGF lijekovima.

**Zaključak:**

Očni ishemijski sindrom rijetko je stanje koje ugrožava vid, a može se manifestirati hiperemijom oka i intraokularnom upalom, maskirajući se kao prednji uveitis. Unatoč mogućoj sličnoj prezentaciji, etiologija i liječenje očnog ishemijskog sindroma prilično su različiti u usporedbi s uveitisom.

Ovaj slučaj naglašava važnost prepoznavanja očnog ishemijskog sindroma kao jedne od bolesti koje oponašaju uveitis radi postavljanja pravovremene dijagnoze i primjene adekvatne terapije.

**Title:**

A case of ocular ischemic syndrome presenting as uveitis masquerade syndrome

**Authors:**

Luka Ivić, Nenad Vukojević

**Institution:**

Department of Ophthalmology, University Hospital Centre Zagreb, Zagreb, Croatia

**Aim:**

The aim is to present a patient with ocular ischemic syndrome presenting as uveitis masquerade syndrome.

**Patients and methods:**

This case report describes a 75-year-

old female patient who presented with hyperemia, pain and photophobia of her right eye since the morning of examination at University Hospital Centre Zagreb Ophthalmology Emergency Outpatient Clinic. Anamnestically, she reports having persistent small joint pain and discomfort which she has been treating with Ibuprofen for the past 20 years. Initial examination included best corrected visual acuity (BCVA), slit-

lamp examination, Goldmann applanation tonometry and fundoscopic exam. Further workup included optical coherence tomography (OCT), fluorescein angiography (FAG), gonioscopy and ultrasound (US) of the carotid and vertebrobasilar arteries.

**Results:**

The BCVA on the first visit was 0.4/0.5. Slit lamp examination of the right eye showed hyperemia of the bulbar conjunctiva, pigmented deposits on the corneal endothelium, presence of inflammatory cells in the anterior chamber (Tyndall 0.5+) and pupil unreactive to light. Slit lamp examination of the left eye was unremarkable. Intraocular pressure measured via Goldmann applanation tonometry was 14/14 mmHg. Fundoscopic examination of both eyes showed arteriosclerotic narrowing of the arteries with venous dilatation. Patients initial working diagnosis was anterior uveitis which was treated with atropine ocular drops, dexamethasone ocular drops and ointment, and topical and oral NSAIDs. During subsequent visits, BCVA of the right eye deteriorated to counting fingers at 2m. A dense nucleocortical cataract has developed in the right eye. Furthermore, posterior synechiae at 12 o'clock position and iris neovascularizations of the right eye were noted. Additionally, gonioscopy demonstrated neovascularizations of the iridocorneal angle of the right eye. At that time fundoscopic examination of the right eye showed flame and dot-and-blot hemorrhages of the medioretina. Further imaging diagnostics were performed: OCT finding was unremarkable. FAG demonstrated delayed filling of the superior temporal and superior nasal branch of the central retinal vein of the right eye. US examination of the carotid and vertebrobasilar arteries demonstrated reversible flow within the right ophthalmic artery. A new working diagnosis of ocular ischemic syndrome of the right eye was established. Over the following four visits, four treatments with retinal focal laser photocoagulation were performed, with no notable regression of iris and iridocorneal angle neovascularizations. Further therapy with IVT anti-VEGF agents is planned.

**Conclusion:**

Ocular ischemic syndrome is a rare sight-

threatening condition that can manifest as ocular hyperemia and intraocular inflammation, masq

uerading as anterior uveitis. Despite the possible similarities in their presentation, the etiology and treatment of ocular ischemic syndrome are quite different compared to uveitis. This case emphasizes the importance of recognizing ocular ischemic syndrome as one of the diseases that mimic uveitis in order to establish a timely diagnosis and apply adequate therapy.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Luka

**Ime i prezime / First and Last Name:-Last**

Ivić



## 49. Andrea Lukanović Kegalj

**Naslov:**

Tonička pupila kod djeteta tijekom infekcije varicella-zoster virusom – prikaz slučaja

**Autori:**

Andrea Lukanović Kegalj, Zvezdana Alpeza-Dunato

**Ustanova:**

Klinika za oftalmologiju, Klinički bolnički centar Rijeka

**Cilj:**

Prikazati slučaj unilateralne toničke pupile kod djeteta nastale tijekom infekcije varicella-zoster virusom.

**Bolesnici i metode:**

Šestogodišnja djevojčica, inače zdrava, dovedena je na pregled 9-og dana po infekciji varicella-zoster virusom zbog anizokorije koju su roditelji primijetili 5-og dana bolesti, čemu je prethodilo crvenilo istog oka zbog čega je u terapiji imala tobramicin kap i mast. Učini se kompletan oftalmološki pregled, pregled neuropedijatra te dodatna dijagnostička obrada koja je uključivala laboratorijske nalaze, analizu cerebrospinalnog likvora te MR mozga i orbita.

**Rezultati:**

Dijagnostičkom obradom isključeni su drugi mogući intrakranijalni uzroci nastanka anizokorije. P rovedena je terapija aciklovirom intravenski po preporuci infektologa, ali anizokorija perzistira te se djevojčica dalje redovito prati u oftalmološkoj ambulanti.

**Zaključak:**

Tonička pupila uslijed infekcije varicella zoster virusom je rijetka komplikacija koja kod djeteta mla đeg od 7 godina može biti potencijalni uzrok ambliopije uslijed pada vidne oštine istog oka. Stoga su važne česte oftalmološke kontrole radi što ranijeg otkrivanja problema te što ranijeg preventivno-terapijskog pristupa.

**Title:**

Tonic pupil in a child after varicella-zoster virus infection – case report

**Authors:**

Andrea Lukanović Kegalj, Zvezdana Alpeza-Dunato

**Institution:**

Ophthalmology Department, Clinical Hospital Center Rijeka

**Aim:**

To report a clinical case of unilateral tonic pupil in child secondary to varicella-zoster virus infection.

**Patients and methods:**

A 6-year old girl, otherwise healthy, presented 9th day of infection with varicella-zoster virus because of anisocoria noticed by her parents 5th day of illness preceded by redness of the same eye, why she was treated with tobramicin drops and ointment. A complete ophthalmological examination, an examination by a neuropediatrician and additional diagnostic work-up which included laboratory findings, analysis of cerebrospinal fluid and MRI of the brain and orbits were performed.

**Results:**

Other possible intracranial causes of anisocoria are excluded by the diagnostic process. Intravenous therapy with acyclovir was carried out on the recommendation of an infectious disease specialist, but the anisocoria persists and the girl continues to be monitored regularly in the ophthalmology clinic.

**Conclusion:**

Tonic pupil due to varicella zoster virus infection is a rare complication, which in a child less than 7 years of age can be potential cause of amblyopia due to a decrease in visual acuity of the same eye. Therefore, frequent ophthalmological observations are important to detect the problem early and act upon it.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

**Titula / Title:**

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Andrea

**Ime i prezime / First and Last Name:-Last**

Lukanović Kegalj

## 50. Armin Kasumović

**Naslov:**

Effect of pupil size on biometry measurements and intraocular lens power in hyperopic and myopic eyes

**Autori:**

Armin Kasumović, Ante Vukojević, Valentina Lacmanović Lončar, Ivanka Petric Vicković, Renata Iveković, Zoran Vataavuk

**Ustanova:**

KBC Sestre milosrdnice, Zagreb

**Cilj:**

Cilj ovog istraživanja bio je procijeniti učinke širenja zjenice na mjerenja očnih parametara i izračun snage intraokularne leće (IOL) pomoću IOLMaster 700 kod kratkovidnih i dalekovidnih pacijenata.

**Bolesnici i metode:**

U ovu prospektivnu studiju uključeno je ukupno 400 očiju u razdoblju od prosinca 2022. do ožujka 2023. Aksijalna duljina (AL), središnja debljina rožnice (CCT), dubina prednje komore (ACD), debljina leće (LT), ravna keratometrija (K), strma K, astigmatizam, horizontalni dijametar rožnice (WTW) i širina zjenice bili su izmjereni prije i nakon primjene lokalnog tropikamida. Odgovarajuće jačine IOL-a izračunate su korištenjem formula Sanders–Retzlaff–Kraff/theoretical (SRK/T), Haigis, Hoffer Q i Barrett Universal II.

**Rezultati:**

Varijacije u AL, K1 i K2 nakon širenja zjenice nisu bile značajne. Rezultati su pokazali da se ACD značajno povećao nakon širenja zjenice i kod dalekovidnih i kratkovidnih pacijenata, dok se LT značajno smanjio nakon dilatacije. WtW se prilikom midrijaze također značajno povećao. Kada je snaga IOL-a izračunata kao diskretna varijabla, uočene su značajne razlike između snage IOL-a prije i nakon kapanja midrijatika.

**Zaključak:**

Širenje zjenice u kratkovidnim i dalekovidnim očima ne uzrokuje značajne promjene u AL i K. Međutim, značajno povećava ACD kao i vrijednosti WtW i značajno smanjuje vrijednost LT. Kirurzi moraju procijeniti širinu zjenice prilikom rada s formulama treće generacije za izračun jačine IOL (SRK/T, Haigis, Hoffer Q) obzirom na ekstremne slučajeve. Formula Barrett Universal II imala je najbolju usklađenost između različitih stanja zjenica u kratkovidnim i dalekovidnim očima.

**Title:**

Effect of pupil size on biometry measurements and intraocular lens power in hyperopic and myopic eyes

**Authors:**

Armin Kasumović, Ante Vukojević, Valentina Lacmanović Lončar, Ivanka Petric Vicković, Renata Iveković, Zoran Vataavuk

**Institution:**

KBC Sestre milosrdnice, Zagreb

**Aim:**

The aim of this research was to evaluate the effects of pupil dilation on ocular parameter measurements and intraocular lens (IOL) power calculation using IOLMaster 700 in myopic and hyperopic patients.

**Patients and methods:**

A total of 400 eyes were included in this prospective study in the period from December 2022. to March 2023. Axial length (AL), central corneal thickness (CCT), anterior chamber depth (ACD), lens thickness (LT), flat keratometry (K), steep K, astigmatism, white-to-white (WTW), and pupil width were measured, before and after administration of topical tropicamide. The corresponding IOL powers were calculated using Sanders–Retzlaff–Kraff/theoretical (SRK/T), Haigis, Hoffer Q and Barrett Universal II formulas.

**Results:**

Variations in AL, K1 and K2 following dilation were not significant. The results showed that ACD increased significantly after dilation in both hyperopic and myopic patients whereas LT decreased significantly after dilation. Post-dilation WtW increased significantly as well. When IOL power was calculated as a discrete variable, significant differences were observed between pre- and post-dilation IOL power.

**Conclusion:**

Pupil dilation in myopic and farsighted eyes does not cause significant changes in AL and K. However, it significantly increases the ACD as well as the WtW values and significantly decreases the LT value. Surgeons must estimate pupil width when working with third-generation IOL power calculation formulas (SRK/T, Haigis, Hoffer Q) considering extreme cases. The Barrett Universal II formula had the best match between different pupil conditions in myopic and farsighted eyes.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

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**Ime i prezime / First and Last Name:-First**

Armin

**Ime i prezime / First and Last Name:-Last**

Kasumović

## 51. Matoc Ines

**Naslov:**

Kratkotrajno liječenje tireotoksične orbitopatije doksiciklinom: randomizirano kliničko ispitivanje

**Autori:**

Matoc I, Kasa K, Zrinščak O, Iveković R, Vatauvuk Z

**Ustanova:**

KBC Sestre milosrdnice Zagreb

**Cilj:**

Istražiti učinkovitost 12-tjednog liječenja tireoidne orbitopatije (thyroid eye disease, TED) doksiciklinom.

**Bolesnici i metode:**

U ovo randomizirano kontrolirano kliničko ispitivanje bilo je uključeno 100 dobro podudarnih bolesnika sa TED-om. Sudionici su nasumično raspoređeni u omjeru 1:1 za primanje doksiciklina (50 mg) ili bez liječenja tijekom 12 tjedana. Za svako oko izmjerena je udaljenost marginalnog refleksa (MRD1 i MRD2), vjeđni raspored, funkcija mišića levator palpebre superioris, lagofthalmus, proptoza i bulbomotrika zajedno s procjenom diplopije i bodovanjem na skali kvalitete života specifičnoj za Gravesovu oftalmopatiju (GO-QOL). Mjerenja su obavljena na početku, a zatim četiri i dvanaest tjedana kasnije. Zabilježene su nuspojave. Isključeni su sudionici s nekontroliranim sistemskim bolestima ili alergijom na tetracikline, kao i trudnice, dojilje ili mlađi od 18 godina.

**Rezultati:**

Ukupno 50 sudionika bilo je tretirano doksiciklinom, a 50 je bilo kontrolna skupina. Prosječna (SD) dob bila je 36,7 (9,1) godina, a 75 sudionika (75,0%) bile su žene. Sukladnost s lijekovima provjeravana je tijekom razgovora sa sudionicima i brojanjem viška tableta. U 12. tjednu stopa poboljšanja bila je 38,0% (19 od 50) u skupini koja je primala doksiciklin i 16,0% (8 od 50) u kontrolnoj skupini (razlika, 22,0%; 95% CI, 5,0-39,0;  $P = ,01$ ) u populaciji koja se namjerava liječiti. U obje skupine nisu zabilježeni nikakvi štetni događaji osim 1 slučaja blage regurgitacije želučane kiseline.

**Zaključak:**

Rezultati ove studije pokazuju da je 50 mg dnevno oralnog doksiciklina rezultiralo poboljšanjem simptoma povezanih s TED-om nakon 12 tjedana u usporedbi s neliječenjem. Ovi nalazi govore u prilog liječenja TED-a doksiciklinom, ali ih treba poduprijeti dužim tijekom praćenja i povećanjem veličine skupine.

**Title:**

Short-term treatment of thyroid eye disease with doxycycline: a randomized clinical trial

**Authors:**

Matoc I, Kasa K, Zrinščak O, Iveković R, Vatauvuk Z

**Institution:**

UHC Sestre milosrdnice Zagreb

**Aim:**

To investigate the efficacy of 12 weeks doxycycline treatment of thyroid eye disease (TED).

**Patients and methods:**

In this randomized controlled clinical trial, 100 age-matched patients with TED were enrolled. Participants were randomly assigned 1:1 to receive doxycycline (50 mg) or no treatment for 12 weeks. For each eye, margin reflex distance (MRD1 and MRD2), eyelid aperture, levator palpebre superioris muscle function, lagophthalmos, proptosis and ocular motility were measured along with diplopia evaluation and Graves ophthalmopathy-specific quality-of-life (GO-QOL) scale scoring. Measurements were performed at the baseline, then four and twelve weeks later. Adverse events were recorded. Participants with uncontrolled systemic diseases or had allergy to tetracyclines, as well as those pregnant, lactating or younger than 18 were excluded.

**Results:**

A total of 50 participants were assigned to doxycycline and 50 were control group. The mean (SD) age was 36.7 (9.1) years and 75 participants (75.0%) were female. Medication compliance was checked during participant interviews and by counting excess tablets. At week 12, the improvement rate was 38.0% (19 of 50) in the doxycycline group and 16.0% (8 of 50) in the control group (difference, 22.0%; 95% CI, 5.0-39.0; P = .01) in the intention-to-treat population. No adverse events other than 1 case of mild gastric acid regurgitation was recorded in either group.

**Conclusion:**

The results of this study indicate that oral doxycycline, 50 mg daily, resulted in greater improvement of TED-related symptoms at 12 weeks compared with no treatment. These findings support the consideration of doxycycline for TED but should be tempered by recognizing the relatively short follow-up and the size of the cohort.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ines

**Ime i prezime / First and Last Name:-Last**

Matoc

## 52. Igor Knezović

**Naslov:**

NOVA Vision treatment planning software za DISC Protokol - Premijerno predstavljanje prototipa

**Autori:**

Igor Knezović

**Ustanova:**

Poliklinika Knezović za oftalmologiju

**Cilj:**

Prikaz softverskog prototipa

**Bolesnici i metode:**

Prezentirali smo novu metodu u liječenju keratokonusa, Decentrirani Individualizirani Sfero-Cilindrični (DISC) protokol, osmišljenu i razvijenu u Poliklinici Knezović, Zagreb, Hrvatska. Koncept ualno se temelji na decentriranoj excimer laserskoj ablaciji pacijentove parcijalne sferocilindrične refrakcije od središta zjenice i verteksa rožnice prema mjestu najveće zakrivljenosti rožnice (apek su rožnice) u kombinaciji s kornealnim cross-linkingom. Točan položaj decentracije kao i veličina laserske ablacije definira se za svakog pacijenta pojedinačno.

**Rezultati:**

Aplikacija uzima relevantne ulazne podatke i koristi algoritme linearne regresije i stabla odlučivanja kako bi predvidjela očekivane kirurške ishode. Performanse modela su procijenjene korištenjem sveobuhvatnih mjera performansi, a primjenom tehnika poput unakrsne provjere i podešavanja hiperparametara smo validirali učinkovitost, preciznost i predvidljivost rješenja.

Prediktivni model generiran je pomoću supervised machine learning algoritma na osnovu podataka o već učinjenim kirurškim zahvatima.

**Zaključak:**

Teorijske, retrospektivne i prospektivne studije pokazale su da bi upotreba softvera mogla dovesti do ostvarenja boljih postoperativnih rezultata u usporedbi s korištenjem isključivo manifestne refrakcije ili izvođenjem parcijalnih topografskih zahvata.

**Title:**

NOVA Vision treatment planning software for DISC Protocol - Premier prototype presentation

**Authors:**

Igor Knezović

**Institution:**

Knezovic Eye Institute

**Aim:**

Software prototype presentation

**Patients and methods:**

We have introduced and reported a new method in keratoconus treatment, Decentered Individualized Sphero-

Cylindrical (DISC) Protocol developed at the Knezovic Eye Institute, Zagreb, Croatia. It is conceptually based on the decentrated excimer laser ablations of the patient's partial spherocylindrical refraction from the pupillary centre and corneal vertex toward the place of the greatest curvature of

the cornea (corneal apex) combined with corneal cross linking. The exact position of the decentration as well as the magnitude of the laser ablation is defined for each patient individually

**Results:**

The application takes relevant inputs and uses linear regression and decision tree algorithms to predict the expected surgical outcomes. The performance of the model was evaluated using a range of diverse and comprehensive performance metrics and various techniques such as cross-validation and hyperparameter tuning were applied to validate the effectiveness, accuracy, and predictability of the solution.

The predictive model generated by the supervised machine learning algorithm on a large dataset of past surgical procedures can be used to inform the ophthalmologist's decision-making process during a surgical procedure.

**Conclusion:**

Theoretical, retrospective and prospective studies have shown that the software enables surgeons to provide better postoperative vision versus using MRx or topography-modified refraction.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

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Knezović



### 53. Nenad Vukojević

**Naslov:**

Pigmentna retinopatija u bolesnika s nasljednim nedostatkom mitohondrijskog trifunkcionalnog proteina i nedostatkom dugolančane 3-hidroksiacyl-CoA dehidrogenaze

**Autori:**

Nenad Vukojević, Tomislav Jukić, Marija Vukojević, Mate Majta, Marija Štanfel, Krešimir Mandić, Dalibor Opačić

**Ustanova:**

Klinika za očne bolesti, Medicinski fakultet Sveučilišta u Zagrebu, KBC Zagreb

**Cilj:**

Cilj ovog rada je prikazati slučaj pigmentne retinopatije dva brata s nedostatkom dugolančane 3-hidroksiacyl-CoA dehidrogenaze (LCHAD) i trifunkcionalnog proteina (TFP).

**Bolesnici i metode:**

Gubitak vidne funkcije potvrđen slikovnom i funkcionalnom dijagnostikom ukazuje na korioretinalnu bolest.

**Rezultati:**

Kolor fotografija fundusa i autofluorescenca fundusa pokazala je RPE promjene u makuli i retini stražnjeg pola. SD-OCT je otkrio promjene RPE i oštećenje fotoreceptora potvrđeno ERG-om sa smanjenim odgovorom obje vrste fotoreceptora.

**Zaključak:**

Progresivna retinopatija koja se javlja u bolesnika s nasljednim nedostatkom mitohondrijskog trifunkcionalnog proteina (TFP) i nedostatkom dugolančane 3-hidroksiacyl-CoA dehidrogenaze (LCHAD) otkriva metaboličku dekompenzaciju i oštećenje stanica retine s gubitkom vidne funkcije. Iako uloga oksidacije masnih kiselina u metabolizmu retine nije točno definirana, progresivna retinopatija koja se javlja u bolesnika s nasljednim nedostatkom mitohondrijskog trifunkcionalnog proteina sugerira da je  $\beta$ -oksidacija važna u metabolizmu retine.

**Title:**

Pigmentary retinopathy in patients with inherited deficiency of mitochondrial trifunctional protein and long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency

**Authors:**

Nenad Vukojević, Tomislav Jukić, Marija Vukojević, Mate Majta, Marija Štanfel, Krešimir Mandić, Dalibor Opačić

**Institution:**

Department of Ophthalmology, School of Medicine, University of Zagreb, UHC Zagreb

**Aim:**

The aim of this work is to present a case of pigmentary retinopathy of two brothers with Long-chain 3-hydroxyacyl-CoA dehydrogenase (LCHAD) and trifunctional protein (TFP) deficiency

**Patients and methods:**

Visual function loss confirmed by retinal imaging and functional diagnostics demonstrate chorioretinal disease.

**Results:**

Fundus photography, fundus autofluorescence showed RPE changes in the macula and retina of the posterior pole. SD-

OCT discovered RPE alterations and photoreceptor damage confirmed by full-field ERG with reduced both photoreceptor responses.

**Conclusion:**

Progressive retinopathy that occurs in patients with inherited deficiency of mitochondrial trifunctional protein (TFP) and long-chain 3-hydroxyacyl-

CoA dehydrogenase deficiency (LCHAD) reveals metabolic decompensation and retinal cell damage with visual function loss

Although the role of fatty acid oxidation in retinal metabolism has not been precisely defined, progressive retinopathy that occurs in patients with inherited deficiency of mitochondrial trifunctional protein suggests that  $\beta$ -oxidation is important in retinal metabolism.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Nenad

**Ime i prezime / First and Last Name:-Last**

Vukojević

## 54. Žarković Tomislava

**Naslov:**

Strukturirani vidni evocirani potencijali u ispitanika s hipotireozom

**Autori:**

Žarković T., Marković I., Bućan K.

**Ustanova:**

Klinika za očne bolesti KBC Split

**Cilj:**

Pronaći poveznicu između serumskih razina TSH i funkcionalnog integriteta vidnog puta u ispitanika s hipotireozom pomoću strukturiranog vidnog evociranog potencijala ?

**Bolesnici i metode:**

Istraživanje je provedeno na Klinici za očne bolesti KBC Split od 02.siječnja do 01.ožujka 2023. U istraživanje je uključeno 20 ispitanica u dobi od 20 do 60 godina koje su liječene nadomjesnom terapijom zbog hipotireoze i 20 zdravih žena iste dobi (kontrolna skupina). Kriteriji isključena bili su: bolesnici s kroničnim poremećajima, npr. šećernom bolešću, cerebrovaskularnim bolestima, bolestima motoričkih neurona, parkinsonizmom, multiplom sklerozom, neuromuskularnim poremećajima, pušenjem, alkoholizmom, kroničnim bolestima jetre i bubrega, očnim bolestima i psihijatrijske bolesti. Svi ispitanici imali su kompletan oftalmološki pregled. Strukturirani VEP je proveden prema standardnom ISCEV protokolu.

**Rezultati:**

Kod podražaja prostorne frekvencije 0.3° srednja latencija P100 bila je značajno odgođena (112,5 milisekundi (ms)), a amplituda značajno snižena (8.1 mikrovolti ( $\mu\text{V}$ )) u skupini s hipotireozom u usporedbi s kontrolnom skupinom (105,2 ms i 11,8  $\mu\text{V}$ ). Nije bilo razlike između skupina (hipotireoza u odnosu na kontrolu) kod podražaja prostorne frekvencije 1.0°.

**Zaključak:**

Niske razine cirkulirajućeg hipotiroidnog hormona povezane su sa usporenom latencijom i sniženom amplitudom kod podražaja prostorne frekvencije 0.3°.

**Title:**

Visual evoked potential in hypothyroid patients

**Authors:**

Žarković T., Marković I., Bućan K.

**Institution:**

Department of Ophthalmology ,University hospital center Split

**Aim:**

To evaluate if there is an association between levels of circulating hypothyroid hormone and functional integrity of the visual pathway in hypothyroid patients using the visual evoked potential

**Patients and methods:**

The study was conducted at the Department of Ophthalmology, University hospital center Split from January 2 to March 1, 2023. The study included 20 female patients aged 20 to 60 years who were treated with replacement therapy for hypothyroidism and 20 healthy women of similar age (control group). Exclusion criteria were: patients with chronic disorders, eg. diabetes, cerebrovascular diseases, motor neuron diseases, parkinsonism, multiple sclerosis, neuromuscular disorders,

smoking, alcoholism, chronic liver and kidney diseases, eye diseases and psychiatric diseases. All subjects had a complete ophthalmological examination. VEP was performed according to the standard ISCEV protocol.

**Results:**

For the 0.3° check size, the mean P100 latency was significantly delayed (112.5 milliseconds (ms)) and the amplitude significantly reduced (8.1 microvolts ( $\mu\text{V}$ )) in the hypothyroid group compared to the control group (105.2 ms and 11.8  $\mu\text{V}$ ). There was no difference between groups (hypothyroid vs. control) for the 1.0° check size.

**Conclusion:**

Low levels of circulating hypothyroid hormone are associated with delayed latency and reduced amplitude to 0.3° check size.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Tomislava

**Ime i prezime / First and Last Name:-Last**

Žarković

## 55. Bukvić Marija

**Naslov:**

Mijelinski oligodendrocitni glikoprotein ( MOG) optički neuritis : Serija kliničkih slučajeva

**Autori:**

Bukvić Marija, Vidović Tomislav, Perić Sanja, Bešlić Iva, Barišić Kutija Marija

**Ustanova:**

Klinički bolnički centar Zagreb

**Cilj:**

Cilj nam je prikazati različitost kliničke prezentacije MOG optičkog neuritisa, naglasiti indikacije za testiranjem na MOG protutijela te preporuke za liječenje.

**Bolesnici i metode:**

Usporedili smo 3 klinička slučaja MOG pozitivnog optičkog neuritisa. Osim standardnog oftalmološkog pregleda učinjeno je testiranje vidnog polja, optička koherentna tomografija makule i vidnog živca, MR mozga i orbita, te određivanje MOG protutijela.

**Rezultati:**

Pacijenti uključeni u ovu seriju kliničkih slučajeva su djeca u dobi od 6 do 14 godina, dvije djevojčice i jedan dječak. Bolest se kod svih pacijenata prezentirala s padom vidne oštine bez periokularne boli. Kod dvoje djece nađen je papilitis vidnog živca, a kod trećeg retrobulbarni optički neuritis. Kod svih pacijenata bilo je potrebno više od jednom ponoviti testiranje na MOG protutijela dok nije dobiven pozitivan nalaz. Svi pacijenti su liječeni pulsnom kortikosteridnom terapijom, koja je dovela do oporavka vida. U dvoje djece uvedena je dodatna terapija zbog recidiva optičkog neuritisa.

**Zaključak:**

MOG optički neuritis najčešće se javlja kod djece. Papilitis je tipična klinička manifestacija iako se može manifestirati i kao retrobulbarni optički neuritis. Višestruki relapsi su česti. Agresivno liječenje je tijekom akutne atake optičkog neuritisa i prevencija relapsa su važni kako bi se očuvala vidna funkcija. Uporno ponavljanje neuroradioloških pretraga i testiranja na MOG protutijela potrebno je dok se ne dobije konačna dijagnoza.

**Title:**

Myelin oligodendrocyte glycoprotein (MOG) optic neuritis: A case series

**Authors:**

Bukvić Marija, Vidović Tomislav, Perić Sanja, Bešlić Iva, Barišić Kutija Marija

**Institution:**

University Hospital Centre Zagreb

**Aim:**

Our aim is to show diversity of clinical presentation of MOG optic neuritis, to emphasize indications for MOG antibody testing and recommendations for treatment.

**Patients and methods:**

We compared 3 clinical cases of MOG positive optic neuritis. In addition to the standard ophthalmological examination, visual field testing, optical coherence tomography of the macula and optic nerve, MRI of the brain and orbits, and MOG antibody tests were performed

**Results:**

Patients included in this series of clinical cases are children aged 6 to 14 years, two girls and one boy. Disease presented in all patients with a decrease in visual acuity without periocular pain. Papillitis of the optic nerve was found in two patients, and retrobulbar optic neuritis in the third. It was necessary to repeat the test for MOG antibodies more than once, until a positive result was obtained. All patients were treated with pulse corticosteroid therapy, which led to recovery of vision. Additional therapy was introduced in two children due to recurrence of optic neuritis.

**Conclusion:**

MOG optic neuritis most often occurs in children. Papillitis is a typical clinical manifestation, although it can also manifest as retrobulbar optic neuritis. Multiple relapses are common. Aggressive treatment during an acute attack of optic neuritis and prevention of relapse are important to preserve visual function. Persistent repetition of neuroradiological imaging and testing for MOG antibodies is necessary until a final diagnosis is obtained.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Marija

**Ime i prezime / First and Last Name:-Last**

Bukvić

## 56. Štanfel Marija

**Naslov:**

Uvealni melanom, 21-godišnje iskustvo

**Autori:**

Štanfel M, Vukojević N, Jukić T, Mandić K.

**Ustanova:**

Klinika za očne bolesti, KBC Zagreb

**Cilj:**

Prikazati značajke pacijenata i modaliteta liječenja uvealnog melanoma.

**Bolesnici i metode:**

Korišteni su podaci pacijenata liječenih u našoj ustanovi pod dg uvealnog melanoma (žilnica, cilija rno tijelo, šarenica) u periodu od 2000. do 2021.g., s posebnim osvrtom na epidemiološke značajke te modalitete i rezultate liječenja. Korišteni su podaci iz povijesti bolesti, operacijskih protokola i elektroničkih baza podataka naše ustanove.

**Rezultati:**

Tijekom promatranog 21-godišnjeg perioda u našoj je ustanovi radi uvealnog melanoma liječeno gotovo 600 pacijenata. Godišnje ih je bilo uglavnom oko 25-30, s bilježenjem porasta broja pacijenata u zadnjem desetljeću. Nešto je više bilo žena nego muškaraca. Korištene su metode liječenja koje čuvaju očnu jabučicu (brahiterapija, transpupilarna terapija, gamma knife iradijacija, endoresekcija i kombinacije) te metoda koja ne čuva očnu jabučicu (enukleacija - primarna ili nakon drugih zahvata). Detaljna obrada podataka je u tijeku.

**Zaključak:**

Uzevši u obzir sve dostupne tehnike liječenja uvealnog melanoma te lokalne i sistemske rezultate liječenja, u našoj se ustanovi provodi adekvatno tretiranje ove maligne bolesti, uz kvalitetnu potporu funkcionalnog multidisciplinarnog tima za melanom.

**Title:**

Uveal melanoma, 21 year experience

**Authors:**

Štanfel M, Vukojević N, Jukić T, Mandić K.

**Institution:**

Department of Ophthalmology, UHC Zagreb

**Aim:**

In this presentation we are showing characteristics of patients and treatment modalities for uveal melanoma.

**Patients and methods:**

We used data of patients treated in our clinic under the diagnosis of uveal melanoma (choirioidea, ciliary body, iris) in period from year 2000 to 2021, with special interest in epidemiological features and treatment modalities and results. Data was collected from archives, operational protocols and digital data of the institution.

**Results:**

During observed 21years period nearly 600 patients with uveal melanoma was treated at our clinic. Yearly around 25-30, with slightly higher numbers in last decade. Female patients were more common. Treatment methods used were bulbus preserving (brachytherapy, transpupillary thermo therapy, gamma knife irradiation, endoresection and combinations) and non bulbus preserving (enucleation - primary and following other treatment methods). Detail data analysis is in process.

**Conclusion:**

Considering all treatment methods and local and systemic treatment results, we provide adequate treatment of this malignancy, supported by functioning multidisciplinary melanoma team.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA UVEA-u / Uvea section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Marija

**Ime i prezime / First and Last Name:-Last**

Štanfel



## 57. Ivana Radman

### **Naslov:**

Prikaz slučaja: Herpetički keratitis nakon unakrsnog povezivanja kolagena rožnice s riboflavinom i ultraljubičastim-A za keratokonus kod zdravog 20- etogodišnjeg pacijenta

### **Autori:**

Ivana Radman, dr.med., dr.sc. Freja Bagatin, Karla Ranđelović, dr.med., prof.dr.sc. Ivanka Petric Vičković, dr.med., prim. dr.sc. Valentina Lacmanović Lončar, dr.med., prof. dr. sc. Zoran Vatavuk, dr. med.

### **Ustanova:**

Klinički bolnički centar "Sestre milosrdnice" Zagreb

### **Cilj:**

Prikaz pacijenta koji je razvio klinički dijagnosticiran herpetički keratitis u ranom postoperativnom razdoblju nakon CXL-a

### **Bolesnici i metode:**

Muškarac star 20 godina upućen na našu Kliniku zbog bilateralnog keratokonusa, stadij III desno oko i stadij I-

II lijevo oko. Nije bilo prethodne intraokularne ili kornealne operacije, herpetičnog keratitisa, autoimune bolesti ili sistemske bolesti vezivnog tkiva. Nekorigirana vidna oštrina (UCVA) bila je 0,09 na desnom oku i 0,8 na lijevom oku. Najbolja vidna oštrina korigirana naočalama (BSCVA) bila je 0,2 na desnom oku i 1,0 na lijevom oku. Obostrano dojam blage protruzije rožnice, lijevo vidljiva je dna Vogtova strija paracentralno. Središnja pahimetrija bila je 422 µm desnog oka (OD) i 468 µm lijevog oka (OS). Topografija je pokazala inferiorno obostrano stanjenje. Preporučeni tretman bio je CXL s riboflavinom i UV-

A za stabilizaciju rožnice. Pacijent je podvrgnut temeljitom razgovoru o rizicima i koristima CXL-a s kirurgom i potpisao pismeni informirani suglasnost u skladu s institucionalnim smjernicama temeljenim na Helsinškoj deklaraciji

### **Rezultati:**

Prvi dan uredan postoperativni nalaz. Petog postoperativnog dana uočena je spora reepitelizacija te je pacijent imao centralni dendritički epitelni defekt. U lokalnoj terapiji je uveden aciklovir u obliku masti, nastavak antibiotske terapije te peroralna terapija aciklovira i vitamin B. Pacijentu je aplikirano nekoliko Dexametazon subkonjunktivalnih injekcija. Topikalne kortikosteroidne kapi nastavljene su nakon zacjeljivanja epitelnog defekta. Svi lijekovi polagano su smanjivani tijekom sljedećih tjedana. Tri mjeseca kasnije, nalaz centralno Vogtove strije, ostalo uredan oftalmološki status. U terapiji održavajuća peroralna terapija 1tbl dnevno te kortikosteroid 1x i umjetne suze bez konzervansa 5-6x. S obzirom na najbolju vidnu oštrinu korekcijom naočala 0,2-0,3, planiramo ordiniranje RK2 kontaktnih leća.

### **Zaključak:**

Herpetički keratitis može biti potaknut CXL-om, čak i u slučajevima bez povijesti herpetičke bolesti oka. Primarni HSV keratitis često se manifestira kao nespecifična infekcija gornjih dišnih putova i prepoznaje se kao HSV <5% vremena. Latentna infekcija trigeminalnog ganglija može se pojaviti u nedostatku prepoznate primarne infekcije, s reaktivacijom koja se javlja kasnije kao rekurentna HSV infekcija u bilo kojoj grani trigeminalnog

og živca. Čini se da je pažljivo praćenje pacijenata nakon CXL-a važno jer rana dijagnoza i pravilno liječenje mogu olakšati uspješno liječenje herpetičkog epitelnog keratitisa i spriječiti daljnje moguće posljedice.

**Title:**

Case report: Herpetic keratitis after cross-linking of corneal collagen with riboflavin and ultraviolet-A for keratoconus in a healthy 20-year-old patient

**Authors:**

Ivana Radman, dr.med., dr.sc. Freja Bagatin, dr.med., Karla Ranđelović, dr.med., prof. dr.sc. Ivanka Petric Vicković, dr.med., prim. dr.sc. Valentina Lacmanović Lončar, dr.med., prof. dr. sc. Zoran Vatašević, dr.med.

**Institution:**

University Hospital Centre "Sestre milosrdnice" Zagreb

**Aim:**

In this case report, we present patient who developed clinically diagnosed herpetic keratitis in the early postoperative period after CXL

**Patients and methods:**

A 20-year-old man referred to our Clinic because of bilateral keratoconus, stage III right eye and stage I-II left eye. There was no previous intraocular or corneal surgery, herpetic keratitis, autoimmune disease, or systemic connective tissue disease. Uncorrected visual acuity (UCVA) was 0.09 in the right eye and 0.8 in the left eye. The best spectacle-corrected visual acuity (BSCVA) was 0.2 in the right eye and 1.0 in the left eye. An impression of slight corneal protrusion on both sides, one Vogt's stretch mark is visible paracentrally on the left. Central pachymetry was 422  $\mu\text{m}$  in the right eye (OD) and 468  $\mu\text{m}$  in the left eye (OS). Topography showed inferior bilateral thinning. The recommended treatment was CXL with riboflavin and UV

A to stabilize the cornea. The patient underwent a thorough discussion of the risks and benefits of CXL with the surgeon and signed a written informed consent in accordance with institutional guidelines based on the Declaration of Helsinki

**Results:**

On the first day, the postoperative findings were normal. On the fifth postoperative day, slow re-epithelialization was observed and the patient had a central dendritic epithelial defect. Local therapy included acyclovir in the form of ointment, continued antibiotic therapy, and oral therapy with acyclovir and vitamin B. Several subconjunctival injections Dexamethasone were applied to the patient. Topical corticosteroid drops were continued after healing of the epithelial defect. All medications were gradually decreased over the following weeks. Three months later, a central Vogt's striae was found, the rest of the ophthalmological status was normal. In therapy, maintenance oral therapy 1 tablet per day and corticosteroid 1x and artificial tears without preservatives 5-6x. With regard to the best visual acuity with the correction of glasses, 0,2-0,3 we are planning to prescribe RK2 contact lenses.

**Conclusion:**

Herpetic keratitis can be induced by CXL, even in cases with no history of herpetic eye disease, but the patient states that he had it on his lip.

Primary HSV keratitis often presents as a nonspecific upper respiratory tract infection and is reco

gnized as HSV <5% of the time. Latent infection of the trigeminal ganglion may occur in the absence of a recognized primary infection, with reactivation occurring later as recurrent HSV infection in any branch of the trigeminal nerve.

Careful follow-

up of patients after CXL seems to be important because early diagnosis and proper treatment can facilitate successful treatment of herpetic epithelial keratitis and prevent further possible consequences.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJAU ZA KONTAKTOLOGIJU / Contactology section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ivana

**Ime i prezime / First and Last Name:-Last**

Radman

## 58. Štanfel Marija

**Naslov:**

Kirurgija makularne rupe, VIDEO

**Autori:**

Štanfel M, Jukić T, Mandić K.

**Ustanova:**

Klinika za očne bolesti, KBC Zagreb

**Cilj:**

Prikazati operaciju makularne rupe korištenjem presatka humane amnionske membrane.

**Bolesnici i metode:**

Video prezentacija.

**Rezultati:**

Jedan od izazova vitreoretinalne kirurgije je uspješno kirurško zatvaranje makularne rupe, u koju se svrhu ponekad koriste različite "zakrpe", jedna od kojih je u posljednjih nekoliko godina bila i humana amnionska membrana. Iskustva s plasmanom navedene membrane u makularnu rupu sažeta su u videu koji planiram prezentirati.

**Zaključak:**

Humana amnionska membrana materijal je pomoću kojega se uspješno može zatvoriti makularna rupa, uz varijabilne funkcionalne rezultate.

**Title:**

Macular hole surgery, VIDEO

**Authors:**

Štanfel M, Jukić T, Mandić K.

**Institution:**

Department of Ophthalmology, UHC Zagreb

**Aim:**

To show macular hole surgery using human amniotic membrane as patch.

**Patients and methods:**

Video presentation.

**Results:**

One of challenges of vitreoretinal surgery is successful closing of macular hole, for which purpose different materials were used, among them human amniotic membrane. Experience with placing said membrane in macular hole are put in video I am planning to show.

**Conclusion:**

Human amniotic membrane is material for successful closure of macular hole, with varying functional results.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Marija

**Ime i prezime / First and Last Name:-Last**

Štanfel

## 59. Bosnar Damir

**Naslov:**

Minimalno invazivna reparacija iridodijalize – double-flange riveting tehnika

**Autori:**

Bosnar D., Pavlović I., Bušić M., Bjeloš M., Kuzmanović Elabjer B., Knežić Zagorec M.

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb; Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J.J. Strossmayera u Osijeku; Referentni centar Ministarstva zdravstva za dječju oftalmologiju i strabizam; Referentni centar Ministarstva zdravstva za nasljedne distrofije mrežnice.

**Cilj:**

Prikaz nove modifikacije tehnike kirurške reparacije iridodijalize.

**Bolesnici i metode:**

Muškarac u dobi od 38 godina s anamnezom eksplozivne ozljede desnoga oka 21 godinu prije pregleda u našoj ustanovi javlja se s tegobama smanjene vidne oštine i fotofobije. Kliničkim pregledom zabilježena je najbolja korigirana vidna oština desnog oka od 0,2 [Snellen, dec], nepravilna zjenica, velika superiorna iridodijaliza, posttraumatska katarakta s fibrozom prednje kapsule leće i iridofakodoneza. Indicirana je operacija katarakte i kirurška reparacija iridodijalize.

**Rezultati:**

Nakon nekomplikirane fakoemulzifikacije katarakte, kauterizacijom niske temperature na slobodnom kraju 7-

0 polipropilen polietilen šava stvoren je obod (eng. flange). Šav je proveden kroz periferni dio odvojene šarenice i eksternaliziran transskleralno i transkonjunktivalno 2 mm posteriorno od limbusa. Po optimizaciji tenzije napravljen je vanjski obod finalne subkonjunktivalne lokalizacije. Istom tehnikom postavljena su sveukupno 3 šava dok nije postignut zadovoljavajući anatomski rezultat.

**Zaključak:**

Double flange riveting tehnika reparacije iridodijalize ranije je opisana uz upotrebu 6-0 polipropilenskih šava i uključivala je peritomiju konjunktive. Prikazana nova modifikacija tehnike minimalno invazivnom reparacijom izbjegava formiranje peritomije i maksimalno čuva tkivo konjunktive. Upotreba polipropilenskih polietilenskih šava osigurava dugotrajnu tenzilnu snagu uz jednostavnije rukovanje u usporedbi s polipropilenskim šavima.

**Title:**

Minimally invasive iridodialysis repair – double-flange riveting technique

**Authors:**

Bosnar D., Pavlović I., Bušić M., Bjeloš M., Kuzmanović Elabjer B., Knežić Zagorec M.

**Institution:**

University Eye Department, University Hospital “Sveti Duh“, Zagreb; Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek; Reference Centre of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strabismus; Reference Centre of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To report a new modification of a surgical technique for iridodialysis repair.

**Patients and methods:**

A 38-year-

old male, with a history of explosive right eye injury 21 years earlier, was referred to our Department because of declined visual acuity and photophobia. The best corrected visual acuity of the right eye was 0.2 [Snellen, dec]. Pupil irregularity, large superior iridodialysis, traumatic cataract with anterior capsular fibrosis, and iridophacodonesis were noted during a clinical examination. Cataract surgery with surgical iridodialysis repair was indicated.

**Results:**

After uneventful cataract phacoemulsification, a flange was created with low-temperature cautery on the free edge of a 7-0 polypropylene polyethylene suture. The suture needle was driven through the peripheral part of the separated iris and externalized through the sclera and conjunctiva, 2 mm posterior to the limbus. After tension optimization, an external flange was created, which was placed under the conjunctiva. Three sutures were placed in total using the same technique until a satisfactory anatomical result was accomplished.

**Conclusion:**

Double flange riveting technique for iridodialysis repair was described earlier using 6-0 polypropylene sutures and it included conjunctival peritomy. The modified minimally invasive technique presented here avoids the creation of a peritomy and preserves conjunctival tissue maximally. Polypropylene polyethylene sutures enable longstanding tensile strength and simpler handling in comparison to polypropylene sutures.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Damir

**Ime i prezime / First and Last Name:-Last**

Bosnar

## 60. Kristina Ružić

**Naslov:**

Trogodišnje praćenje pacijenata sa sumnjom na glaukom

**Autori:**

Kristina Ružić, Bojan Gabrovec, Marino Benazić

**Ustanova:**

Opća bolnica Pula

**Cilj:**

Prikazati rezultate trogodišnjeg praćenja pacijenata sa sumnjom na glaukom do postavljanja dijagnoze

**Bolesnici i metode:**

U roku od tri godine praćena je grupa od 100 pacijenata. Ulazni kriteriji za rad bili su IOT barem jednog oka jednak ili veći od 21mmg, C/D 0.3 ili više, razlika IOT D/L 5 mmHg ili više, razlika C/D D/L 0.2 ili više, prisutnost PEX sindroma utvrđeni oftalmološkim pregledom. Slijedili su pregled vidnog polja u G2 programu, SOCT papila i makula i pahimetrija. Po učinjenim nalazima, pacijenti su upućeni u Ambulantu za glaukom na daljnu evaluaciju. Ovisno o odazivu pacijenata, vršeni su kontrolni pregledi i ponavljane dijagnostičke procedure. Na temelju dobivenih podataka, postavljane su radne i/ili završne dijagnoze i dane daljnje preporuke pacijentima.

**Rezultati:**

u izradi

**Zaključak:**

Koristeći dobivene podatke, pokušat ćemo prikazati do koji su nas završnih dijagnoza dovele standardne dijagnostičke procedure kod pacijenata s ranije navedenim kriterijima za praćenje.

**Title:**

Three years follow up of the patients suspected of having glaucoma

**Authors:**

Kristina Ružić, Bojan Gabrovec, Marino Benazić

**Institution:**

General hospital Pula

**Aim:**

To present results of three years follow up of the patients suspected of having glaucoma until final diagnosis has been established

**Patients and methods:**

In the period of three years a group of 100 patients has been gathered and referred to ocular examination. They have been chosen by meeting at least one of the five following criteria: IOP 21mmHg or more at least on one eye, C/D 0.3 or more, difference of measured IOP R/L at least 5mmHg, difference of C/D R/L 0.2 or more, presence of PEX sy. Performed: visual field testing in G2 program, SOCT of optic disc and macula and pachimetry. Examined patients have been referred to glaucoma office for complete and control ocular examination and further evaluation. Either working or final diagnosis has been established and further recommendations have been given.

**Results:**

in process



**Conclusion:**

Using the obtained results, we would like to inform you of the final diagnosis which have been established using standard diagnostic procedures on chosen patients.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Kristina

**Ime i prezime / First and Last Name:-Last**

Ružić

## 61. Anđela Jukić

**Naslov:**

Prevenција PCME kod pacijenata s NPDR

**Autori:**

Anđela Jukić; Rajka Kasalica Žužul, Josip Pavan, Tomislav Jukić, Miro Kalauz

**Ustanova:**

Klinička Bolnica Dubrava; Klinički Bolnički Centar Zagreb, Rebro

**Cilj:**

Usporediti učinke topičkih lijekova na intraokularnu koncentraciju IL-6 te na prevenciju PCME-a kod pacijenata s NPDR

**Bolesnici i metode:**

90 pacijenata sa kataraktom i blagom i umjerenom NPDR koji su naručeni na operaciju katarakte su podijeljeni u tri skuine. Grupa 1 je primala topički bromfenak, druga grupa topički deksametazon, a treća grupa topički placebo, 7 dana prije i tri tjedna nakon operacije katarakte. Sve tri grupe su dobile antibiotik i kortikosteroid u kapima tri tjedna postoperativno. Na dan operacije uzeti su uzorci očne vodice radi analize intraokularnog IL-6. Svi pacijenti su prilikom svakog posjeta (-7,0,1,7,30 i 90) bili podvrgnuti potpunom oftalmološkom pregledu sa mjerenjem CFT uz pomoć OCT-a.

**Rezultati:**

Rezultati su pokazali da nije bilo statistički značajne razlike u koncentraciji IL-6 među skupinama. Primjećena je statistički značajna korelacija između razine IL-6 i postoperativne CFT u skupini pacijenata koji su primali topički deskametazon. CFT je bio statistički značajno niži u skupini pacijenata koji su primali topički deksametazon u odnosu na placebo skupinu. Razlike između ostalih skupina nisu bile statistički značajne.

**Zaključak:**

Topički bromfenak i topički deksametazon nemaju značajan učinak na koncentraciju intraokularnog IL-6 kod pacijenata s NPDR. Topički deksametazon je učinkovitiji od topičkog bromfenaka u smanjenju incidencije PCME kod pacijenata s NPDR.

**Title:**

PCME prevention in patients with NPDR

**Authors:**

Anđela Jukić, Rajka Kasalica Žužul, Josip Pavan, Tomislav Jukić, Miro Kalauz

**Institution:**

Clinical Hospital Dubrava; Clinical Hospital Centre Zagreb, Rebro

**Aim:**

To determine the effect of topical medicines on intraocular concentration of IL-6 and on incidence of PCME in patients with NPDR

**Patients and methods:**

90 patients with cataract and mild-to-moderate NPDR that underwent phacoemulsification cataract surgery were divided into three groups. Group 1 received topical bromfenac, group 2 dexamethasone, and group 3 placebo both p

reoperatively and postoperatively. Additionally, all patients received combined topical steroid and antibiotic drops 3 weeks postoperatively. On the day of the surgery, aqueous humour samples were obtained and IL-6 concentrations were analysed. CFT was measured using SD-OCT was analysed preoperatively and postoperatively.

**Results:**

There was no significant difference in IL-6 concentrations between groups. The correlation between IL-6 and CFT was statistically significant in the dexamethasone group. Postoperative CFT was significantly lower in the dexamethasone group compared to the placebo group. Differences in CFT between other groups were not statistically significant.

**Conclusion:**

Topical bromfenac and topical dexamethasone have no significant effect on intraocular IL-6 concentration in patients with NPDR. Topical dexamethasone is more effective than topical bromfenac in preventing PCME in patients with NPDR.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Anđela

**Ime i prezime / First and Last Name:-Last**

Jukić

## 62. Batistić Darko

**Naslov:**

Retinotomija 180°

**Autori:**

Batistic D, Bucan K, Znaor Lj, Siničić A

**Ustanova:**

Klinički bolnički centar Split

**Cilj:**

Prikazati kiruršku tehniku retinotomije 180 stupnjeva kao intravitrealnu tehniku priljevanja skraćene retine.

**Bolesnici i metode:**

5 pacijenata sa indikacijom za donju retinotomiju u cirkumferenciji od 180 stupnjeva je liječeno pars plana vitrektomijom. Nakon ljuštenja epiretinalnih proliferacija periferna retina je izrezana paralelno sa ora serrata a rubovi retinotomije su tretirani laserom kako bi se retina stabilizirala na očnoj pozadini. Potom je retina taponirana injekcijom silikonskog ulja u oku koje je bilo ispunjeno zrakom.

**Rezultati:**

Svih 5 pacijenata imalo je prilježu retinu dan nakon operacije te nakon evakuacije silikonskog ulja iz oka.

**Zaključak:**

Ako je izvedena pravilno retinotomija 180 stupnjeva iako kirurški zahtjevnija zbog mogućih komplikacija u odnosu na indentacijsku kirurgiju je uspješna metoda za liječenje odignute skraćene mrežnice.

**Title:**

180° retinotomy

**Authors:**

Batistic D, Bucan K, Znaor Lj, Sinicic A.

**Institution:**

Clinical Hospital Centre Split

**Aim:**

To present the surgical technique of retinotomy 180 degrees as an intravitreal technique for attaching a shortened retina.

**Patients and methods:**

5 patients with an indication for lower retinotomy in a circumference of 180 degrees were treated with pars plana vitrectomy. After exfoliation of the epiretinal proliferations, the peripheral retina was cut parallel to the ora serrata and the edges of the retinotomy were treated with a laser to stabilize the retina on the background of the eye. The retina was then tamponed by injecting silicone oil into the eye, which was filled with air.

**Results:**

All 5 patients had an attached retina the day after surgery and after evacuation of silicone oil from the eye.

**Conclusion:**

If performed correctly, 180-degree retinotomy, although surgically more demanding due to possible complications compared to indentation surgery, is a successful method for treating a raised, shortened retina.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Darko

**Ime i prezime / First and Last Name:-Last**

Batistić

### 63. Borjan Ivan

**Naslov:**

Otvorene ozljede oka: Karakteristike i prognostička vrijednost Ocular Trauma Score-a u predviđanju konačne vidne oštine

**Autori:**

Borjan Ivan, Stanić Robert, Pleština-Borjan Ivna, Bućan Kajo

**Ustanova:**

Klinika za očne bolesti, KBC Split

**Cilj:**

Analizirati karakteristike otvorenih ozljeda oka (eng. ocular globe injury, OGI) i procijeniti prognostičku vrijednost Ocular Trauma Score-a (OTS-a) u predviđanju konačnog funkcionalnog ishoda.

**Bolesnici i metode:**

Otvorene ozljede oka retrospektivno su analizirane u 56 bolesnika upućenih u Kliniku za očne bolesti KBC-a Split, između siječnja 2020. i siječnja 2023. godine. Iz elektronske medicinske dokumentacije prikupljeni su podaci o dobi, spolu, vrsti ozljede, lokalizaciji rane i prisutnosti stranog tijela, vremenu proteklom od ozljede do hospitalizacije, početnoj (predoperativnoj) i konačnoj vidnoj oštini (nakon 6 mjeseci), kirurškom liječenju i drugim čimbenicima koji pridonose konačnom funkcionalnom ishodu (prisutnost RAPD-a, endoftalmitisa i odignuća mrežnice). Bolesnici s nepotpunim podacima isključeni su iz studije. Ozljede otvorenog oka klasificirane su i stupnjevane prema Birmingham Eye Trauma Terminology. OTS sustav je korišten za predviđanje vidnog ishoda kod svih pacijenata. OTS je izračunat prema smjernicama Međunarodne grupe za klasifikaciju traume oka. Bolesnici su praćeni najmanje 6 mjeseci nakon primarnog kirurškog zbrinjavanja, kako bi se usporedio predviđeni (predviđen OTS-om) i konačni vidni ishod. Podaci su analizirani korištenjem statističkog paketa SPSS 24.0 (IBM Corp, Armonk, NY, USA). Rezultati su interpretirani na razini statističke značajnosti  $p < 0,05$ .

**Rezultati:**

U istraživanje je uključeno ukupno 56 bolesnika s OGI-om, prosječne životne dobi 45 ( $\pm 18$ ) godina. Muškaraca je bilo 6 puta više nego žena. Najveći broj bolesnika (68%) hospitaliziran je i primarno kirurški zbrinut unutar 6 sati od ozljeđivanja. Većina ozljeda (88%) dogodila se tijekom slobodnog vremena. Ozljede su najčešće bile lokalizirane u zoni 2 - u 26 (46%) bolesnika. Najčešća vrsta ozljeda bile su penetrantne ozljede (52%). Ruptura bulbusa, kao najteži oblik otvorenih ozljeda oka, bila je zastupljena je u 29% bolesnika. Stražnji segment je bio zahvaćen u 27 (48%) bolesnika. Početnu vidnu oštrinu jednaku ili bolju od 0,5 imalo je 27% bolesnika, a 13% ih nije imalo niti osjet svijetla (L-). Najčešća OTS kategorija bila je kategorija 3 (27%). Tijekom primarnog zbrinjavanja ozljeda, u 6 bolesnika izvršena je operacija mrežnice, a u 2 bolesnika pars plana vitrektomija (PPV). U vremenu praćenja 6 bolesnika podvrgnuto je naknadnoj operaciji mrežnice, a 5 bolesnika je liječeno sekundarnim postupkom PPV-a zbog intraokularnih stranih tijela, odignuća mrežnice, luksirane leće ili hemoftalmusa. U 2 bolesnika razvio se endoftalmitis zbog čega je jedno oko zahtijevalo evisceraciju. U 15 (27%) bolesnika

konačna vidna oštrina iznosila je 0,5 ili više. Najlošija konačna vidna oštrina (L-) najčešće je zabilježena u pacijenata s rupturom bulbusa (38%). Konačna vidna oštrina bila je u skladu s predviđenom vidnom oštrinom izračunatom pomoću OTS-a.

#### **Zaključak:**

Istraživanje je pokazalo da su najvažniji čimbenici u prognozi konačne vidne oštrine u otvorenim ozljedama oka: prije operacijska vidna oštrina, lokalizacija i opseg rane, vrsta ozljede te adekvatno i pravovremeno kirurško liječenje u specijaliziranim ustanovama s iskusnim kirurzima. Rezultati ovog istraživanja pokazali su da je OTS pouzdani prediktor konačnog vidnog ishoda.

#### **Title:**

Open Globe Injuries: Characteristics and Prognostic Value of the Ocular Trauma Score in Predicting the Final Visual Outcome

#### **Authors:**

Borjan Ivan, Stanić Robert, Pleština-Borjan Ivna, Bućan Kajo

#### **Institution:**

Department of Ophthalmology, University Hospital Centre Split

#### **Aim:**

To analyse the characteristics of open globe injuries (OGI) and to evaluate the prognostic value of the Ocular Trauma Score (OTS) in predicting final visual outcome.

#### **Patients and methods:**

The study retrospectively reviewed OGI in 56 patients referred to the Eye Clinic, Clinical Hospital Centre Split, between January 2020 and January 2023. Data regarding age, sex, injury type, localization of wounds and presence of the foreign body, admission time, initial (preoperative) and final (after 6 months) visual acuity, surgical management and other factors contributing to the visual outcome (presence of RAPD, endophthalmitis and retinal detachment) were recorded. The patients with incomplete data were excluded. Open globe injuries were classified and graded according to the Birmingham Eye Trauma Terminology. The OTS system was used to predict the visual outcome in all patients. The OTS was calculated according to the International Ocular Trauma Classification Group Guidelines. Follow-up was done at least 6 months after primary surgical treatment to compare the predicted (by OTS) and final visual outcome. The statistical analysis was performed by SPSS 24.0 (IBM Corp, Armonk, NY, USA) package with statistical significance set to  $p < 0.05$ .

#### **Results:**

A total of 56 patients with OGI were included in the study. The average age was 45 ( $\pm 18$ ) years. There were 48 (86%) males and 8 (14%) females. Most of the patients (68%) were admitted to the hospital and treated within 6 hours after the injury. Most of the injuries (88%) occurred during leisure time. The injuries were most often located in zone 2 (46%). Penetrating injuries were found to be the most frequent type of injury (52%). Globe rupture, as the most serious OGI, was present in 16 (29%) patients. The posterior segment was affected in 27 (48%) patients. The initial visual acuity equal to or better than 0.5 was found in 27% of patients and NLP in 13% of patients. The most common OTS category was category 3 (27%). Cataract surgery was performed in combination with primary wound repair in 6 patients, and pars plana vitrectomy (PPV) in 2 patients. During the follow-up time, 7 patients underwent secondary cataract surgery and 5 patients were treated with a secondary PPV procedure because of intraocular foreign bodies, retinal detachment, lens luxation or hemophthalmus. Endophthalmitis was developed in 2 patients, and despite maximal treatment,

one eye required evisceration. In 15 (27%) patients the final visual acuity reached 0.5 or better. The worst final visual acuity (NLP) was most commonly experienced in patients with globe rupture (38%). The final visual results were compatible with predicted visual outcome by OTS.

**Conclusion:**

The study showed that the most important factors in the prognosis of final visual acuity in OGI were preoperative visual acuity, localization and extent of the wound, type of injuries and appropriate, timely surgical treatment in specialized institutions with experienced surgeons. According to the results of this study, OTS proved to be a reliable predictor of the final visual outcome.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ivan

**Ime i prezime / First and Last Name:-Last**

Borjan



## 64. Kabić Šime

**Naslov:**

Atipična reaktivna limfoidna hiperplazija konjunktive vs. pedijatrijski tip folikularnog limfoma konjunktive

**Autori:**

Kabić, Š; Lešin, M; Dukić, JJ; Olujić, I; Bućan K

**Ustanova:**

Klinika za očne bolesti – Klinički Bolnički Centar Split

**Cilj:**

Cilj ovog prikaza slučaja je bio prikazati pacijenta sa suspektnim pedijatrijskim tipom folikularnog limfoma spojnice

**Bolesnici i metode:**

Pacijent je dječak star 16 godina. Hospitalizira se na Kliniku za očne bolesti zbog tvorbe spojnice desnog oka. Biomikroskopskim pregledom desnog oka nalazimo pomičnu tvorbu bulbarne spojnice u medijalnom dijelu do plike semilunaris, veličine cca 1x1 cm, koja onemogućava zatvaranje vjeđa te u manjem dijelu ima keratiniziran epitel. Učinjena je ekscizija promjene, PHD nalaz te molekularno određivanje klonalnosti B limfocita. Nakon tri mjeseca kliničkim pregledom se nalazi slična promjena spojnice na lijevom oku te recidiv na desnom oku. Ponovno je urađena ekscizija promjena obostrano s PHD nalazom.

**Rezultati:**

PHD nalaz upućuje da diferencijalno-dijagnostički u obzir dolazi atipična reaktivna limfoidna hiperplazija, ali i pedijatrijski tip folikularnog limfoma. Materijal je poslan na PCR analizu klonalnosti B-stanica. Morfološki i imunohistokemijski nalaz u prvom redu odgovara floridnoj, atipičnoj reaktivnoj hiperplaziji. Iako je nalaz suspektan na pedijatrijski tip folikularnog limfoma (PTFL) nema dovoljno elemenata za definitivnu dijagnozu. Predložene su hematološka obrada i kontrole.

**Zaključak:**

Pacijent se aktualno vodi pod dijagnozom atipične reaktivne hiperplazije spojnice oka obostrano. Obavezne su učestale kontrole hemoto-onkološkog pedijatrijskog tima te oftalmologa.

**Title:**

Atypical reactive lymphoid hyperplasia of the conjunctiva vs. pediatric type of conjunctival follicular lymphoma

**Authors:**

Kabić, Š; Lešin, M; Dukić, JJ; Olujić, I; Bućan K

**Institution:**

Clinic for eye diseases - Clinical Hospital Center Split

**Aim:**

The objective of this case report was to present a patient with a suspected pediatric type of conjunctival follicular lymphoma

**Patients and methods:**

The patient is a 16-year-old boy. He is hospitalized at the Clinic for Eye Diseases due to a change of the conjunctiva of the

right eye. A biomicroscopic examination of the right eye reveals a movable formation of the bulbar conjunctiva in the medial part up to the plica semilunaris, approx. 1x1 cm in size, making it impossible to close the eyelids, with keratinized epithelium in a smaller portion. Excision of the change, PHD analysis and molecular determination of B lymphocyte clonality were performed. After three months, a clinical examination revealed a similar conjunctival change in the left eye and a recurrence in the right eye. Repeated excision of the changes was performed on both sides, along with PHD analysis.

**Results:**

The PHD finding suggests that atypical reactive lymphoid hyperplasia, but also the pediatric type of follicular lymphoma, should be considered in the differential diagnosis. The material was sent for PCR analysis of B-cell clonality. Morphological and immunohistochemical findings primarily correspond to florid, atypical reactive hyperplasia. Although the findings are suspicious for pediatric follicular lymphoma (PTFL), there are not enough elements for a definitive diagnosis. Hematological work-up and controls are suggested.

**Conclusion:**

The patient is currently managed under the diagnosis of bilateral atypical reactive conjunctival hyperplasia. Frequent controls by the hematology pediatric team and the ophthalmologist are mandatory.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Šime

**Ime i prezime / First and Last Name:-Last**

Kabić

## 65. Vukojević Ante

**Naslov:**

Što nam govori preoperativna veličina zjenice?

**Autori:**

Vukojević A, Kasumović A, Petric Vicković I, Lacmanović Lončar V, Vatavuk Z

**Ustanova:**

Klinika za očne bolesti, KBC Sestre milosrdnice

**Cilj:**

Analizirati preoperativnu širinu zjenice kod pacijenata upućenih na operativni zahvat katarakte.

**Bolesnici i metode:**

Analizirani su pacijenti koji su podvrgnuti operaciji katarakte u Klinici „Sestre Milosrdnice“ u razdoblju od travnja do prosinca 2022. godine. Skupljeni su i analizirani podatci o spolu, dobi, oftalmološkim bolestima, sustavnim bolestima i kroničnoj terapiji. Pacijentima su lokalno primjenjeni 0.5 % tropikamid i 5% fenilefrin, nakon čega je izmjerena širina zjenice, te su pacijenti podvrgnuti zahvatu fakoemulzifikacije s implantacijom intraokularne leće. Za vrijeme operacije oči koje su razvile IFIS identificirane su i klasificirane prema kriterijima koje su opisali Chang i Campbell.

**Rezultati:**

Provedena je analiza na 488 očiju. Kod više od polovice pacijenata (54%) ustanovljen je DM2, dok je HA imalo oko 48% pacijenata. 8.2% pacijenata imalo je BHP. IFIS je identificiran u 12% pacijenata, od čega je 21.6% bilo gradusa I, 51.6% gradusa II, te 26.6% gradusa III. Kod pacijenata koji nisu razvili IFIS veličina zjenice bila je  $7.8 \pm 3.3$  mm. Kod pacijenata s IFIS-om veličina zjenice bila je statistički uža ( $6.1 \pm 1.5$  mm).

**Zaključak:**

Pacijenti s preoperativno užom zjenicom imaju veći rizik za razvoj IFIS-a.

**Title:**

What does preoperative pupil size tell us?

**Authors:**

Vukojević A, Kasumović A, Petric Vicković I, Lacmanović Lončar V, Vatavuk Z

**Institution:**

Department of Ophthalmology, Sestre milosrdnice University Hospital Center.

**Aim:**

To analyze preoperative dilated pupil size in patients undergoing cataract surgery.

**Patients and methods:**

We analyzed patients who underwent cataract surgery at University clinic „Sestre Milosrdnice“ performed between April 2022 and December 2022. Following data were analyzed: sex, age, ophthalmological conditions, systemic disease, medications being taken at the time of surgery and preoperative dilated pupil size. After dilatation with tropicamide 0.5% and phenylephrine hydrochloride 5% drops a phacoemulsification with intraocular lens implantation was performed. At the time of surgery eyes with IFIS were identified using the criteria of Chang and Campbell.

**Results:**

A total of 488 eyes were enrolled in the study and all patients underwent uncomplicated cataract surgery. Hypertension and diabetes mellitus were two common diseases, more than half of the p

patients (54%) were diagnosed with diabetes mellitus, while 48% were diagnosed with hypertension. BPH affected 8.2% of patients. IFIS was observed in 12% eyes, 21.6% had an IFIS grade 1, 51.6% had an IFIS grade 2 and 26.6% had a full IFIS. The pupil size was  $7.8 \pm 3.3$  mm in non-IFIS patients. IFIS patients had statistically narrower pupil size ( $6.1 \pm 1.5$  mm).

**Conclusion:**

Patients with a decreased dilated pupil diameter preoperatively had a higher risk of IFIS development.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ante

**Ime i prezime / First and Last Name:-Last**

Vukojevic

## 66. Jakov Ivanišin

**Naslov:**

CSCR - krivi smjer?

**Autori:**

Jakov Ivanišin, Vlatka Brzović Šarić

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J.J. Strossmayera u Osijeku Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice

**Cilj:**

Kroz prikaz kliničkog slučaja istaknuti važnost multimodalne dijagnostike u evaluaciji eksudativne makulopatije

**Bolesnici i metode:**

69-

godišnja pacijentica dolazi u ambulantu za stražnji segment oka upućena od nadležnog oftalmologa pod dijagnozom centralne serozne kororetinopatije na desnom oku. Liječena je kroz 2 mjeseca Yellox kapljicama i Diamox tbl. 2x1/dan. Negira ranije teže očne bolesti. Pri dolasku učini se kompletna oftalmološki pregled. Najbolje korigirana vidna oštrina na desnom oku prema Snellenu iznosila je 0.2, a na lijevom oku 1.0. Nalaz prednjeg segmenta obostrano je bio uredan. Pregledom očne pozadine desnog oka uočila se makula edem uz TLE. Učini se multimodalna dijagnostika: OCT makule, OCT angiografija, FAF, FA, te ICGA.

**Rezultati:**

Temeljem kliničke slike i učinjene dijagnostičke obrade postavlja se dijagnoza polipoidne koroidalne vaskulopatije te se započne s intravitrealnom anti-VEGF terapijom.

**Zaključak:**

Prikazani slučaj ističe važnost multimodalne dijagnostike u diferencijalnoj dijagnostici eksudativne makulopatije. U evaluaciji CSCR-a i PCV-

a, FA neće jasno diferencirati polipoidne koroidalne vaskularne lezije od CNV-a i defekata RPE-a. OCT-

A i/ili ICGA su superiornije dijagnostičke metode u detekciji karakterističnih polipoidnih lezija, što jasno prikazuje ovaj klinički slučaj, koji je od samog početka bio krivo dijagnosticiran i terapijski tretiran.

**Title:**

CSCR – wrong direction?

**Authors:**

Jakov Ivanišin, Vlatka Brzović Šarić

**Institution:**

University Eye Department, University Hospital “Sveti Duh”, Zagreb, Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek Reference center of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strab

ismus Reference center of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To emphasize the importance of multimodal imaging in the evaluation of exudative maculopathy through a case study

**Patients and methods:**

69-

year old patient came to our retinal clinic referred by her ophthalmologist under the diagnosis of central serous chorioretinopathy of the right eye. She was treated with Yellox drops and Diamox tablets b.i.d. over a period of 2 months. She denied having previous eye conditions. A complete ophthalmologic exam was performed. Best corrected visual acuity was 0.2 on the right eye, and 1.0 on the left eye (Snellen charts). Slit lamp examination of the anterior segment of both eyes showed no pathological findings. Fundus examination of the right eye showed macular oedema and hard exudates. Multimodal imaging was performed: macular OCT, OCT angiography, FAF, FA, and ICGA.

**Results:**

Based on clinical features and findings of the multimodal imaging, polypoidal choroidal vasculopathy was diagnosed and intravitreal anti-VEGF therapy was introduced.

**Conclusion:**

This case study emphasizes the importance of multimodal imaging in differential diagnosis of exudative maculopathy. In the evaluation of CSCR and PCV, FA alone will not clearly differentiate polypoidal vascular lesions from CNV and RPE defects. This case, which has been falsely diagnosed and treated from the very beginning, shows that OCT-

A and/or ICGA are superior diagnostic methods in the detection of characteristic polypoidal lesions.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Jakov

**Ime i prezime / First and Last Name:-Last**

Ivanišin

## 67. Ana Vučinović

**Naslov:**

Karakteristike i liječenje retinopatije nedonošćadi u KBC Split tijekom 2022. godine

**Autori:**

Ana Vučinović, Žana Ljubić, Željana Matutnović Odak, Kajo Bućan

**Ustanova:**

Klinički bolnički centar Split

**Cilj:**

Cilj ovog istraživanja bio je opisati karakteristike retinopatije nedonošćadi liječene u KBC Split tijekom 2022.g.

**Bolesnici i metode:**

U ovo retrospektivno opservacijsko istraživanje uključena su nedonošćad liječena na Odjelu za neonatologiju Klinike za ženske bolesti i porode KBC Split u razdoblju od 1.siječnja 2022 do 1.siječnja 2023.g. koja su imala indikaciju za oftalmološko praćenje zbog rizika razvoja retinopatije nedonošćadi. U istraživanje je uključeno ukupno 213 bolesnika s porodnom masom ispod 1500g ili gestacijskom dobi ispod 31 GT ili porodnom masom iznad 1500g i gestacijskom dobi iznad 31 GT ukoliko je postojao nestabilan klinički tijek ili loše opće stanje djeteta. Analizirani su podaci o spolu, dobi, oksigenoterapiji i ostalim rizičnim čimbenicima za razvoj retinopatije. Istraživanje je provedeno u skladu s Deklaracijom iz Helsinkija.

**Rezultati:**

Ukupni broj pregledane nedonošćadi bio je 213 od kojih je 25 bolesnika(11,7%) imalo bilo koji stadij retinopatije. 15 bolesnika (60% od svih bolesnika s retinopatijom) je primilo anti VEGF terapiju. Incidencija retinopatije bila je 11,7%. Incidencija retinopatije tip 1 bila je 7,0%, a tip 2 15,6%. Svi bolesnici liječeni su antiVEGF injekcijama ranibizumabom, od čega je dvoje bolesnika primilo anti VEGF dva puta a jedan bolesnik tri puta, dok je kod ostalih nastupila regresija nakon prve injekcije. Sva tri pacijenta koji su u više navrata primili anti VEGF imali su osobito težak klinički tijek.

**Zaključak:**

Ovim istraživanjem prikazali smo epidemiološku situaciju na razini KBC Split tijekom 2022.g., te učestalost razvoja pojedinog stupnja retinopatije nedonošćadi, njenu kliničku sliku i tijek bolesti s posebnim naglaskom na najteže bolesnike.

**Title:**

Characteristics and treatment of retinopathy of prematurity in University Hospital Split in 2022.

**Authors:**

Ana Vučinović, Žana Ljubić, Bruno Markioli, Kajo Bućan

**Institution:**

University Hospital Split

**Aim:**

The aim of this study was to describe the characteristics of retinopathy of prematurity in University Hospital Split in 2022.

**Patients and methods:**

This retrospective observational study included preterm infants treated at the Department of Neonatology of the Clinic for Women's Diseases and Childbirth, KBC Split in the period from January

1, 2022 to January 1, 2023. who had an indication for ophthalmological monitoring due to the risk of developing retinopathy of prematurity. A total of 213 patients were included in the study with a birth weight below 1500g or a gestational age below 31 GT or a birth weight above 1500g and a gestational age above 31 GT if there was an unstable clinical course or poor general condition of the child. Data on gender, age, oxygen therapy and other risk factors for the development of retinopathy were analyzed. The research was conducted in accordance with the Declaration of Helsinki.

**Results:**

The total number of examined premature infants was 213, of which 25 patients (11.7%) had any stage of retinopathy. 15 patients (60% of all patients with retinopathy) received anti-VEGF therapy. The incidence of retinopathy was 11.7%. The incidence of retinopathy type 1 was 7.0%, and type 2 was 15.6%. All patients were treated with anti-VEGF injections of ranibizumab, of which two patients received anti-VEGF twice and one patient three times, while the others experienced regression after the first injection. All three patients who received anti-VEGF on several occasions had a particularly difficult clinical course.

**Conclusion:**

With this research, we presented the epidemiological situation at the KBC Split level during 2022, as well as the frequency of development of a particular stage of retinopathy of prematurity, its clinical picture and the course of the disease with special emphasis on the most severe patients.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Ana

**Ime i prezime / First and Last Name:-Last**

Vučinović



## 68. Irena Marković

**Naslov:**

Dvoslike i alergijska polipoza sinusa – novi terapijski pristup (prikaz slučaja)

**Autori:**

Irena Marković, Antonela Gverović Antunica, Diana Bućan , Helena Kaštelan, Dragutin Petković

**Ustanova:**

Klinika za Očne bolesti KBC Split, Odjel za oftalmologiju Opća bolnica Dubrovnik, Specijalistička ordinacija medicine rada Diana Bućan, Odjel za otorinolaringologiju Opća bolnica Dubrovnik

**Cilj:**

Prikazati pacijenta s alergijskom polipozom sinusa i novu terapiju anti IL-5 (Nucala )

**Bolesnici i metode:**

-

**Rezultati:**

63. godišnji pacijent je prije 17 godina razvio dvoslike. Učinjenom kliničkom i radiološkom obradom nađena je polipoza sinusa. Iz anamneze od djetinjstva alergičan na perje, cvijet masline i drijenak.

Urađena operacija sinusa dva puta endoskopska i jedanput klasična, ali uz pojavu recidiva polipa i ponovne pojave dvoslika.

Imunološka obrada na klinici dokazana preosjetljivost na drijenak i provokacijskim testom uštrcavanja alergena u nosnicu razvile su se dvoslike nakon 24 sata.

U terapiju je uključena hiposenzibilizacija tijekom 5 godina uz uredno stanje sluznice nosa i bez dvoslika. Nakon prekida hiposenzibilizacije 8 godina stanje je stabilno da bi se ponovno pojavile dvoslike.

Uvođenjem kortikosteroida dvoslike nestaju, ali prekidom se ponovo pojave. Kao nuspojava kortikosteroida razvije se i supkapsularna mrena, pa se i obje mreke operiraju.

Specijalist ORL postavi indikaciju za ponovnom operacijom, ali imunolog odredi terapiju anti IL-5 (Nucala) . Nakon 4 injekcije dvoslike i polipi sluznice su nestali.

**Zaključak:**

Anti IL-5 je novi učinkoviti lijek u liječenju dvoslika uzrokovanih polipozom sinusa

**Title:**

Double vision and allergic sinus polyposis- new treatment approach (case report)

**Authors:**

Irena Marković, Antonela Gverović Antunica, Diana Bućan , Helena Kaštelan, Dragutin Petković

**Institution:**

Eye Clinic, University Hospital Centre Split, Department of Ophthalmology General Hospital Dubrovnik, Specialist's Office of Occupational Medicine Diana Bućan, 21000 Split, Department of Otorinolaryngology General Hospital Dubrovnik

**Aim:**

To present a case of a patient with allergic sinus polyposis and new treatment with anti IL-5 (Nucala)

**Patients and methods:**

-

**Results:**

## Case Report

63-year old patient developed double vision 17 years ago. Sinus polyposis was diagnosed after clinical and radiological imaging. Personal history of allergies on feather, olive pollen and Parietaria was noted.

Patient underwent sinus operation three times, twice using endoscopic sinus surgery and once with classic surgical approach. Despite this, there was recurrence of polyposis and diplopia developed again.

Immunological testing showed hypersensitivity to Parietaria. Inhalation provocation test resulted in recurrence of double vision within 24 hours of administration.

Hyposensitization as therapeutic approach was used for 5 years. During this time double vision was not present, and nasal mucosa was normal. For the next 8 years patient was stable. 8 years after the treatment he once again developed polyposis and diplopia.

Patient was treated with corticosteroids. Clinical improvement was noted during the therapy with relapse after discontinuation corticosteroids. As a side effect of corticosteroid therapy, cataract developed and he underwent phacoemulsification surgery.

Otorhinolaryngologist planned new surgery, but immunologist suggested anti IL-5 therapy (Nucala). After 4 injections of anti IL-5 treatment, polyposis disappeared as well as double vision.

**Conclusion:**

Anti IL-5 is a new effective drug in the treatment of diplopia caused by sinus polyposis.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Irena

**Ime i prezime / First and Last Name:-Last**

Marković

## 69. Lešin Mladen

**Naslov:**

Trauma vjeđa i orbite

**Autori:**

Lešin M, Olujčić I, Paradžik Šimunović M

**Ustanova:**

KBC Split

**Cilj:**

Prikazati slučajeve težih ozljeda vjeđa i orbite i osnovne principe rekonstrukcije

**Bolesnici i metode:**

10 bolesnik s ozljedom vjeđa, kantusa, periorbitalnog područja i orbite stranim tijelima, tučom i prometnim nezgodama koji su liječeni na našoj Klinici zadnjih 5 godina.

**Rezultati:**

Prikazani su rezultati primarne i odložene obrade rana vjeđa i orbite.

**Zaključak:**

U liječenju traume vjeđa i orbite obratiti pozornost na anamnezu i način nastanka ozljede, te primarnu ili odloženu rekonstrukciju, a u slučajevima ozljeda koje zahvaćaju okolna područja neophodna je suradnja s kirurzima odgovarajućih regija.

**Title:**

Eyelid and orbital trauma

**Authors:**

Lešin M, Olujčić I, Paradžik Šimunović M

**Institution:**

Clinical hospital centre Split

**Aim:**

To present cases of severe eyelid and orbital injuries and the basic principles of reconstruction

**Patients and methods:**

10 patients with injuries of the eyelids, canthal region, periorbital area and orbit caused by foreign bodies, fights and traffic accidents, who were treated at our Clinic for the last 5 years

**Results:**

The results of primary and delayed treatment of eyelid and orbital wounds are presented.

**Conclusion:**

In the treatment of trauma to the eyelids and orbit, pay attention to the anamnesis and the way the injury occurred, as well as the primary or delayed reconstruction, and in cases of injuries affecting the surrounding areas, cooperation with surgeons of the respective regions is necessary.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA ORBITU / Orbit section

**Titula / Title:**

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Mladen

**Ime i prezime / First and Last Name:-Last**

Lešin

## 70. Tomislav Ljubičić

**Naslov:**

Prva uspješna tromboliza nakon BRAO u OB Dubrovnik

**Autori:**

Tomislav Ljubičić, Stipe Škara (neurolog)

**Ustanova:**

OB Dubrovnik

**Cilj:**

Prikazati slučaj uspješne trombolize kod BRAO

**Bolesnici i metode:**

Slučaj pacijenta (kolege liječnika!) te prikaz dijagnostike, terapije i ishoda

**Rezultati:**

Prikaz dijagnostike, terapijskog postupka i uspješne rehabilitacije vida nakon trombolitičke terapije unutar 3h od nastanka BRAO.

**Zaključak:**

Tromboliza nije zlatni standard terapije kod BRAO, ali obzirom na skromne terapijske mogućnosti, prikazao sam da može biti korisna i spasiti vid kod pravih pacijenata u pravo vrijeme.

**Title:**

First successful thrombolysis of BRAO in GH Dubrovnik

**Authors:**

Tomislav Ljubičić, Stipe Škara (neurologist)

**Institution:**

GH Dubrovnik

**Aim:**

To present a case of successful thrombolysis of BRAO

**Patients and methods:**

Case report of the patient (fellow doctor!) and presentation of diagnostics, therapy and outcome

**Results:**

Presentation of diagnostics, therapeutic procedure and successful rehabilitation of the vision after thrombolytic therapy within 3 hours of the onset of BRAO.

**Conclusion:**

Thrombolysis is not the golden standard in therapy for BRAO, but regard the modest therapeutic options, I have shown that it can be useful and save the vision in the right patients at the right time.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

TOMISLAV

**Ime i prezime / First and Last Name:-Last**  
LJUBIČIĆ

## 71. Valentina Lacmanović Lončar

**Naslov:**

Operacija katarakte nakon transplantacije rožnice – izazov za operatera & neizvjesnost za bolesnika

**Autori:**

Valentina Lacmanović Lončar, Ivanka Petric Vicković, Renata Iveković, Zoran Vataavuk

**Ustanova:**

Klinika za očne bolesti, KBCSM "Sestre milosrdnice"

**Cilj:**

Operacija katarakte bolesnika nakon transplantacije rožnice je iznimno zahtjevna. U ovom radu ćemo pokazati sve izazove za operatera sa ciljem što boljeg postoperativnog rezultata na zadovoljstvo bolesnika i samog operatera.

**Bolesnici i metode:**

Analizirali smo 15 bolesnika operiranih na našoj klinici u periodu 2018-2022 godine. Kod svih bolesnika predhodno je učinjena lamelarna keratoplastika ili transplantacija rožnice pune debljine. Zabilježeni su demografski podatci, prethodne očne bolesti, analizirane vidne oštine, vrijednosti intraokularnog tlaka, broj endotelnih stanica prije i poslije operativnog zahvata.

**Rezultati:**

U postoperativnom praćenju od minimum 6 mjeseci zabilježeno je poboljšanje vidne oštine i pad broja endotelnih stanica kod svih bolesnika, dok su vrijednosti intraokularnog tlaka ostale u granicama normale.

**Zaključak:**

Za uspjeh operativnog zahvata katarakte bolesnika kod kojih je predhodno učinjena transplantacija rožnice izuzetno je važno stanje transplantata, njegova prozirnost i broj endotelnih stanica te iskustvo operatera.

**Title:**

Cataract surgery after corneal transplantation – a challenge for a surgeon & uncertainty for the patients

**Authors:**

Valentina Lacmanović Lončar, Ivanka Petric Vicković, Renata Iveković, Zoran Vataavuk

**Institution:**

University Hospital Center „Sestre milosrdnice“ University Department of Ophthalmology

**Aim:**

Cataract surgery for a patients after a corneal transplantation is extremely demanding. In this paper, we will show all the challenges for the surgeon with the aim of the best postoperative results for patients and surgeon.

**Patients and methods:**

We have analyzed 15 patients operated at our clinic in the period 2018-2022. Lamellar keratoplasty or full thickness corneal transplantation was previously performed on all patients. Demographic data, previous eye disease, analyzed visual acuity, intraocular pressure, number of endothelial cells before and after surgery.

**Results:**

In the postoperative follow-up of at least 6 months, an improvement in visual acuity and a decrease in the number of endothelial cells were recorded in all patients, while intraocular pressure values remained within normal limits.

**Conclusion:**

The condition of the transplant, its transparency and the number of endothelial cells and surgeon experience are extremely important for the success of cataract surgery on patients who have previously transplanted cornea.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Valentina

**Ime i prezime / First and Last Name:-Last**

Lacmanović Lončar



## 72. Kim Kasa

**Naslov:**

Utječe li topikalna antiglaukomska terapija na razvoj opstrukcije nazolakrimalnog duktusa?

**Autori:**

Kim Kasa, Ines Matoc, Idoia Goni Guarro, Rašeljka Tadić, Ivan Sabol, Ognjeg Zrinščak, Renata Iveković, Zoran Vataavuk

**Ustanova:**

KBC Sestre milosrdnice

**Cilj:**

Cilj ovog rada bio je utvrditi utjecaj topikalne antiglaukomske terapije na razvoj primarne stečene opstrukcije nazolakrimalnog duktusa.

**Bolesnici i metode:**

Ova retrospektivna studija uključivala je ukupno 296 pacijenata podijeljenih u promatranu i kontrolnu skupinu, te usklađenih prema dobi i spolu. Promatranu skupinu činilo je 100 pacijenata s dijagnozom primarne stečene NLDO i operiranom dakriocistorinostomijom u razdoblju od 2017. do 2022. g. NLDO je dijagnosticirana kliničkim pregledom, proštrcavanjem suznih kanalića i RTG dakriocistografijom. Kontrolnu skupinu činilo je 196 pacijenata bez dijagnoze NLDO koji su u 2022. g odini obrađivani za operaciju katarakte u istoj ustanovi. Između promatrane i kontrolne skupine uspoređivana je prevalencija pacijenata s dijagnosticiranim glaukomom, te vrsta i količina antiglaukomske terapije koju su pacijenti koristili. Isključni kriteriji bili su sekundarno uzrokovana NLDO, NLDO u pacijenata mlađih od 18 godina, te stenozе u proksimalnom dijelu odvodnog lakrimalnog sustava. Statistička obrada podataka vršena je Mann-Whitney i Chi-square testom.

**Rezultati:**

Promatrana skupina s dijagnosticiranim NLDO uključivala je 36 (36%) glaukopskih pacijenata u odnosu na 16 (8,16%) u kontrolnoj skupini, što je statistički značajna razlika ( $p < 0,0001$ ). Pacijenti u promatranoj skupini koristili su prosječno veću količinu antiglaukopskih lijekova (2,39 naspram 1,5 u kontrolnoj skupini,  $p = 0,006$ ). Količina pacijenata u promatranoj skupini koja je koristila kapljice koje sadržavaju timolol bilo u monoterapiji ili u fiksnoj kombinaciji lijekova bila je značajno veća (86,11% u usporedbi s 50%,  $p = 0,006$ ). Ostali lijekovi samostalno ili u kombinacijama nisu pokazali statistički značajnu razliku između skupina. Kao konzervans u 79% antiglaukomske terapije promatrane skupine nalazio se benzalkonijev klorid.

**Zaključak:**

Dugotrajno korištenje topikalne antiglaukomske terapije koja kao konzervans sadržava benzalkonijev klorid može dovesti do razvoja opstrukcije nazolakrimalnog duktusa zbog utjecaja benzalkonijevog klorida na epitel nazolakrimalnog duktusa. S obzirom na navedeno, u odabiru antiglaukomske terapije treba uzeti u obzir utjecaj konzervansa na lakrimalni sustav i razmotriti propisivanje bezkonzervansne terapije.

**Title:**

Does topical antiglaucomatous therapy have an effect on development of nasolacrimal duct obstruction?

**Authors:**

Kim Kasa, Ines Matoc, Idoia Goni Guarro, Rašeljka Tadić, Ivan Sabol, Ognjeg Zrinščak, Renata Iveković, Zoran Vatavek

**Institution:**

KBC Sestre milosrdnice

**Aim:**

The aim of this study was to determine the impact of topical antiglaucomatous therapy on the development of primary acquired nasolacrimal duct obstruction.

**Patients and methods:**

This retrospective study included 296 patients divided into case and control group and matched by age and sex. The case group consisted of 100 patients diagnosed with NLDO that underwent dacryocystorhinostomy from 2017 until 2022. NLDO was diagnosed by clinical examination, lacrimal drainage system irrigation and RTG dacryocystography. The control group consisted of 196 patients without NLDO who underwent cataract surgery in the same department in 2022. The prevalence of glaucoma patients, the kind and the amount of topical antiglaucomatous therapy were compared between the groups. Excluding criteria were secondary NLDO, NLDO in patients younger than 18 years old and obstruction in proximal lacrimal drainage system. Statistical methods used were Mann-Whitney and Chi-square test.

**Results:**

The case group included 36 patients (36%) who were diagnosed with glaucoma, compared to 16 patients (8,16%) in the control group, the difference being statistically significant ( $p < 0,0001$ ). The case group patients on average used more antiglaucomatous medications per person (2,39 compared to 1,5 in the control group,  $p = 0,006$ ). The amount of patients in the case group who were prescribed timolol containing medication in monotherapy or combination therapy was significantly higher (86,11% compared to 50%,  $p = 0,006$ ). Other antiglaucomatous medications did not show significant difference between the groups. Benzalkonium chloride was used as preservative in 79% of antiglaucomatous medications in the case group.

**Conclusion:**

Long-term use of topical antiglaucomatous therapy that contains benzalkonium chloride as a preservative can lead to development of nasolacrimal duct obstruction due to affect of benzalkonium chloride on nasolacrimal duct epithelium. Considering the stated, ophthalmologist should contemplate the impact of the preservative on lacrimal drainage system and consider prescribing preservative-free antiglaucomatous therapy.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Kim

**Ime i prezime / First and Last Name:-Last**

Kasa

### 73. Karla Randelović

**Naslov:**

Cross-linking rožnice potpomognut iontoforezom – potencijalna terapija izbora u liječenju keratokonusa

**Autori:**

Karla Randelović, Zoran Vataavuk

**Ustanova:**

KBC Sestre milosrdnice, Klinika za očne bolesti

**Cilj:**

Prikazati postupak primjene cross-linkinga potpomognutog iontoforezom.

**Bolesnici i metode:**

U radu će se prikazati 3 muška bolesnika (ukupno 4 oka) s uznapredovalim stadijem keratokonusa. Prilikom pregleda i snimanja topografije Pentacam uređajem, postavljene su dijagnoze keratokonusa, stadija 3 (4) Belin ABCD, s rožnicama tanjim od 400 $\mu$ m. Pristupilo se postupku cross-linkinga potpomognutog iontoforezom koristeći hipotonični 0.1% riboflavin, ostavljajući epitel rožnice intaktnim. Nakon 5- minutne iontoforeze nastavilo se Dresdenskim protokolom cross-linkinga s posljedičnim sinergističkim učinkom ultraljubičaste A svijetlosti (370 nm) i vitamina B2 koristeći CSO Vega 3mW uređaj.

**Rezultati:**

Postoperativan oporavak je brži nego kod standardnog CXL-a. Prilikom tromjesečnog praćenja, nekorrigirana vidna oštrina tretiranog oka postoperativno je poboljšanja, dok se pomoću Rose K2 kontaktnih leća postigla bolja vidna oštrina od preoperativne i time rehabilitacija bolesnika u svakodnevnicu. Na svakoj kontroli pratila se topografija rožnice i njezine Kmax vrijednosti čija se stabilizacija očekuje nakon 12-24 mjeseci.

**Zaključak:**

Cross-linking rožnice je zbog svog biomehaničkog obilježja postao standardna terapija progresije keratokonusa. Metoda uklanjanja epitela pokazala se učinkovitom zbog lakšeg penetriranja riboflavina u stromu rožnice. Kod tankih rožnica, ta opcija nažalost nije metoda izbora, te se iontoforeza sa svojim svojstvima pokazala mogućim rješenjem za ulazak riboflavina u dubinu rožnice, bez potrebe za uklanjanjem epitela. Također, nuspojave vezane uz bolnost, fotofobiju i infekcije su tim postupkom smanjene. I-

CXL se pokazala dobrom metodom izbora kada standardne metode nisu moguće.

**Title:**

Iontophoresis-assisted corneal cross-linking method – potential therapy for keratoconus

**Authors:**

Karla Randelović, Zoran Vataavuk

**Institution:**

University Hospital Center Sestre milosrdnice: Ophthalmology department

**Aim:**

To present procedure of iontophoresis-assisted corneal cross-linking.

**Patients and methods:**

The paper will present 3 male patients (4 eyes in total) with an advanced stage of keratoconus. During the examination and recording of the topography with the Pentacam device, diagnoses of keratoconus, stage 3 (4) Belin ABCD, with corneas thinner than 400µm, were made. An iontophoresis-assisted cross-linking procedure was performed using hypotonic 0.1% riboflavin, leaving the corneal epithelium intact. After a 5-minute iontophoresis, the Dresden cross-linking protocol was continued with the resulting synergistic effect of ultraviolet A light (370 nm) and vitamin B2 using the CSO Vega 3mW device.

**Results:**

Postoperative recovery is faster than with standard CXL. During the three-month follow-up, the uncorrected visual acuity of the treated eye improved postoperatively, while with the help of Rose K2 contact lenses, better visual acuity was achieved than preoperatively, thus rehabilitating the patient into everyday life. At each control, the topography of the cornea and its Kmax values were monitored, whose stabilization is expected after 12-24 months.

**Conclusion:**

Corneal cross-linking has become a standard therapy for keratoconus progression due to its biomechanical feature. The method of removing the epithelium proved to be effective due to easier penetration of riboflavin into the corneal stroma. With thin corneas, this option is unfortunately not the method of choice, and iontophoresis with its properties proved to be a possible solution for riboflavin to enter the depth of the cornea, without the need to remove the epithelium. Also, side effects related to pain, photophobia and infections are reduced with this procedure. I-CXL has proven to be a good method of choice when standard methods are not possible.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJA ZA KONTAKTOLOGIJU / Contactology section

**Titula / Title:**

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Karla

**Ime i prezime / First and Last Name:-Last**

Ranđelović

## 74. Matutinović Odak Željana

### **Naslov:**

Može li upala uha uzrokovati strabizam? Gradenigov sindrom-prikaz slučaja

### **Autori:**

Matutinović Odak Ž, Vučinović A, Jakšić B, Bučan K

### **Ustanova:**

Klinika za očne bolesti KBC Split

### **Cilj:**

Prikazati klinički slučaj obostranog edema glave vidnog živca i paralize šestog kranijalnog živca na kon tromboze cerebralnog venskog sinusa u 6-godišnje djevojčice s nedijagnosticiranim Gradenigovim sindromom. Naglasiti hitnost ovog stanja, prikazati oftalmološke simptome, dijagnostičke i terapijske mogućnosti.

### **Bolesnici i metode:**

Šestogodišnja djevojčica, inače zdrava, se javlja oftalmologu zbog pojave dvoslika. Osam dana prije pojave simptoma djevojčica je dva dana bila febrilna te je u dva navrata pregledana na hitnom pedijatrijskom prijemu i upućena na kućno liječenje antipireticima i peroralnim antibioticima. U trenutku oftalmološkog pregleda djevojčica je bila narušenog zdravlja, sa znakovima desnostrane pareze šestog kranijalnog živca te izrazitim edemom glave vidnog živca obostrano. Hitno je upućena na Kliniku za pedijatriju. Dijagnoza Gradenigo sindroma, tromboze desnog sigmoidnog i transverznog sinusa te dijela jugularne vene kao posljedica akutnog mastoiditisa, je potvrđena nakon kliničkih, laboratorijskih, imunoloških i radioloških pretraga.

### **Rezultati:**

Vidna oštrina pri dolasku je bila 6/12 na desnom i 6/7 na lijevom oku. Ispitivanjem bulbomotorike je utvrđena nemogućnost abdukcije desnog oka. Relativni aferentni pupilarni defekt je bio pozitivan na desnom oku. Pregled očne pozadine je pokazao edem glave vidnog živca stupnja 5 po Frisenu uz peripapilarne hemoragije na oba oka, više desno. Kliničkim pregledom pedijatra je ustanovljeno narušeno opće stanje djeteta. Analiza krvi je pokazala uredne vrijednosti, osim povišene vrijednosti sedimentacije eritrocita (SE 62mm/3.6ks). Bris nazofarinksa je bio negativan na antigene svih ispitivanih respiratornih virusa (RSV, antigen influence A i B te virusa SARS-CoV-2). MR mozga uz iv kontrast je pokazao prekid kontrastnog prikaza u području desnog sigmoidnog i transverznog sinusa te prikazanog dijela desne jugularne vene što je odgovaralo venskoj trombozi. Također su uočene izrazitije upalne promjene u području mastoida obostrano posebice desno s posljedičnom obliteracijom mastoidnih celula i bubnjišta upalnim supstratom. U terapiju je uključena antibiotska terapija ceftriaksonom i ciprofloxolom parenteralno te niskomolekularni heparin u terapijskoj dozi i metilprednizolon (3mg/kg). Otorinolaringolog je napravio desnostranu miringotomiju, masteidektomiju i antrotomiju. Dva mjeseca nakon provedene terapije vidna oštrina je bila 6/7 na desnom oku i 6/6 na lijevom oku. Abdukcija desnog oka je bila ponovno zadovoljavajuća. Edem glave vidnog živca je i dalje bio prisutan na desnom oku, ali u puno manjoj mjeri.

### **Zaključak:**

Gradenigov sindrom je rijetka komplikacija upale srednjeg uha, a još rjeđa je cerebralna venska tromboza. Ova potencijalno po život opasna situacija zahtijeva hitnu kiruršku i antibiotsku terapiju.

Očni simptomi su izrazito rijetki, ali mogu biti početni znakovi ove bolesti. Stoga je simptome novonastalog strabizma potrebno ozbiljno shvatiti, posebice kod djece.

**Title:**

Can a simple ear infection cause strabismus? Gradenigo syndrome - case report

**Authors:**

Matutinovic Odak Z, Vucinovic A, Jaksic B, Bucan K

**Institution:**

Department of Ophthalmology, University Hospital Centre Split

**Aim:**

To report a case of bilateral papilledema and abducens nerve palsy after cerebral venous sinus thrombosis in a 6-year-old girl with undiagnosed Gradenigo's syndrome. To emphasize the urgency of this condition, show ophthalmological symptoms, and diagnostic and therapeutic options.

**Patients and methods:**

A six-year-old girl, otherwise healthy, presents to an ophthalmologist due to the appearance of double vision. Eight days before the onset of symptoms, the girl was febrile for two days and was examined on two occasions at the pediatric emergency department and referred to home treatment with antipyretics and oral antibiotics. At the time of the ophthalmological examination, the patient presented with a unilateral right 6th nerve palsy, right eye relative afferent pupillary defect, and bilateral papilledema. She was urgently referred to the Pediatric Clinic and was diagnosed with Gradenigo's syndrome, thrombosis of the right sigmoid and transverse sinus and part of the jugular vein as a result of acute mastoiditis, after clinical, laboratory, immunological, and radiological tests.

**Results:**

Visual acuity was 6/12 in the right eye and 6/7 in the left eye. She had a restriction of the right eye abduction. All other ocular movements were without restrictions and painless. The Relative afferent pupillary defect was positive in the right eye. The alternate cover test revealed a right eye esotropia. The anterior segment of both eyes was normal on slit lamp examination. Fundoscopy revealed bilateral Frisen grade 5 papilledema with surrounding cotton wool spots, numerous flame hemorrhages, and macular edema. The pediatrician's clinical examination revealed that the general condition of the child was impaired. The blood analysis showed normal values, except for an elevated sedimentation rate (SE 62mm/3.6ks). The swab of the nasopharynx was negative for antigens of all tested respiratory viruses (RSV, influenza A, and B antigens, and SARS-CoV-2 virus). MRI of the brain with iv contrast showed interruption of the contrast image in the area of the right sigmoid and transverse sinus and the displayed part of the right jugular vein, which corresponded to venous thrombosis. More severe inflammatory changes were also observed in the mastoid area on both sides, especially on the right, with consequent obliteration of the mastoid cells and the tympanic membrane with an inflammatory substrate. The therapy included a parenteral antibiotic with ceftriaxone and cyprinoid and low molecular weight heparin in a therapeutic dose and methylprednisolone (3 mg/kg). The otorhinolaryngologist performed a right-sided myringotomy, mastoidectomy, and antrectomy. Two months after the therapy, visual acuity was 6/7 in the right eye and 6/6 in the left eye. Abduction of the right eye was again satisfactory. Papilledema was still present in the right eye but to a much lesser extent.

**Conclusion:**

Gradenigo's syndrome is a rare complication of otitis media, and cerebral venous thrombosis is even less common. This potentially life-threatening situation requires immediate surgical and antibiotic therapy. Ophthalmological symptoms are extremely rare, but they can be the initial signs of this disease. Therefore, the symptoms of new-onset strabismus should be taken seriously, especially in children.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

**Titula / Title:**

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Matutinović Odak

## 75. Jozefina Josipa Dukić

### **Naslov:**

Usporedba rezultata mjerenja centralne debljine rožnice pomoću različitih uređaja: Pentacam, beskontaktna spekularna mikroskopija i ultrazvučna pahimetrija

### **Autori:**

Dukić, JJ; Marin Lovrić, J; Kabić, Š; Bućan, K

### **Ustanova:**

Klinika za očne bolesti – Klinički Bolnički Centar Split

### **Cilj:**

Cilj ove studije je bio usporediti rezultate mjerenja centralne debljine rožnice (CCT) dobivene s tri uobičajeno korištena uređaja: Pentacam, beskontaktna spekularna mikroskopija i ultrazvučna pahimetrija.

### **Bolesnici i metode:**

Centralna debljina rožnice četrdeset i dva (42) oka od dvadeset i jednog (21) ispitanika mjerena je svakim od gore navedenih uređaja. Od toga je trideset i pet očiju bilo neoperirano, dok je sedam bilo podvrgnuto prethodnoj operaciji katarakte. Ispitanici koji su koristili antiglaukomsku terapiju, nosili meke kontaktne leće unutar jednog tjedna od vremena mjerenja CCT-a ili su imali bolest rožnice su bili isključeni iz studije.

### **Rezultati:**

Usporedba CCT između mjernih metoda procijenjena je korištenjem 95% intervala pouzdanosti z a granice slaganja (LoA). Srednje vrijednosti CCT ( $\pm$ SD) bile su  $553,01 \pm 39,33 \mu\text{m}$ ,  $559,49 \pm 38,44 \mu\text{m}$ , odnosno  $552,04 \pm 42,95 \mu\text{m}$  za ultrazvučnu pahimetriju, Pentacam i beskontaktnu spekularnu mikroskopiju. Najdeblje srednje vrijednosti CCT-a su dobivene snimanjem Pentacam uređajem dok su najtanje srednje vrijednosti CCT-a dobivene beskontaktnom spekularnom mikroskopijom.

### **Zaključak:**

Naši podaci su pokazali da su vrijednosti CCT-a pomoću ova tri uređaja za snimanje bili u dobroj korelaciji. Međutim, CCT mjerenja napravljena pomoću Pentacam-a bila su znatno deblja od druga dva instrumenta.

### **Title:**

Comparison of central corneal thickness measurements using different imaging devices: Pentacam, non-contact specular microscopy and ultrasound pachymetry

### **Authors:**

Dukić, JJ; Marin Lovrić, J; Kabić, Š; Bućan, K

### **Institution:**

Department of Ophthalmology, University Hospital Centre Split

### **Aim:**

The purpose of this study was to compare central corneal thickness (CCT) measurements obtained by three common devices: Pentacam, non-contact specular microscopy and ultrasound pachymetry.

### **Patients and methods:**

In this cross-sectional study, the central corneal thickness of forty-two (42) eyes from twenty-one (21) individuals were measured by each device. Of these, thirty-



five eyes were unoperated, whereas seven had undergone previous cataract surgery. Individuals with antiglaucoma drug use, soft contact lens wear within one week of CCT measurement, and history of corneal disease were excluded from the study.

**Results:**

Comparison of CCT between the measurement methods was evaluated using 95% confidence intervals for the limits of agreement (LoA). The mean CCT values ( $\pm$ SD) were  $553.01 \pm 39.33 \mu\text{m}$ ,  $559.49 \pm 38.44 \mu\text{m}$ , and  $552.04 \pm 42.95 \mu\text{m}$  for ultrasound pachymetry, Pentacam and non-contact specular microscopy, respectively. The thickest and thinnest mean CCT values corresponded to those obtained by Pentacam and non-contact specular microscopy, respectively.

**Conclusion:**

Our data showed that CCT values using these three imaging devices were well correlated. However, CCT measurements made using Pentacam were significantly thicker than the other two instruments.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Jozefina Josipa

**Ime i prezime / First and Last Name:-Last**

Dukić

## 76. Petric Vicković Ivanka

**Naslov:**

Operacija katarakte i endotelna distrofija

**Autori:**

Petric Vicković I, Lacmanović Lončar V, Iveković R, Vataavuk Z

**Ustanova:**

KBC Sestre milosrdnice

**Cilj:**

pregled preoperativnih i postoperativnih rizičnih faktora za gubitak endotelnih stanica prilikom operacije katarakte, te indikacije za odvojeni ili kombinirani zahvat operacije katarakte i transplantacije rožnice

**Bolesnici i metode:**

Kod pacijenta sa kataraktom i endotelnom distrofijom rožnice preoperativno potrebna je analiza preoperativnih i intraoperativnih rizičnih čimbenika za gubitak endotelnih stanica.

**Rezultati:**

Preoperativni čimbenici koji imaju doprinose padu endotelnih stanica su dob, spol, prisutnost dijabetesa, prethodna trauma oka ili upala te nošenje kontaktnih leća. Intraoperativni čimbenici koji utječu na smanjene gubitka endotelnih stanica su primjena soft-shell tehnike, korekcija phaco tehnike, i operativni zahvat učinjen od strane iskusnog kirurga. Kombinirani operativni zahvat indiciran je kod preoperativno dekompenzirane rožnice s debljinom većom od 640 mikrona.

**Zaključak:**

Prilikom operacije katarakte kod pacijenata s endotelnom distrofijom potrebno je procijeniti rizik dekompenzacije endotela te smanjiti ga.

**Title:**

Cataract surgery and endothelial dystrophy

**Authors:**

Cataract surgery and endothelial dystrophy

**Institution:**

University Department of Ophthalmology University Hospital Centre Sestre milosrdnice, Zagreb, Croatia

**Aim:**

The aim is to review the preoperative and perioperative risk factors for corneal endothelial cell loss during cataract surgery, and indications for cataract surgery alone or cataract surgery combined with keratoplasty for patients with cataracts and endothelial dystrophy.

**Patients and methods:**

Management of cataract patients with endothelial dystrophy requires assessment of preoperative factors contributing decreased endothelial cell count. Intraoperative measures were analysed for perioperative endothelial cell loss.

**Results:**

Preoperative factors contributing to decreased endothelial cell count include age, sex, diabetes, a history of ocular trauma or inflammation, and contact lens wear. Intra-

operative measures shown to protect endothelial cells include the use of the soft-shell viscoelastic technique, efficient phaco techniques, and surgery by an experienced surgeon. A triple procedure should be performed with preoperative corneal epithelial decompensation and considered with preoperative pachymetry greater than 640  $\mu\text{m}$ .

**Conclusion:**

Ophthalmologists performing cataract surgery on patients with endothelial dystrophy must carefully consider the risks of endothelial cell loss during surgery and minimize the risk of corneal decompensation after surgery

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

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Ivanka

**Ime i prezime / First and Last Name:-Last**

Petric Vicković

## 77. Andrijević Derk Biljana

### **Naslov:**

Jesmo li danas bliže spoznaji kada prestati s anti VEGF terapijom u bolesnika s vlažnim oblikom s enilne makularne degeneracije ?

### **Autori:**

Andrijević Derk B, Belak M, Marić G, Radmilović M, Vataavauk Z.

### **Ustanova:**

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### **Cilj:**

Prikazati kroz primjere bolesnika s vlažnim oblikom senilne makularne degeneracije (nv SMD) važne kliničke, OCT/ OCTA biomarkere koji utječu na odabir protokola liječenja, prognozu anatomske i funkcionalnog uspjeha liječenja te na usmjeravanje liječenja prema daljnjim aplikacijama ili prestanku anti- VEGF terapije.

### **Bolesnici i metode:**

U radu su prikazani primjeri bolesnika koji su liječeni zbog vlažnog oblika senilne makularne degeneracije multiplim intravitrealnim aplikacijama anti- VEGF terapije kao i kriteriji na temelju kojih je donesena odluka o nastavku ili prestanku daljnjih aplikacija. Prilikom odabira anti- VEGF terapije, protokola liječenja kao i u oftalmološkom praćenju bolesnika uzeti su u obzir klinički kriteriji (korigirana vidna oštrina- BCVA, klinički nalaz fundusa), OCT/OCTA biomarkeri kao indikatori aktivnosti subretinalne neovaskularne membrane ( CNV), centralna foveolarna debljina (CFT) te fluoresceinska angiografija ( FA ). Na temelju funkcionalnog i anatomske odgovora na primijenjenu terapiju donijeta je odluka o nastavku liječenja istim ili promijenjenim anti VEGF lijekom, promjeni protokola liječenja ili o prestanku liječenja s anti VEGF terapijom.

### **Rezultati:**

Prema funkcionalnom i anatomske odgovoru na anti- VEGF terapiju mogu se razlikovati tri skupine bolesnika.

Prvu skupinu čine bolesnici koji imaju dobar funkcionalni i anatomske odgovor na primijenjenu anti-VEGF terapiju uz postignutu stabilizaciju bolesti.

Odluka o daljnjem liječenju donosi se na temelju stabilne vidne oštine i kliničke statusa te OCT /OCTA biomarkera koji ne pokazuju aktivnost bolesti. Frekvencija aplikacija produžava se do intervala od 12 tjedana kada se, ukoliko nema pogoršanja kliničke stanja, prestaje s aplikacijama anti VEGF terapije uz daljnje oftalmološke kontrole.

Drugu skupinu čine bolesnici tzv ."non responderi" kod kojih nakon primijenjene anti- VEGF terapije ne dolazi do regresije eksudacije i znakova koji ukazuju na aktivnost neovaskularne ploče kao ni do poboljšanja vidne oštine.

Odluka o prestanku daljnjih aplikacija kod takvih bolesnika donosi se usprkos perzistiranju kliničkih i OCT /OCTA znakova aktivnosti bolesti a zbog znakova propadanja RPE i fotoreceptora te loše vidne oštine koja se ne poboljšava usprkos svim primijenjenim ili promijenjenim anti- VEGF lijekovima, dodatim drugim lijekovima, različitim protokolima liječenja i frekventnim aplikacijama.

Treću skupinu čine bolesnici kod kojih je funkcionalni odgovor na primjenjenu terapiju loš zbog razvoja atrofije ili stvaranja ožiljka u makularnom području verificiranog klinički i OCT metodom, pa je tada indiciran prestanak daljnjih aplikacija anti VEGF terapije.

**Zaključak:**

Pri odabiru anti- VEGF terapije , protokola liječenja i trajanja liječenja bolesnika s vlažnim oblikom SMD-

treba uzeti u obzir kliničke kriterije i dijagnostičke OCT/OCTA biomarkere koji nam, kako na početku terapije tako i tijekom liječenja i kontrolnih pregleda, mogu dati smjernice prema nastavku liječenja ili prema prestanku daljnjih aplikacija kada rizik postane veći od koristi za pacijenta.

**Title:**

Are we nowadays more closer to knowledge when to stop with anti VEGF therapy in patients with neovascular ARMD?

**Authors:**

Andrijević Derk B, Belak M, Marić G, Radmilović M, Vataavauk Z.

**Institution:**

Department of Ophthalmology, University Clinical Center "Sestre milosrdnice", Zagreb

**Aim:**

To show through patients with neovascular age related macular disease (nvARMD) important clinical, OCT/OCTA biomarkers which influence on treatment protocol choices, prognosis of anatomical and functional treatment success and directed treatments towards further applications or cessation of anti- VEGF treatment.

**Patients and methods:**

In this presentation are shown patients which were because of neovascular ARMD with multiple intravitreal applications of anti -

VEGF therapy as well as the criteria needed for decision about continuation or cessation of further applications. In the selection of anti-

VEGF therapy and treatment protocol , as well as in the follow up period, clinical criteria as the best corrected visual acuity ( BCVA) and fundoscopy, OCT/ OCTA biomarkers as indicators of active neovascular membrane (CNV), central foveal thickness (CFT) and fluorescein angiography (FA) are taken in account. Based on functional and anatomical response to applied therapy , decision about continuation with the same or changed anti -

VEGF therapy are made, as well as the decision about changing treatment protocol or cessation of anti-VEGF treatment.

**Results:**

According to functional and anatomical response to anti- VEGF therapy we may distinguished three groups of patients.

The first group are patients with good functional and anatomical response to applied anti - VEGF therapy with achieved stabilization of the disease activity.

The decision of further treatment are based on stable BCVA and clinical findings and on OCT/OCT A biomarkers which show no disease activity.

The application frequency interval are extended to 12 weeks when if there is no deterioration of clinical findings ,anti-

VEGF applications are discontinued with further ophthalmologic follow ups.

The second group are patients " non responders" , in whom applied anti -

VEGF therapy didn't effect on regression of exudations and activity of the subretinal neovascular

membrane as well as there is no improvement in BCVA.

The cessation of further anti-VEGF therapy is indicated in those patients in spite of clinical and OCT/OCTA signs of disease activity because of signs of RPE and photoreceptors activity loss and on persistent worse BCVA which is not improved in spite of the applied or changed anti-VEGF agents, added other adjuvant therapy, or in spite of various protocols and application frequency.

The third group of patients are those with very bad functional response to applied therapy which is result of macular atrophy or fibrosis verified clinically and by the OCT macular scans. In this situation the further anti-VEGF treatment is discontinued.

**Conclusion:**

We should consider in patients with neovascular ARMD clinical criteria and diagnostic OCT/OCTA biomarkers in the selection of the anti-VEGF therapy, the treatment protocols as well as in the selection of the treatment duration. Those criteria may be the guidelines at the beginning of the treatment as well as during the therapy and can direct us towards continuation of the treatment or cessation if the therapy risk outweighs the patient benefit.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Biljana

**Ime i prezime / First and Last Name:-Last**

Andrijević Derk

## 78. Tamara Mišljenović Vučerić

**Naslov:**

Distiroidna optička neuropatija

**Autori:**

Tamara Mišljenović Vučerić<sup>1,2</sup>, Tamara Paravić<sup>2</sup>, Tomislav Vidović<sup>3</sup>, Maja Novak-Stroligo<sup>1,2</sup>, Tea Čaljkusić-Mance<sup>2</sup>

**Ustanova:**

1 Oculistica 2 Klinički bolnički centar Rijeka, Klinika za oftalmologiju 3 Klinički bolnički centar Zagreb, Klinika za očne bolesti, Referentni centar Ministarstva zdravlja za neurooftalmologiju

**Cilj:**

Distiroidna optička neuropatija (DON) je disfunkcija vidnog živca koja je jedna od najtežih komplikacija Gravesove orbitopatije (GO). Uz sve što je do sada poznato i dalje postoje kontroverze u procjeni i liječenju DON-

a, što pokazuje i to da za sada nema točno definiranog protokola za dijagnozu DON-

a. Ovaj rad daje pregled trenutnog znanja o DON-

u, uključujući njegovu patogenezu i epidemiologiju, kliničke i dijagnostičke značajke te izbore liječenja i ishode.

**Bolesnici i metode:**

Pregled literature i prikaz slučaja autora.

**Rezultati:**

DON se javlja u 5-8% slučajeva GO.

GO pogađa žene češće nego muškarce u omjeru 4:1. Međutim, DON se češće viđa kod muškaraca, starije životne dobi, udružen s dijabetesom, pušenjem i stimulatorima imunološkog odgovora (kao što su povremene infekcije, lokalne operacije i osobne tragedije).

Shvaćanje DON-

a mijenjalo se kroz vrijeme, s danas najprihvaćeniji mehanizam je kompresija vidnog živca povećanim ekstraokularnih mišića (EOM-a) u području Zinn-ovog prstena u orbitalnom apexu.

DON se dijagnosticira na temelju kliničkih znakova: pad vidne oštine, defekti kolornog vida, ispada u vidnom polju – gdje su karakteristični centralni ili inferiorni ispadi. Optičkom koherentnom tomografijom (OCT) i OCT angiografijom (OCTA) možemo dokazati početne promjene subkliničkih i kroničnih oblika, dok CT ili MR pokazuje kompresiju apikalnog optičkog živca ili proptozu s istezanjem optičkog živca. RAPD može biti pozitivan kod asimetričnog zahvaćanja ili monokularnog DON-a.

Standardna terapija uključuje kortikosteroide uz eventualnu dekompresiju orbita, s djelomičnim odgovorom uz mogućnost pojave recidiva, a prednosti novije biološke, ciljane terapije još nisu pristupačne u svakodnevnoj praksi.

**Zaključak:**

Iako DON može uzrokovati gubitak vida, većina slučajeva je reverzibilna ako se prepozna i liječi na vrijeme.

**Title:**

Disthyroid optic neuropathy

**Authors:**

Tamara Mišljenović Vučerić<sup>1,2</sup>, Tamara Paravić<sup>2</sup>, Tomislav Vidović<sup>3</sup>, Maja Novak-Stroligo<sup>1,2</sup>, Tea Čaljkušić-Mance<sup>2</sup>

**Institution:**

1 Oculistica 2 Clinical Hospital Center Rijeka, Department of Ophthalmology 3 University Hospital Center Zagreb, Department of Ophthalmology, Reference center for neuro ophthalmology

**Aim:**

Dysthyroid optic neuropathy (DON) is a serious complication of Graves orbitopathy (GO) that may result in permanent loss of vision. Despite everything that is known so far, there are still controversies in the evaluation and treatment of DON, which is also shown by the fact that there is currently no precisely defined protocol for the diagnosis of DON. This paper reviews the current knowledge of DON, including its pathogenesis and epidemiology, clinical and radiologic features, and management choices and outcomes.

**Patients and methods:**

Literature review and author case report.

**Results:**

DON occurs in 5-8% of GO cases.

GO affects women more often than men in a ratio of 4:1. However, DON is more commonly seen in men, older age, associated with diabetes, smoking, and stimulators of the immune response (such as occasional infections, local surgeries, and personal tragedies).

The understanding of DON has changed over time, with today the most accepted mechanism being compression of the optic nerve by enlarged extraocular muscles (EOM) in the area of the ring of Zinn at the orbital apex.

DON is diagnosed on the basis of clinical signs: decrease in visual acuity, color vision defects, visual field defects - where central or inferior defects are characteristic. With OCT/OCTA we can prove the initial changes of subclinical and chronic forms, while CT or MRI shows compression of the apical optic nerve or proptosis with stretching of the optic nerve. RAPD may be positive in asymmetric involvement or monocular DON.

Standard therapy includes corticosteroids and if needed decompression of the orbits, with partial response and the possibility of recurrence. The advantages of newer biological, targeted therapy are not yet accessible in everyday practice.

**Conclusion:**

Although DON may cause vision loss, most cases are reversible if recognized and managed in a timely manner.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tamara

**Ime i prezime / First and Last Name:-Last**

Mišljenović Vučerić



## 79. Tomislav Vidović

**Naslov:**

Klinička obilježja bolesnika s tranzitornim oštećenjem vida

**Autori:**

Tomislav Vidović, Marija Bukvić, Igor Petriček, Jelena Metikoš, Tamara Mišljenović Vučerić

**Ustanova:**

Klinika za očne bolesti Medicinskog fakulteta Sveučilišta u Zagrebu, KBC Zagreb

**Cilj:**

Prikazati kliničke osobitosti i dijagnostičke postupke u pacijenata s tranzitornim oštećenjem vida.

**Bolesnici i metode:**

Autori prikazuju 29 bolesnika s tranzitornim oštećenjem vida. Svim ispitanicima je osim standardnog oftalmološkog pregleda učinjena Octopus 900 perimetrija, test kontrastne osjetljivosti i test raspoznavanja boja, OCT makule i vidnog živca, ultrazvuk oka i očne šupljine i VEP. Također u učinjeni i MR mozga, orbita i vratne kralješnice s angiografijom, te laboratorijska i serološka opservacija, CDFI karotidnog i vertebro-bazilarnog sliva, ultrazuk srca, pregledi interniste i neurologa.

**Rezultati:**

U 19 bolesnika oštećenje vida je bilo monokularno, dok 10 bolesnika imalo oštećenje vida na oba oka. Oštećenje vida je trajalo od nekoliko minuta do dva sata. Oporavak vida je bio potpun u svih bolesnika. Bolesti karotidnih i vertebralnih arterija, kardiovaskularnog sustava i idiopatska intrakranijska hipertenzija su nađeni u najvećeg broja bolesnika.

**Zaključak:**

Uzroci prolaznog oštećenja vida mogu biti različiti. Oštećenje vida može biti povezano s bolestima karotidnih arterija i srčanim bolestima, a isto tako i migrenom. Pacijenti s prolaznim oštećenjem vida mogu imati rizik za razvoj cerebrovaskularnog ili kardiovaskularnog incidenta. Stoga je potrebna urgentna oftalmološka, neurološka, internistička i radiološka opservacija. Terapijski postupak ovisi o uzroku.

**Title:**

Clinical characteristics of patients with transient visual loss

**Authors:**

Tomislav Vidović, Marija Bukvić, Igor Petriček, Jelena Metikoš, Tamara Mišljenović Vučerić

**Institution:**

Department of Ophthalmology, Zagreb University Hospital, University of Zagreb, School of Medicine, Zagreb

**Aim:**

To present clinical features and diagnostic procedures in patients with transient visual loss..

**Patients and methods:**

The authors present 29 patients with transient visual impairment. In addition to the standard ophthalmological examination, all subjects underwent Octopus 900 perimetry, Pelli Robson contrast sensitivity test and Ishihara plates, OCT of the macula and optic nerve, ultrasound of the eye and the orbit, and VEP. In addition, MRI of the brain, orbit and cervical spine with angiography, as well as laboratory and serological observation, CDFI of the carotid and vertebral arteries, and echocardiography. Examinations by an internist and a neurologist were also performed.

**Results:**

In 19 patients, visual impairment was monocular, while 10 patients had visual impairment in both eyes. The visual impairment lasted from a few minutes to two hours. The recovery of vision was complete in all patients. Diseases of carotid and vertebral arteries, cardiovascular diseases and idiopathic intracranial hypertension were found in the largest number of patients.

**Conclusion:**

The causes of temporary visual impairment are diverse. Visual impairment can be associated with carotid artery disease and heart diseases, as well as migraine. Patients with transient visual impairment may be at risk for developing cerebrovascular or cardiovascular events. Therefore, urgent ophthalmological, neurological, internist, and radiological observation are required. The therapeutic procedure depends on the cause.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

**Titula / Title:**

Doc.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tomislav

**Ime i prezime / First and Last Name:-Last**

Vidović

## 80. Pejić Renato

**Naslov:**

Infestacija ljudskoj oka parazitima u regiji Hercegovine

**Autori:**

Pejić R.; Jakovac S.; Beck R.; Sesar I.

**Ustanova:**

Sveučilišna Klinička bolnica Mostar

**Cilj:**

Izvijestiti i prikazati tri slučaja infestacije ljudskog oka dijagnosticirana i liječena u Sveučilišnoj kliničkoj bolnici Mostar, Bosna i Hercegovina.

**Bolesnici i metode:**

Prikazujemo prvi morfološki i molekularno potvrđen slučaj oftalmomijaze čovjeka u ovom dijelu E urope, kao i slučaj oftalmomijaze uzrokovane infestacijom dirofilarijom i slučaj infestacije vjeđa s uši (demodex) u djeteta predškolske dobi.

**Rezultati:**

Neki paraziti mogu infestirati ljudsko oku taložeći ličinke i uzrokujući oftalmomijazu. Većina slučajeva oftalmomijaze povezana je s uzgojem ovaca tijekom ljeta, ali povremeno ljudi mogu postati sl učajni domaćini u nedostatku prirodnih domaćina. U takvim slučajevima dijagnoza i etiološko objašnjenje mogu biti izazov za oftalmologa jer se ovakvi slučajevi rijetko opisuju u literaturi, a mogu voditi i pogrešnoj dijagnozi. U našim slučajevima prikazujemo rezultate molekularne dijagnostike kao i video prikaze opisanih infestacija.

**Zaključak:**

Zbog nedostatka prirodnih domaćina, čak i gradsko/prigradsko stanovništvo, koje se prije nije smatralo rizičnim, može biti infestirano tijekom kratkotrajnog izlaganja u prirodi, kao u prikazanim slučajevima. Stoga ovdje pružamo naše kliničko iskustvo i preporuke za liječenje ovih rijetko opisanih slučajeva u urbanoj populaciji.

**Title:**

Infestation of the human eye due to parasites in the region of Herzegovina

**Authors:**

Pejić R., Jakovac S., Beck R., Sesar I.

**Institution:**

University Clinical Hospital Mostar, Bosnia and Herzegovina

**Aim:**

To report and present three cases of the human eye infestation observed and treated in University Clinical Hospital Mostar, Bosnia and Herzegovina

**Patients and methods:**

Here we present the first morphologically and molecularly confirmed case of ophthalmomyiasis in a human from Southeastern Europe, as well as a case of ophthalmomyiasis due to a dirofilaria infestation and a case of palpebral demodex infestation in a preschool child.

**Results:**

Several arthropods parasitize the human eye by depositing larvae and causing ophthalmomyiasis. Most cases of ophthalmomyiasis are associated with sheep farming during the summer, but occ

asionally, humans can become accidental hosts in the absence of natural hosts. In those cases, diagnosis and etiological explanation can be a challenge for an ophthalmology specialist since cases like this are rarely described in literature, and possibly lead to misdiagnosis. In our cases, we present the results of molecular diagnostics as well as video presentations of the described infestations.

**Conclusion:**

Due to a lack of natural hosts, even urban/suburban population, that previously was not considered to be at risk, can become infested during short time exposure in nature, as in presented cases. Therefore, here we provide our clinical experience and recommendations for management of these rarely described cases in urban population.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA ORBITU / Orbit section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Renato

**Ime i prezime / First and Last Name:-Last**

Pejic

## 81. Elizabeta Čmelak

### **Naslov:**

Salzmannova nodularna degeneracija-prikaz slučaja

### **Autori:**

Elizabeta Čmelak, dr. med.1, dr. sc. Dunja Bajtl, dr. med.2, Darije Čuržik, dr. med.2, Prof. dr.sc. Du bravka Biuk, dr. med.2·3, Prof. dr. sc. Josip Barać, dr. med.2·3, Senad Ramić, dr. med.4

### **Ustanova:**

1 Nacionalna memorijalna bolnica "Dr.Juraj Njavro" Vukovar 2 Klinika za očne bolesti, Klinički bolnički centar Osijek, Osijek 3 Medicinski fakultet, Sveučilište Josipa Jurja Strossmayera, Osijek 4 Klinika za očne bolesti, Klinička bolnica "Sveti Duh", Zagreb

### **Cilj:**

Prikazati pacijenta sa Salzmannovom nodularnom degeneracijom rožnice.

### **Bolesnici i metode:**

Pacijentica u dobi od 41 godinu pregledana je u hitnoj oftalmološkoj ambulanti Klinike za očne bolesti Kliničkog bolničkog centra Osijek zbog povremenog žuljanja i osjećaja stranog tijela u oba oka.

### **Rezultati:**

Pregledom prednjeg segmenta oka na biomikroskopu uočeni su bilateralni areali jasno ograničenih zamućenja rožnice koje djelomično prelaze u sivkaste prominirajuće nodule na perifernom

dijelu rožnice s jasnom zonom koja odvaja vanjski rub degeneracije od limbusa u oba oka, na 4-7 h na

desnom oku (DO), od čega je najveći 3 x 2 mm. Na lijevom oku (LO) patološke promjene locirane su na

7 h, dok su veličine oko 1,5 x 1,5 mm. Vidna os nije bila zahvaćena patološkim promjenama.

Fluoresceinskim testom uočeno je minimalna točkasto bojanje u donjem polu rožnice. Vidna oštrina bez

korekcije na oba oka je zabilježena 1,0 po Snellenu ( 0,0 po logMaru? Ostavila bih Snellen jer nisi koristila LogMar tablicu, one su drugačije). Prethodna oftalmološka anamneza, pregled okularnih adneksa, intraokularnog tlaka, kristaline leće i stražnjeg segmenta oka bio je bez osobitosti. Učinjena je

fotodokumentacija prednjeg segmenta. Optičkom koherentnom tomografijom prednjeg segmenta

prikazani su hiperreflektivni subepitelni depoziti iznad Bowmanova sloja prekriveni abnormalno stanjenim epitelom. Kornealnom tomografijom ističu se obilježja iregularnog astigmatizma, bez znakova

ektazije, uz nekoliko areala nodularno zadebljane rožnice, izraženije na DO. Keratometrijske vrijednosti

položnog radijusa zakrivljenosti rožnice (K1, D), najstrmijeg radijusa zakrivljenosti rožnice (K2, D) te

radijusa maksimalne zakrivljenosti rožnice (Km, D) zabilježeni su: DO: 45,3, 45,4, 45,5; LO: 45,2, 45,4,

45,3. Spekularnom mikroskopijom vidljiva je uredna gustoća i oblik endotelnih stanica (DO: gustoća stanica (CD) 2932/mm<sup>2</sup>, koeficijent varijacije (CV) 26 %, varijabilnost u heksagonalnom obliku (HE X)

66 %, centralna debljina rožnice (CCT) 558 µm; LO: CD 3062/mm<sup>2</sup>, CV 26%, HEX 61 %, CCT 543 µm).

Preporučena terapija bile su umjetne suze. Praćenjem pacijentice tijekom 2,5 god nije uočena progresija

bolesti niti pojačan subjektivan dojam smetnji.

**Zaključak:**

Salzmannova nodularna degeneracija rožnice je, iako rijedak dijagnostički entitet, bolest koju valja imati na umu kod smetnji povezanih sa osjećajem stranog tijela u oku.

**Title:**

Salzmann's nodular degeneration- a case report

**Authors:**

Elizabeta Čmelak, MD1, Dunja Bajtl, MD, PhD 2, Darije Čuržik, MD2, Prof. Dubravka Biuk, MD, PhD 2·3, Prof. Josip Barač, MD, PhD2·3, Senad Ramić, MD 4

**Institution:**

1 National Memorial Hospital " dr. Juraj Njavro" Vukovar 2 University Eye Department, University Hospital Centre Osijek, Osijek, Croatia 3 Faculty of Medicine, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia 4 University Eye Department, University Hospital "Sveti Duh", Zagreb, Croatia

**Aim:**

To present a patient with Salzmann's nodular degeneration of the cornea.

**Patients and methods:**

A 41-year-old female was examined in the emergency ophthalmology unit at the University Eye Department, University Hospital Centre Osijek due to occasional foreign body sensation in both eyes.

**Results:**

Examination of the anterior segment of the eye using a biomicroscope revealed bilateral areas of limited corneal opacities that partially transgress into grayish prominent nodules on the peripheral part of

the cornea with a clear zone separating the outer margin of the degeneration from the limbus in both eyes,

at 4-

7 o'clock in the right eye (RE), the largest of which is about 3 x 2 mm in size. In the left eye (LE) the pathological changes were located at 7 o'clock, while the size was about 1.5 x 1.5 mm. The fluorescein

test displayed minimal dot staining in the lower pole of the cornea. Visual axis was not affected. Visual

acuity without correction in both eyes measured 1.0 according to Snellen. Previous ophthalmologic

history, examination of the ocular adnexa, intraocular pressure, crystalline lens and the posterior eye

segment were unremarkable. Photo documentation of the anterior eye segment was performed.

Anterior segment optical coherence tomography showed hyperreflective subepithelial deposits above Bowman's layer covered by abnormally thinned epithelium. Corneal tomography revealed features of irregular astigmatism, without the signs of ectasia, along with several areas of nodular thickened cornea, more pronounced on the RE. The keratometric values of the flat radius of corneal curvature (K1, D), steep radius of corneal curvature (K2, D) and the radius of maximum corneal curvature (Km, D) were recorded as follows: RE: 45.3, 45.4, 45.5 ; LO: 45.2, 45.4, 45.3. Specular microscopy demonstrated regular density and shape of the endothelial cells (RE: cell density (CD) 2932/mm<sup>2</sup>, coefficient of variation (CV) 26 %, variability in hexagonal shape (HEX) 66 %, central corneal thickness (CCT) 558 μm; LE: CD 3062/mm<sup>2</sup>, CV 26 %, HEX 61 %, CCT 543 μm). Artificial tears and frequent eye lubrication were recommended. The patient was regularly monitored for 2.5 years and no progression of the disease was observed, nor did the subjective impression of disturbances increase.

**Conclusion:**

Salzmann's nodular degeneration of the cornea is, although a rare diagnostic entity, a disease that should be kept in mind in disorders associated with the sensation of a foreign body in the eye.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

POSTER SEKCIJA / Poster section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Elizabeta

**Ime i prezime / First and Last Name:-Last**

Čmelak

## 82. Josip Pavan

**Naslov:**

Primjena tehnologije antisens peptida u oftalmologiji

**Autori:**

Josip Pavan<sup>1</sup>, Nikola Štambuk<sup>2</sup>, Paško Konjevoda<sup>3</sup>

**Ustanova:**

<sup>1</sup>Zavod za očne bolesti, Klinička bolnica Dubrava, Zagreb, Hrvatska <sup>2</sup>Centar za NMR, Institut Ruđer Bošković, Zagreb, Hrvatska <sup>3</sup>Laboratorij za epigenomiku, Zavod za molekularnu medicinu, IRB, Zagreb, Hrvatska

**Cilj:**

x

**Bolesnici i metode:**

x

**Rezultati:**

Tehnologija antisens peptida (APT) temelji se na činjenici da se peptidi kodirani komplementarnim parovima aminokiselina međusobno vežu s većom vjerojatnošću i afinitetom od nasumično odabranih [1–

3]. Aminokiseline takvih peptidnih i proteinskih kompleksa mogu biti kodirane komplementarnim kodonima DNA i/ili RNA u oba smjera. Koncept interakcije matičnih peptida s njihovim antisens konstrukcijama razvili su ranih 1980-ih James Edwin Blalock i Robert Scott Root-

Bernstein [1,2]. Ovaj biološki fenomen usko je povezan sa strukturom tablice genetskog koda, a izveden je iz niza empirijskih opažanja o interakcijama komplementarnih peptida [1,2]. Sukladno navedenom, primjenu antisens peptida u kliničkoj i eksperimentalnoj medicini istraživale su brojne skupine i autori, pa je tijekom zadnja četiri desetljeća obrazac interakcije komplementarnih peptida eksperimentalno potvrđen za više od 50 različitih sustava liganda i njihovih receptora [1–5]. Posljedica ovog bio je razvoj nove skupine učinkovitih biomedicinskih postupaka temeljenih na tehnologiji kratkih peptida, a nedavno je potvrđena primjenjivost APT-

u području imunoeseja i imunohistokemije [1,5]. Tema našeg izlaganja je primjena APT-

u kliničkoj medicini, s naglaskom na dijagnostičke postupke. Predstaviti će se klasične primjere teorije molekularnog prepoznavanja temeljene na APT-

u, s posebnim osvrtom na bioaktivne peptidne hormone—

POMC, ACTH i lipotropin [2,3]. Zaključeno je da u skoroj budućnosti APT može dovesti do značajnih ušteda u vremenu i resursima—

pogotovo ukoliko se kombinira s postojećim računalnim i imunokemijskim metodama.

**Zaključak:**

x

**Title:**

Application of Antisense Peptide Technology in Ophthalmology

**Authors:**

Josip Pavan<sup>1</sup>, Nikola Štambuk<sup>2</sup>, Paško Konjevoda<sup>3</sup>

**Institution:**



1Department of Ophthalmology, University Hospital Dubrava, Zagreb, Croatia 2Center for Nuclear Magnetic Resonance, Ruđer Bošković Institute, Zagreb, Croatia 3Laboratory for Epigenomics, Division of Molecular Medicine, RBI, Zagreb, Croatia

**Aim:**

x

**Patients and methods:**

x

**Results:**

Antisense peptide technology (APT) is based on the empirical observation that peptides consisting of sense and antisense amino acids interact with higher probability and affinity than the randomly selected ones [1-3].

Sense and antisense amino acids of the peptides are coded by the complementary DNA and/or RNA codons. The concept of sense and antisense peptide interaction was developed in the early 1980s by James Edwin Blalock and Robert Scott Root-

Bernstein [1,2]. This biological phenomenon is closely related to the structure of the standard genetic code table and it was deduced from empirical observations [1,2]. Accordingly, sense and antisense peptide applications have been investigated by numerous research groups and authors, and during the last four decades this approach was experimentally verified for more than 50 ligand-acceptor (receptor) systems [1-5].

The applicability of APT was confirmed recently for immunoassays and immunohistochemistry [1,5], which opened a perspective for the development of a new class of efficient biomedical procedures based on short peptide technology. Our presentation deals with application of APT in Clinical Medicine, with special emphasis given to the diagnostic procedures. We will also present classic examples of APT based Molecular Recognition Theory dealing with POMC, ACTH and lipotropin derived bioactive peptides [2,3]. It is concluded that APT could lead to considerable savings in time and resources—

especially if combined with other computational and immunochemical methods.

1. Štambuk, N., Konjevoda, P., Pavan, J. Int. J. Mol. Sci. 2021, 22, 9106.
2. Štambuk, N., Konjevoda, P., Turčić, P., et al. BioSystems 2018, 164, 199.
3. Štambuk, N., Konjevoda, P., Boban-Blagaić, A. et al. Theory Biosci. 2005, 123, 265.
4. Štambuk, N., Manojlović, Z., Turčić, P., et al. Int. J. Mol. Sci. 2014, 15, 9209.
5. Štambuk, N., Konjevoda, P., Turčić, P., et al. Int. J. Mol. Sci. 2019, 20, 2090.

**Conclusion:**

x

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

**Titula / Title:**

Dr.

Specijalist / Specialist

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Josip

**Ime i prezime / First and Last Name:-Last**

Pavan

### 83. Katia Novak-Lauš

**Naslov:**

Dugoročni rezultati konvencionalne trabekulotomije u glaukomu dječje dobi

**Autori:**

Katia Novak-Lauš, Vedrana Vukić, Rašeljka Tadić, Tena Križ, Zoran Vataavuk

**Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb

**Cilj:**

Ispitati dugoročne rezultate konvencionalne trabekulotomije u glaukomu dječje dobi.

**Bolesnici i metode:**

U ovoj retrospektivnoj observacijskoj sudiji uključeni su pacijenti s glaukomom dječje dobi. Sva djeca su operirana metodom trabekulotomije, najmanje jednom, u dobi mlađoj od 3 godine, u razdoblju od 2016 i 2022 u Klinici za očne bolesti, KBC Sestre milosrdnice, Zagreb.

**Rezultati:**

Uključeno je 18 pacijenata (32 oka) i to 10 dječaka i 8 djevojčica, srednje životne dobi  $2,8 \pm 5,1$  mjeseci. 18 očiju (58%) je imalo primarni kongenitalni glaukom (PCG), a 14 očiju (42%) sekundarni glaukom (SCG). Prosječni broj operativnih zahvata kod ove dvije vrste glaukoma iznosio je  $1,4 \pm 0,7$  i  $2,1 \pm 0,8$ . Stopa kirurškog uspjeha trabekulektomije kod ove dvije vrste glaukoma statistički se značajno razlikovala ( $p < 0.001$ ). Statistička analiza je pokazala da oči s PCG-om su uspješno operirane jednom ili sa dvije trabekulotomije, u usporedbi s očima koje su imale SCG-om.

**Zaključak:**

Oči s PCG-om uspješno su operirane s jednom ili s najviše dvije trabekulotomije. Oči s SCG-om obično su refraktorne na trabekulotomiju i moraju se primjeniti druge operativne metode.

**Title:**

Long-term surgical outcome of conventional trabeculotomy for childhood glaucoma

**Authors:**

Katia Novak-Lauš, Vedrana Vukić, Rašeljka Tadić, Tena Križ, Zoran Vataavuk

**Institution:**

Department of Ophthalmology, Sestre milosrdnice Clinical Hospital Center, Zagreb

**Aim:**

To investigate the long-term surgical outcomes of conventional trabeculotomy in childhood glaucoma.

**Patients and methods:**

: In this retrospective observational study, we enrolled patients with childhood glaucoma who underwent a conventional trabeculotomy at least once before age 3 years from 2016 to 2022 in the Department of Ophthalmology, Sestre milosrdnice Clinical Hospital Center, Zagreb.

**Results:**

32 eyes of 18 patients (10 boys and 8 girls, mean age  $2.8 \pm 5.1$  months) were included. 18 eyes (58%) had primary childhood glaucoma (PCG) and 14 eyes (42%) had secondary childhood glaucoma (SCG). The average numbers of surgical operations performed to treat the two glaucoma types that resulted in significantly ( $p < 0.001$ ) different surgical success rates were  $1.4 \pm 0.7$  and  $2.1 \pm 0.8$ . S

tatistical analysis showed that eyes with PCG, compared with those with SCG, were successfully treated by one trabeculotomy and up to two trabeculotomies.

**Conclusion:**

Most of the eyes with PCG are treatable with a maximum of two trabeculotomies. However, SCG usually is refractory to trabeculotomy, and a more promising surgery must be designed.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Novak-Lauš

**Ime i prezime / First and Last Name:-Last**

Katia

## 84. Vukić Vedrana

**Naslov:**

Odnos između aksijalne duljine očne jabučice, dobi i kontrole intraokularnog tlaka u djece s primarnim kongenitalnim glaukomom

**Autori:**

Vukić V, Novak-Lauš K, Tomić Z, Vataavuk Z

**Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar "Sestre milosrdnice", Zagreb, Hrvatska

**Cilj:**

Procijeniti kliničku vrijednost aksijalne duljine (AD) očne jabučice u operirane djece s primarnim kongenitalnim glaukomom (PKG) i uspješno kontroliranim postoperativnim intraokularnim tlakom (IOT)

**Bolesnici i metode:**

U klinici za očne bolesti Kliničkog bolničkog centra „Sestre milosrdnice“ provedeno je retrospektivno istraživanje među pedijatrijskim ispitanicima s dijagnozom PKG-a. Svi ispitanici operirani su metodom trabekulotomije. Procjena kliničkih podataka obavljena je prije operacije te tri, šest i dvanaest mjeseci nakon operacije i na zadnjem kontrolnom pregledu. Vrijednosti AD-e očne jabučice uspoređivale su se s normativnim podacima za AD-e očne jabučice u pedijatrijskoj populaciji prema Sampaolesiju.

**Rezultati:**

Tijekom 6 godina praćenja, kod 10 ispitanika (18 očiju) dijagnosticiran je PKG. Prosječna dob ispitanika u trenutku dijagnoze bila je  $6,2 \pm 8,0$  mjeseci, s odgodom u dijagnostici od oko 2 mjeseca. Prosječno razdoblje praćenja bilo je 32,4 mjeseca. U 6 očiju IOT je kontroliran jednom trabekulotomijom, od kojih su 2 oka zahtijevala dodatnu antiglaukomsku terapiju, a u 12 očiju s dvije trabekulotomije, od kojih je 6 očiju zahtijevalo dodatnu antiglaukomsku terapiju. Prosječni IOT bio je  $17,68 \pm 5,31$  mmHg prije operacije i  $6,16 \pm 2,42$  mmHg na završnom kontrolnom pregledu. Prosječna AD očne jabučice preoperativno je bila  $23,88 \pm 2,71$  mm i  $24,22 \pm 2,26$  mm na zadnjem kontrolnom pregledu. Sve su razlike bile statistički značajne ( $P < 0,002$ ). U svih ispitanika, vrijednosti AD-e očne jabučice prije i nakon liječenja bile su usporedive s normativnim podacima vezanim uz dob. Mjerenja prije i poslije operativnog zahvata bila su u pozitivnoj korelaciji ( $P < 0,009$ ).

**Zaključak:**

AD očne jabučice u djece vrlo je vrijedan parametar u dijagnostici i praćenju operirane djece s dijagnozom PKG-a. Kontrola IOT-a imala je pozitivan učinak na AD-u očne jabučice u ispitanika s PKG-om.

**Title:**

The relationship between the axial length of the eye, age and intraocular pressure control in children with primary congenital glaucoma

**Authors:**

Vukic V, Novak-Laus K, Tomic Z, Vataavuk Z

**Institution:**

Department of Ophthalmology, "Sestre milosrdnice" Clinical Hospital Center, Zagreb, Croatia

**Aim:**

To evaluate the clinical value of the axial length (AL) of the eyes in congenital glaucoma-operated children (PCG) with successfully postoperative controlled intraocular pressure (IOP).

**Patients and methods:**

A retrospective study was conducted at the Department of Ophthalmology, "Sestre milosrdnice" Clinical Hospital Center, among pediatric patients with a diagnosis of PCG. All patients were operated using the trabeculotomy method. The evaluation of clinical data was performed before the operation and three, six and twelve months after the operation and at the last control examination. The values of the AL of the eye were compared with the normative data for the AL of the eye in the pediatric population according to Sampaolesi.

**Results:**

During 6 years of follow-up, 10 patients (18 eyes) were diagnosed with PCG. The mean age of the patients at the time of diagnosis was  $6.2 \pm 8.0$  months, with a diagnostic delay of about 2 months. The mean follow-up period was 32.4 months. In 6 eyes, IOP was controlled with one trabeculotomy, of which 2 eyes required additional antiglaucoma therapy, and in 12 eyes with two trabeculotomies, of which 6 eyes required additional antiglaucoma therapy. The mean IOP was  $17.68 \pm 5.31$  mmHg before surgery and  $6.16 \pm 2.42$  mmHg at the final follow-up examination. The mean AL of the eyes before surgery was  $23.88 \pm 2.71$  mm and  $24.22 \pm 2.26$  mm at the last follow-up examination. All differences were statistically significant ( $P < 0.002$ ). In all patients, the values of AL of the eyes before and after treatment were compared with age-related normative data. Measurements before and after surgery were positively correlated ( $P < 0.009$ ).

**Conclusion:**

The AL of the eyes in children is a valuable parameter in the diagnosis and follow-up of congenital glaucoma-operated children. IOP control had a positive effect on the axial length of the eyes in patients with congenital glaucoma.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Vedrana

**Ime i prezime / First and Last Name:-Last**

Vukić

## 85. Tomislav Domović

**Naslov:**

Masivni unilateralni edem vjeđa u bolesnika sa kroničnom mijeloičnom leukemijom

**Autori:**

Tomislav Domović, dr.med., Nikolina Vinko Zamuda, dr.med., doc.dr.sc. Jelena Juri Mandić, dr.med.

**Ustanova:**

Klinika za očne bolesti, Medicinski fakultet Sveučilišta u Zagrebu, Klinički bolnički centar Zagreb

**Cilj:**

Prikaz slučaja bolesnika sa kroničnom mijeloičnom leukemijom koji se prezentira sa unilateralnim edemima vjeđa i povišenim intraokularnim tlakom te ostalim kliničkim znakovima preseptalnog celulitisa.

**Bolesnici i metode:**

Muškarac sa kroničnom mijeloičnom leukemijom koji se zbog akutno nastalog unilateralnog edema vjeđa javlja u Objedinjeni hitni bolnički prijem Kliničkog bolničkog centra Zagreb.

**Rezultati:**

Anamnestički se saznaje da se bolesnik liječi zbog kronične mijeloične leukemije koja mu je dijagnosticirana prije 7 godina. Inicijalnim kliničkim pregledom i kasnijim praćenjem ustanovi se potpuna opstrukcija lijevog oka edematoznim vjeđama i povišen intraokularni tlak dok su ostali funkcionalni nalazi uredni.

**Zaključak:**

Diferencijalna dijagnoza promjena u periokularnom području etiološki je vrlo široka. Razvojem farmakološke industrije i sve širom primjenom bioloških lijekova koji se u svom djelovanju koriste blokadom ili aktivacijom određenih imunoloških puteva neminovno utječemo na međuođnos imunoloških varijabli što dovodi do razvoja nespecifičnih nuspojava i dodatno otežava dijagnostiku.

**Title:**

Massive unilateral eyelid oedema in a patient with chronic myeloid leukaemia

**Authors:**

Tomislav Domović, M.D., Nikolina Vinko Zamuda, M.D., Assistant Professor Jelena Juri Mandić, M.D.

**Institution:**

Department of Ophthalmology, School of Medicine, University of Zagreb, University Hospital Centre Zagreb

**Aim:**

To present a case of patient with chronic myeloid leukaemia who presented with acute unilateral eyelid oedema, ipsilaterally raised intraocular pressure and other clinical signs of preseptal cellulitis.

**Patients and methods:**

Male patient with chronic myeloid leukaemia who presented with acute unilateral eyelid oedema to Emergency department, University Hospital Centre Zagreb.

**Results:**

Medical history reveals that the patient is under treatment for chronic myeloid leukaemia which he was diagnosed with 7 years ago. Through initial clinical examination and subsequent follow up complete left eye obstruction due to edematous eyelids and unilaterally raised intraocular pressure are found whereas other functional findings are normal.

**Conclusion:**

Differential diagnosis of periocular changes is etiologically broad. Development of biopharmaceutical industry and more frequent use of biological therapy which blocks or activates specific immunological pathways inevitably influence interrelation of immunological variables leading to nonspecific side effects and diagnostic challenges.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Tomislav

**Ime i prezime / First and Last Name:-Last**

Domović

## 86. Krešo Ante

**Naslov:**

Kombinirani pristup u liječenju neovaskularnog glaukoma primjenom anti-VEGF terapije i transskleralnom krioretinokoagulacijom putem

**Autori:**

Krešo A, Batistić D, Bućan K

**Ustanova:**

KBC Split

**Cilj:**

Prikazati našu tehniku liječenja neovaskularnog glaukoma otvorenog kuta kod pacijenta s nedostatkom vizualizacijom periferne retine

**Bolesnici i metode:**

3 pacijenta s proliferativnom dijabetičkom retinopatijom koji su se prezentirali s rubeozom šarenice i povišenim intraokularnim tlakom. Urađena je transskleralna krioretinokoagulacija kako bi se smanjila produkcija VEGF-a iz ishemične retine. 2 pacijenta su imala slabu midrijazu u sklopu pseudofakije, a 1 kapsularnu fibrozu, te je pristup periferne retine laserkoagulaciji bio onemogućen. 4 tjedna prije krioretinokoagulacije apliciran je intravitrealni bevacizumab. Na operativni dan uz krioretinopeksiju je također apliciran intravitrealni bevacizumab.

**Rezultati:**

4 tjedna nakon postupka, intraokularni tlak je bio uredan, kut prednje očne sobice otvoren, a neovaskularizacije šarenice su regresirale

**Zaključak:**

Upotrebom ove tehnike možemo imati dodatni alat za kontrolu ishemične retine kod pacijenata s neprozirnim optičkim medijima i slabijim postizanjem midrijaze.

**Title:**

Combined approach in the treatment of neovascular glaucoma using anti-VEGF therapy and biome-guided transscleral cryoretinocoagulation

**Authors:**

Kreso A, Batistic D, Bucan K

**Institution:**

Clinical hospital center Split

**Aim:**

To present our technique for the treatment of neovascular open-angle glaucoma in a patient with insufficient visualization of the peripheral retina

**Patients and methods:**

3 patients with proliferative diabetic retinopathy who presented with rubeosis of the iris and elevated intraocular pressure. Transscleral cryoretinocoagulation was performed to reduce VEGF production from the ischemic retina. 2 patients had insufficient mydriasis as part of pseudophakia, and 1 had capsular fibrosis, so access to the peripheral retina for laser coagulation was impossible. Intravitreal bevacizumab was applied 4 weeks before cryoretinocoagulation. On the operative day, along with cryoretinopexy, intravitreal bevacizumab was also applied.



**Results:**

4 weeks after the procedure, the intraocular pressure was normal, the angle of the anterior chamber opened, and the iris neovascularizations regressed.

**Conclusion:**

By using this technique, we can have an additional tool for controlling the ischemic retina in patients with opaque optical media and poor mydriasis.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ante

**Ime i prezime / First and Last Name:-Last**

Krešo

## 87. Sara Tibauth

**Naslov:**

Kompresivna optikoneuropatija kod pacijentice sa glaukomom otvorenog kuta

**Autori:**

Sara Tibauth dr.med., Ines Donadić Manestar dr.med., prof.dr.sc.Tea Čaljkušić-Mance dr.med.

**Ustanova:**

KBC Rijeka

**Cilj:**

Glaukom je kronična progresivna optikoneuropatija koja dovodi do propadanja vidnog polja i gubitkom vidne funkcije. Cilj rada je ukazati na druge uzroke progresije bolesti.

**Bolesnici i metode:**

prikaz slučaja 73-

godišnje pacijentice sa glaukomom otvorenog kuta i dobro reguliranim intraokularnim tlakom koja se žali na progresivno slabljenje vida. Kod pacijentice dolazi do pada vidne funkcije, progresivnog propadanja vidnog polja, promjena na OCT-

u te gubitka kolornog vida. Pacijentica ima i druge komorbiditete; nema neurološke ispade niti glaukoma.

**Rezultati:**

Proširenom neuroradiološkom obradom utvrđeno je postojanje ekspanzivne tvorbe u području planuma sfenoidale sa kompresijom vidnog puta.

**Zaključak:**

Progresivno slabljenje vida, propadanje vidnog polja i gubitak ganglijskih stanica kod dobro reguliranog intraokularnog tlaka treba pobuditi sumnju na druge uzroke progresije bolesti te zahtijeva daljnju obradu.

**Title:**

Compressive optic neuropathy in a patient with open-angle glaucoma

**Authors:**

Sara Tibauth dr.med., Ines Donadić Manestar dr.med., prof.dr.sc.Tea Čaljkušić Mance, dr.med.

**Institution:**

Clinical Hospital Centre Rijeka

**Aim:**

Glaucoma is a chronic progressive optic neuropathy that leads to deterioration of the visual field and loss of visual function. The aim of the work is to indicate other causes of disease progression.

**Patients and methods:**

Case report of a 73-year-old patient with open-angle glaucoma and well-regulated intraocular pressure who complains of progressive vision loss. The patient has a progressive deterioration of the field of vision, changes on the OCT and loss of color vision. The patient has other comorbidities; but no neurological breakdown or headache.

**Results:**

An extended neuroradiological examination revealed the presence of an expansive formation in the area of the sphenoidal planum with compression of the optic tract.

**Conclusion:**

Progressive weakening of vision, deterioration of the visual field and loss of ganglion cells with well-regulated intraocular pressure should arouse suspicion of other causes of disease progression and require further treatment.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Sara

**Ime i prezime / First and Last Name:-Last**

Tibauth

## 88. Bagatin Freja

**Naslov:**

CILJNA REFRAKCIJA I POSTOPERACIJSKI POMAK KOD OPERACIJE KATARAKTE

**Autori:**

Bagatin F, Ivekovic R, Randelović K, Radman I, Lacmanović Lončar V, Petric Vicković I, Vatavuk Z

**Ustanova:**

KBC Sestre milosrdnice

**Cilj:**

Postoperativna refraktivna greška što je moguće bliža ciljnoj preoperativnoj target refrakciji ključna je pri izvođenju operacije katarakte s implantacijom intraokularne leće (IOL). Rezidualni astigmatizam i refrakcijske pogreške negativno utječu na vid i zadovoljstvo pacijenata.

**Bolesnici i metode:**

Studija je uključila pacijente koji su bili podvrgnuti rutinskoj fakoemulzifikaciji s implantacijom monofokalne intraokularne leće (IOL). Preoperativno smo izračunali jačinu IOL-a i odredili target refrakciju, izmjerili dubinu prednje sobice, aksijalnu duljinu bulbusa, središnju debljinu rožnice, bijelo-na-bijelo (WTW) i širinu zjenice. Ciljana postoperativna refraktivna greška bila je u rasponu od -0,75 D - 0,0 D. Nakon tjedan i mjesec dana postoperativno, provjerili smo položaj IOL-a i refrakciju te usporedili pomak IOL-a i promjenu u postoperativnoj refrakciji. Procijenjeno je i zadovoljstvo pacijenata postignutom vidnom oštrinom.

**Rezultati:**

Uključili smo 30 očiju od 30 operiranih pacijenata. Analizirani su podaci o demografiji bolesnika, vrsti operacije, snazi IOL-a, biometriji, preoperativnoj i postoperativnoj oštrini vida. Deskriptivna analiza i hi-kvadrat test provedeni su kako bi se odredila srednja vrijednost, medijan, standardna devijacija i relevantne povezanosti. Prosječna dob bila je  $63,7 \pm 12,1$  godina. 79-94% pacijenata postiglo je postoperativnu refrakciju unutar 0,5 D i 1,0 D od planiranog cilja. Kratkovidnost i složeni miopijski astigmatizam bili su dominantni ishodi refrakcijske pogreške.

**Zaključak:**

Za rutinsku unilateralnu operaciju katarakte s implantacijom monofokalnih IOL, ciljna refrakcijska greška za postizanje emmetropije bila je u rasponu od -0,75 D do -0,50 D.

**Title:**

TARGET REFRACTION AND POSTOPERATIVE SHIFT IN CATARACT SURGERY

**Authors:**

Bagatin F, Ivekovic R, Randelović K, Radman I, Lacmanović Lončar V, Petric Vicković I, Vatavuk Z

**Institution:**

KBC Sestre milosrdnice

**Aim:**

A post-operative manifest refractive error as close as possible to target is key when performing cataract

surgery with intraocular lens (IOL) implantation, given that residual astigmatism and refractive errors negatively impact patients' vision and satisfaction.

**Patients and methods:**

The study included patients who underwent routine phacoemulsification with clear corneal incisions and implantation of a foldable monofocal intraocular lens (IOL). We preoperatively measured biometry, anterior chamber depth (ACD), axial length (AL), central corneal thickness (CCT) white-to-white (WTW) and pupil size. Target postoperative refractive error was in the range of -0.75 D - 0.0 D. At 1 week and 1 month postoperatively, we checked IOL position and refraction and compared the IOL shift and refraction change. Also the patients satisfaction with vision was assessed.

**Results:**

Of 30 patients, 30 eyes were investigated. Data on patient demographics, type of surgery, IOL power, biometry, postoperative refraction outcomes, pre- and postoperative visual acuity were analyzed. Descriptive analysis and Chi-square test were carried out to determine the mean, median, standard deviation and relevant associations. Mean age was  $63.7 \pm 12.1$  years. 79-94% of patients achieved postoperative refractions within 0.5 D and 1.0 D of the intended target. Myopia and compound myopic astigmatism were the dominant refractive error outcomes.

**Conclusion:**

For routine unilateral cataract surgery with implantation of monofocal IOLs, target refractive error to achieve emmetropia was in the range of -0,75 D to - 0,50 D

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Freja

**Ime i prezime / First and Last Name:-Last**

Bagatin

## 89. Massimo Bembić

**Naslov:**

KOMBINIRANO LIJEČENJE PUNKTIFORMNE UNUTARNJE KOROIDOPATIJE SA KOROIDALNIM NEOVASKULARIZACIJAMA

**Autori:**

Massimo Bembić, prof. dr. sc. Nenad Vukojević

**Ustanova:**

Odjel za oftalmologiju i optometriju, OB Pula/ Klinika za očne bolesti, KBC Zagreb

**Cilj:**

Opisati kombinirano liječenje koroidalnih neovaskularizacija (CNV) kod pacijentice s punktiformnom unutarnjom koroidopatijom (PIC).

**Bolesnici i metode:**

Četrdesetogodišnja emetropna pacijentica javlja se na Kliniku zbog oštećenja vida lijevog oka i dijagnosticira se PIC s razvojem CNV-

a. Započinje se liječenje peroralnim kortikosteroidima uz gastrointestinalnu protekciju i intravitrealnim injekcijama inhibitora vaskularnog endotelog faktora rasta (antiVEGF) – bevacizumaba.

**Rezultati:**

Sistemna steroidna terapija uz intravitrealnu primjenu bevacizumaba u 3 serije dovela je do remisije CNV-

a i poboljšanja centralne vidne oštine. Također, kroz daljnje praćenje kroz 3 godine nije došlo do povrata bolesti.

**Zaključak:**

Kombinirano liječenje peroralnim kortikosteroidima i antiVEGF injekcijama pokazala se efikasnom opcijom u liječenju CNV-a kao komplikacije PIC-a.

**Title:**

COMBINED TREATMENT OF CHOROIDAL NEOVASCULARIZATIONS IN PUNCTATE INNER CHOROID OPATHY

**Authors:**

Massimo Bembić, prof. dr. sc. Nenad Vukojević

**Institution:**

Department of Ophthalmology and optometry, General hospital Pula/ University Department of Ophthalmology, University Hospital Centre Zagreb

**Aim:**

To describe a treatment of choroidal neovascularizations (CNV) in a patient associated with punctate inner choroidopathy (PIC).

**Patients and methods:**

A 40-year-

old emmetropic woman reported to the clinic because of visual impairment in the left eye. PIC complicated by the development of CNV was diagnosed. Treatment included oral steroid therapy with gastrointestinal protection and intravitreal injections of the vascular endothelial growth factor inhibitor (anti-VEGF) – bevacizumab.

**Results:**

Systemic steroid therapy combined with intravitreal injections of bevacizumab in 3 series resulted in remission of CNV and improvement of visual acuity. Since then, the condition has remained over a follow-up period of 3 years.

**Conclusion:**

The combined use of oral steroids and anti-VEGF medications may be a very beneficial option for the treatment of CNV as a complication of PIC.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Massimo

**Ime i prezime / First and Last Name:-Last**

Bembić

## 90. Toma Babić

**Naslov:**

Transpupilarna termoterapija (TTT) u liječenju ekstrafoveolarnih korodjalnih hemangioma

**Autori:**

Toma Babić, prof.dr.sc. Nenad Vukojević

**Ustanova:**

KB Merkur / KBC Zagreb

**Cilj:**

Cilj je prikazati uspješnost liječenja ekstrafoveolarnih korodjalnih hemangioma transpupilarnom termoterapijom kod serija pacijenata.

**Bolesnici i metode:**

Biti će prikazani rezultati liječenja kod 5 pacijenata različite dobi i spola. Svi pacijenti imaju postavljenu dijagnozu koroidalnog hemangioma ekstrafoveolarne lokalizacije te su liječeni transpupilarnom termoterapijom.

**Rezultati:**

Uspješnost rezultata i njihova statistička značajnost biti će prikazana naknadno s obzirom da je dio pacijenata još uvijek u observaciji do travnja 2023. godine.

**Zaključak:**

Zaključak istraživanja biti će prikazan na Kongresu po završetku rezultata.

**Title:**

Transpupillary thermotherapy (TTT) in the treatment of extrafoveolar choroidal hemangiomas

**Authors:**

Toma Babić, prof.dr.sc. Nenad Vukojević

**Institution:**

KB Merkur / KBC Zagreb

**Aim:**

The aim is to demonstrate the success of treatment of extrafoveolar choroidal hemangiomas with transpupillary thermotherapy in a series of patients.

**Patients and methods:**

The results of treatment in 5 patients of different age and gender will be presented. All patients were diagnosed with extrafoveolar choroidal hemangioma and were treated with transpupillary thermotherapy.

**Results:**

The success of the results and their statistical significance will be shown later, given that part of the patients are still under observation until April 2023.

**Conclusion:**

The conclusion of the research will be presented at the Congress upon completion of the results.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section



**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Toma

**Ime i prezime / First and Last Name:-Last**

Babić

## 91. Bulat Iva

**Naslov:**

Amiloidoza orbite – prikaz slučaja

**Autori:**

Bulat I, Kuzmanović Elabjer B, Miletić D, Bušić M

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J.J. Strossmayera u Osijeku Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice

**Cilj:**

Ukazati na važnost amiloidoze u diferencijalnoj dijagnozi lezija orbite

**Bolesnici i metode:**

23-

godišnja pacijentica javila se u hitnu oftalmološku službu s bezbolnom palpabilnom masom nalik kvrgi u desnoj superonazalnoj anteriornoj orbiti koju je primijetila prije mjesec dana. Nije bilo boli osim na palpaciju, bolesnica je negirala glavobolju, nije imala prethodnu traumu ili nedavno preboljenu infektivnu bolest. Pregled nije pokazao nikakve abnormalnosti osim minimalne konjunktivalne injekcije na biomikroskopiji i edema desne gornje vjeđe s minimalnim eritemom. Na direktnom transverzalnom prikazu na ultrazvuku oka i orbite vidio se niskoehogeni ovalni defekt prednjeg orbitalnog eha bez propagacije zvuka u etmoidne sinuse, a na transbulbarnom B-prikazu vidio se ekstrakonični niskoehogeni defekt orbitalnog eha. Na standardiziranoj ehografiji, na A-prikazu lezija je bila srednje visoke unutarnje ehogenosti sa srednjim kutom kappa.

**Rezultati:**

Na temelju ultrazvučnih karakteristika, odbačeno je nekoliko diferencijalnih dijagnoza. Učinjena je incizijska biopsija, a amiloidoza je potvrđena pozitivnim bojanjem Congo crvenilom na histopatološkim pregledima i zelenom dvolomnošću na polariziranoj mikroskopiji.

**Zaključak:**

Iako se amiloidoza najčešće javlja kod osoba srednje životne dobi, može se javiti i kod mladih pacijenata. Nadalje, ova bolest ima širok raspon mogućih manifestacija s različitim simptomima i znakovima, što može predstavljati dijagnostički izazov. Ako se dokaže lokalizirana okularna ili orbitalna amiloidoza, potrebno je isključiti sustavnu bolest, a zbog progresivnosti bolesti potrebno je dugotrajno i redovito kontrolirati bolesnika. Konačno, korištenje standardizirane ehografije može nam uvelike pomoći u isključivanju mnogih diferencijalnih dijagnoza.

**Title:**

Orbital amyloidosis – case report

**Authors:**

Bulat I, Kuzmanović Elabjer B, Miletić D, Bušić M

**Institution:**

University Eye Department, University Hospital “Sveti Duh”, Zagreb, Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek Reference center of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strab

ismus Reference center of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To raise awareness of amyloidosis in the differential diagnosis of orbital lesions

**Patients and methods:**

A 23-year-old female patient presented with a painless palpable bump-like mass in the right superonasal anterior orbit that appeared one month ago. There was no pain except on palpation, the patient denied headache, and she had no previous trauma or recent infectious disease. Examination showed no abnormalities except minimal conjunctival injection on biomicroscopy and edema of the right upper eyelid with minimal erythema. Direct transversal scan documented a low-reflective oval defect of the anterior orbital fat without propagation of the sound to the ethmoidal sinus, and transbulbar B-scan depicted extraconal low-reflective defect of the orbital echo. On standardized A-scan echography, the lesion was medium-high reflective with medium-angle kappa.

**Results:**

Several differential diagnoses were dismissed based on ultrasound characteristics. Incisional biopsy was performed, and amyloidosis was confirmed by positive Congo Red staining on histopathology and apple-green birefringence on polarized light microscopy.

**Conclusion:**

Although amyloidosis most often occurs in middle-aged people, it can also occur in young patients. Furthermore, this disease has a wide range of possible presentations with different symptoms and signs, which can be a diagnostic challenge. If localized ocular or orbital amyloidosis is proven, it is necessary to rule out a systemic disease and, due to the progressive nature of the disease, it is necessary to monitor patients for a long time and regularly. Finally, using standardized echography can greatly help us in ruling out many differential diagnoses.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Iva

**Ime i prezime / First and Last Name:-Last**

Bulat

## 92. Prpić Ante

### **Naslov:**

Povezanost između površinske gustoće krvnih žila, debljine sloja živčanih vlakana i gubitka vidnog polja u primarnom glaukomu otvorenog kuta i pseudoeksfolijativnom glaukomu

### **Autori:**

Prpić Ante, Ferček Iva, Novak-Lauš Katia, Vataavuk Zoran

### **Ustanova:**

Klinika za očne bolesti, Klinički bolnički centar Sestre milosrdnice, Zagreb

### **Cilj:**

Ispitati peripapilarnu i makularnu gustoću površinskih krvnih žila, peripapilarnu debljinu sloja živčanih vlakana i unutarnju debljinu makule u očiju s primarnim glaukomom otvorenog kuta (POAG) i pseudoeksfolijativnim (PEX) glaukomom ovisno o oštećenju vidnog polja.

### **Bolesnici i metode:**

U istraživanju je sudjelovalo 100 očiju liječenih u Klinici za očne bolesti Kliničkog bolničkog centra Sestre milosrdnice, Zagreb u periodu od srpnja 2022. do veljače 2023. Ukupno 50 očiju je dijagnosticirano kao POAG, a 50 kao PEX glaukom. Obje istraživane skupine su podijeljene u 3 podskupine prema Hodappovoj klasifikaciji stupnjevanja oštećenja vidnog polja: rano glaukomsko oštećenje (21 oko), umjereno glaukomsko oštećenje (12 očiju) i uznapredovalo glaukomsko oštećenje (17 očiju). Svim pacijentima je učinjena optička koherentna tomografija (OCT) angiografija glave vidnog živca i makule na uređaju RTVue XR Avanti (Optovue, Inc, Fremont, California, USA) te je uspoređivana radijalna peripapilarna kapilarna gustoća krvnih žila (RPC), gustoća površinskih krvnih žila i makule (SMVD), peripapilarna debljina sloja živčanih vlakana (pRNFL) i debljina makule između unutrašnje granične membrane i unutarnjeg zrnatog sloja (ILM-IPL). Obje skupine su bile ekvivalentne po spolu, godinama i stupnju oštećenja vidnog polja.

### **Rezultati:**

Ukupna prosječna vrijednost pRNFL je statistički značajno bila veća u očiju s POAG (328,52  $\mu\text{m}$ ) u usporedbi s očima s PEX glaukomom (81,03  $\mu\text{m}$ ). Ukupne prosječne vrijednosti RPC, SMVD i ILM-IPL nisu pokazale statistički značajnu razliku. Što je oštećenje vidnog polja unutar skupine bilo veće to su sve mjerene vrijednosti statistički značajno bile niže. U skupini očiju s POAG i s obzirom na oštećenje vidnog polja izmjerene vrijednosti su bile sljedeće: RPC 51,49% / 41,25% / 30,49%, SMVD 96,89% / 78,88% / 56,31%, pRNFL 438,86  $\mu\text{m}$  / 313,08  $\mu\text{m}$  / 203,12  $\mu\text{m}$  i ILM-IPL 36,64  $\mu\text{m}$  / 39,52  $\mu\text{m}$  / 29,88  $\mu\text{m}$ . U skupini očiju s PEX vrijednosti su bile sljedeće: RPC 49,08% / 39,19% / 31,94%, SMVD 94,6% / 76,87% / 59,26%, pRNFL 98,34  $\mu\text{m}$  / 78,75  $\mu\text{m}$  / 61,25  $\mu\text{m}$  i ILM-

IPL 39,54  $\mu\text{m}$  / 33,18  $\mu\text{m}$  / 31  $\mu\text{m}$ . U obje skupine unutar podskupina pad vrijednosti RPC je pozitivno korelirao s padom vrijednosti pRNFL kao i pad vrijednosti SMVD i ILM-IPL. Također su pozitivno korelirale i promjene vrijednosti pRNFL i ILM-IPL te RPC i SMVD.

### **Zaključak:**

Oči s PEX glaukomom imaju niže vrijednosti peripapilarne debljine sloja živčanih vlakana u usporedbi s očima s POAG-om. Nije pronađena statistički značajna razlika između ispitivanih skupina i podskupina u gustoći peripapilarnih i makularnih površinskih krvnih žila kao niti unutarnje debljine makule. Što je ošte-

ćenje vidnog polja veće u obje skupine to je gustoća peripapilarnih i makularnih površinskih krvnih žila manja te su vrijednosti peripapilarne debljine sloja živčanih vlakana i unutarnje debljine makule niže.

**Title:**

Association between superficial vessel density, retinal nerve fiber layer thickness and visual field loss in primary open-angle and pseudoexfoliative glaucoma

**Authors:**

Prpić Ante, Ferček Iva, Novak-Lauš Katia, Vataavuk Zoran

**Institution:**

Clinic for Eye Diseases, University Hospital Center Sestre milosrdnice, Zagreb

**Aim:**

To examine the peripapillary and macular density of surface blood vessels, the peripapillary thickness of the nerve fiber layer and the inner thickness of the macula in eyes with primary open-angle glaucoma (POAG) and pseudoexfoliative glaucoma (PEX) depending on the visual field impairment.

**Patients and methods:**

The research involved 100 eyes treated at the Clinic for Eye Diseases of the University Hospital Center Sestre milosrdnice, Zagreb in the period from July 2022 to February 2023. A total of 50 eyes were diagnosed as POAG and 50 as PEX glaucoma. Both investigated groups were divided into 3 subgroups according to Hodapp's classification of visual field impairment: early glaucomatous impairment (21 eyes), moderate glaucomatous impairment (12 eyes) and advanced glaucomatous impairment (17 eyes). All patients underwent optical coherence tomography (OCT) angiography of the optic nerve head and macula on the RTVue XR Avanti device (Optovue, Inc, Fremont, California, USA) and radial peripapillary capillary (RPC) density, superficial macular vascular density (SMVD), peripapillary nerve fiber layer (pRNFL) thickness and macular thickness between the inner limiting membrane and the inner granular layer (ILM-IPL) were compared. Both groups were equivalent in terms of gender, age and degree of visual field impairment.

**Results:**

The overall mean value of pRNFL thickness was statistically significantly higher in eyes with POAG (328.52 µm) compared to eyes with PEX (81.03 µm). The overall mean values of RPC density, SMVD and ILM-

IPL did not show a statistically significant difference. The greater the visual field damage within the group, the statistically significantly lower all measured values were. In the group of eyes with POAG, and with regard to visual field impairment, the measured values were as follows: RPC density 51.49% / 41.25% / 30.49%, SMVD 96.89% / 78.88% / 56.31%, pRNFL thickness 438.86 µm / 313.08 µm / 203.12 µm and ILM-

IPL 36.64 µm / 39.52 µm / 29.88 µm. In eyes with PEX glaucoma the values were as follows: RPC density 49.08% / 39.19% / 31.94%, SMVD 94.6% / 76.87% / 59.26%, pRNFL thickness 98.34 µm / 78.75 µm / 61.25 µm and ILM-

IPL 39.54 µm / 33.18 µm / 31 µm. In both groups within the subgroups, the decrease in RPC density values positively correlated with the decrease in pRNFL thickness values as well as the decrease in SMVD and ILM-IPL values. Changes in pRNFL thickness and ILM-IPL values, as well as RPC density and SMVD also positively correlated.

**Conclusion:**

Eyes with PEX glaucoma have lower pRNFL thickness values compared to eyes with POAG. No statistically significant difference was found between the examined groups and subgroups in the density of peripapillary and macular surface blood vessels, nor in the inner thickness of the macula. The greater the damage to the visual field in both groups, the lower the density of peripapillary and macular surface blood vessels, and the lower the values of the pRNFL thickness and the inner thickness of the macula.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ante

**Ime i prezime / First and Last Name:-Last**

Prpić

### 93. Metikoš Jelena

**Naslov:**

Indirektna traumatska optička neuropatija- izazovi u dijagnostici i liječenju

**Autori:**

Metikoš Jelena, Vidović Tomislav, Krivdić Dupan Zdravka, Biuk Dubravka, Barać Josip

**Ustanova:**

Klinički bolnički centar Osijek

**Cilj:**

Retrospektivno prikazati rezultate praćenja pacijenata s dijagnozom indirektno traumatske optičke neuropatije

**Bolesnici i metode:**

Retrospektivno smo pratili i analizirali proces dijagnostike i liječenja 7 pacijenata u dobi od 18 do 78 godina s dijagnozom indirektno traumatske optičke neuropatije kliničkim pregledom, automatskom perimetrijom, OCT, MR mozga i orbita s kontrastom i VEP-om

**Rezultati:**

Kod najvećeg broja pacijenata s dijagnozom indirektno traumatske optičke neuropatije je nađeno oštećenje vidnoga polja, dekolorirani optički disk, smanjenje prosječne vrijednosti sloja RNFL te promjene na MR mozga i orbita s kontrastom, kod dijela pacijenata i tranzitorno ili stalno smanjenje vidne oštine te promjene na VEP-

u. Kod manjeg dijela pacijenata je provedena pulsna KS terapija, kod većeg dijela opservacija. Analiziran je vremenski period i shema dijagnostike kao i terapijske mogućnosti

**Zaključak:**

Indirektna traumatska optička neuropatija je dijagnoza na koju treba pamišljati kod svih pacijenata sa traumom glave. Često ostaje predviđena, postavljanje dijagnoze je kasno, a mogućnosti liječenja limitirane

**Title:**

Indirect traumatic optic neuropathy- challenges in diagnosis and treatment

**Authors:**

Metikoš Jelena, Vidović Tomislav, Krivdić Dupan Zdravka, Biuk Dubravka, Barać Josip

**Institution:**

Clinical hospital centre Osijek

**Aim:**

Retrospectively show the results of managing patients with indirect traumatic optic neuropathy

**Patients and methods:**

We regularly followed up and retrospectively analyzed diagnostic and treatment process of 7 patients 18-

78 years of age diagnosed with indirect traumatic optic neuropathy. Patients were monitored using clinical examination, automated perimetry, OCT, MRI of the brain and orbits with contrast and VEP

**Results:**

Most patients diagnosed with indirect traumatic optic neuropathy showed visual field defects, optical disc pallor, decrease in the average value of RNFL thickness, and changes in the MRI of the b

rain and orbits with contrast. Some patients also showed a transitory or permanent reduction of visual acuity and changes in VEP. In small proportion of patients pulse corticosteroid therapy was administered, a large proportion was only observed. Time period and diagnostic scheme were analysed, as well as treatment possibilities

**Conclusion:**

Indirect traumatic optic neuropathy should be considered in all head trauma patients. It is often unrecognised, diagnosis belated and treatment possibilities limited.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA NEUROOFTALMOLOGIJU / Neuro-Ophthalmology section

**Titula / Title:**

Dr.

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**Ime i prezime / First and Last Name:-First**

Jelena

**Ime i prezime / First and Last Name:-Last**

Metikoš



## 94. Ivan Štimac Rojtinić

**Naslov:**

Filamentozni keratitis-prikaz slučaja

**Autori:**

Ivan Štimac Rojtinić, Daliborka Miletić, Biljana Kuzmanović Elabjer, Mladen Bušić

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J.J. Strossmayera u Osijeku. Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam. Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice

**Cilj:**

Prikazati dijagnostičku obradu i liječenje pacijenta s filamentoznim keratitisom.

**Bolesnici i metode:**

Na prijeoperacijskom pregledu za operaciju katarakte kod 63-godišnje pacijentice pronađeno je izrazito suho oko s filamentoznim keratitisom. Učinjena je dodatna dijagnostička obrada koja je uključivala: određivanje ANCA, SSA/Ro, SSB/La i RF u serumu, Schirmerov test, analizu na Lacrydiag uređaju (interferometrija, meniskometrija, NIBUT i meibografija) te je pacijentica ispunila i OSDI upitnik.

**Rezultati:**

Prikazati će se rezultati izvršenih pretraga te usporedba istih prije i nakon provedene topičke terapije.

**Zaključak:**

Poznato je da kirurški zahvati na oku, osobito operacija katarakte mogu prouzročiti ili pojačati simptome i znakove suhoga oka i filamentoznog keratitisa. Stoga je iznimno važno rano otkrivanje i pravovremeno i adekvatno liječenje ova dva entiteta kako bi se postigli optimalni funkcionalni rezultati i smanjili subjektivni simptomi.

**Title:**

Filamentous keratitis - case report

**Authors:**

Ivan Štimac Rojtinić, Daliborka Miletić, Biljana Kuzmanović Elabjer, Mladen Bušić

**Institution:**

University Eye Department, University Hospital "Sveti Duh", Zagreb, Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek. Reference center of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strabismus. Reference center of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To present the diagnostic workup and treatment protocol for a patient with filamentous keratitis

**Patients and methods:**

On a preoperative cataract surgery examination, a 63-year-old female patient presented with severe dry eyes and filamentous keratitis. The diagnostic workup included: serum levels of ANCA, SSA/Ro, SSB/La, and RF, Schirmer test, and examination on o

cular surface analyzer - Lacrydiag (interferometry, meniscometry, NIBUT, and meibography). The patient also filled out an OSDI questionnaire.

**Results:**

The results of the diagnostic workup will be presented, with a comparison before and after the treatment.

**Conclusion:**

It is well known that eye surgery, especially cataract surgery can trigger or aggravate signs and symptoms of dry eye disease and filamentous keratitis. Thus, it is of the utmost importance to promptly diagnose and adequately treat these two entities, ensuring optimal functional results and symptom improvement.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ivan

**Ime i prezime / First and Last Name:-Last**

Štimac Rojtinić

## 95. Iva Galić

**Naslov:**

Subliminalni laser u kroničnoj centralnoj seroznoj korioretinopatiji – prikaz slučaja

**Autori:**

Iva Galić<sup>1</sup>, Damir Bosnar<sup>1,2,3</sup>, Mladen Bušić<sup>1,2,3</sup>, Nenad Vukojević<sup>4,5</sup>, Mira Knežić Zagorec<sup>1,3</sup>, Senad Ramić<sup>1</sup>

**Ustanova:**

1 Klinika za očne bolesti, Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam, Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice, Klinička bolnica „Sveti Duh“, Zagreb, Hrvatska 2 Fakultet za dentalnu medicinu i zdravstvo, Sveučilišta J.J. Strossmayera u Osijeku, Osijek, Hrvatska 3 Medicinski fakultet, Sveučilišta J.J. Strossmayera u Osijeku, Osijek, Hrvatska 4 Klinika za očne bolesti, Klinički bolnički centar Zagreb, Zagreb, Hrvatska 5 Medicinski fakultet, Sveučilišta u Zagrebu, Zagreb, Hrvatska

**Cilj:**

Prikazati sigurnost i učinkovitost subliminalnog lasera (SML) u liječenju kronične centralne serozne korioretinopatije (CSCR).

**Bolesnici i metode:**

Muškarac u dobi od 40 godina s CSCR-

om desnog oka i uvelnim melanom lijevog oka upućen je iz druge ustanove u našu Kliniku zbog liječenja CSCR-a desnog oka SML-

om. U drugoj ustanovi uvealni melanom lijevog oka liječen je brahiterapijom i transpupilarnom termoterapijom (TTT). Bolesnik je na desnom oku primijetio smetnje vida unatrag godinu dana. Najbolje korigirana vidna oštrina desnog oka iznosila je 0,15, a lijevog oka 0,0 prema logMAR-

u. Pregledom fundusa desnog oka pronađeno je raslojavanje neurosenzorne mrežnice u području makule te fokalna atrofija uz pregrupaciju RPE, a na lijevom oku u gornjem nazalnom kvadrantu, subretinalno, pigmentirana solidna kupolasta lezija. OCT-

om u makuli desnog oka verificirana je subretinalna tekućina (SRF) te centralna debljina makule (CMT) = 416 mikrona, uz ostali nalaz uredan. U terapiji se po učinjenoj titraciji primjeni SML makularnog područja desnog oka: 216x170x550x0,2 (Easyret®, Quantel Medical).

**Rezultati:**

Evaluacijom stanja desnog oka 2 mjeseca nakon SML-

a, najbolje korigirana vidna oštrina desnog oka iznosila je 0,0 prema logMAR-

u, a na fundusu desnog oka vidljiva je regresija edema verificirana OCT-om, CMT = 231 mikron.

**Zaključak:**

SML dovodi do poboljšanja vidne oštine uz regresiju SRF-a i smanjenje CMT-

a, očuvanja RPE i fotoreceptora te stoga predstavlja opciju u terapijskom pristupu kroničnoj CSCR.

**Title:**

Subthreshold micropulse laser in chronic central serous chorioretinopathy - case report

**Authors:**

Iva Galić<sup>1</sup>, Damir Bosnar<sup>1,2,3</sup>, Mladen Bušić<sup>1,2,3</sup>, Nenad Vukojević<sup>4,5</sup>, Mira Knežić Zagorec<sup>1,3</sup>, Senad Ramić<sup>1</sup>

**Institution:**

1 University Eye Department, Reference center of the Ministry of Health of the Republic of Croatia for Pediatric ophthalmology and Strabismus, Reference center of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies University Hospital "Sveti Duh", Zagreb, Croatia  
2 Faculty of Dental Medicine and Health, J.J. Strossmayer University of Osijek, Osijek, Croatia  
3 Faculty of Medicine, J.J. Strossmayer University of Osijek, Osijek, Croatia  
4 University Eye Department, University Hospital Center Zagreb, Zagreb, Croatia  
5 School of Medicine, University of Zagreb, Zagreb, Croatia

**Aim:**

To demonstrate the safety and efficacy of subthreshold micropulse laser (SML) in the treatment of chronic central serous chorioretinopathy (CSCR).

**Patients and methods:**

A 40-year-old man with CSCR of the right eye and uveal melanoma of the left eye was referred from another institution to our Clinic for treatment of CSCR of the right eye with SML. In another institution, uveal melanoma of the left eye was treated with brachytherapy and transpupillary thermotherapy (TTT). The patient noticed visual disturbances in the right eye a year ago. The best corrected visual acuity (BCVA) of the right eye was 0.15, and the left eye was 0.0 according to logMAR. Examination of the fundus of the right eye revealed delamination of the neurosensory retina in the area of the macula and focal atrophy with regrouping of the RPE, and a pigmented solid domed lesion in the upper nasal quadrant on the left eye, subretinally. OCT in the macula of the right eye verified subretinal fluid (SRF) and central macular thickness (CMT) = 416 microns, with other regular findings. In therapy, after titration, SML of the macular area of the right eye is applied: 216x170x550x0.2 (Easyret©, Quantel Medical).

**Results:**

Two months after SML, the BCVA of the right eye was 0.0 according to logMAR, and the regression of edema verified by OCT was visible on the fundus of the right eye, CMT = 231 microns.

**Conclusion:**

SML leads to improvement of VA with regression of SRF and reduction of CMT, preservation of RPE and photoreceptors and therefore represents an option in the therapeutic approach to chronic CSCR.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

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Iva

**Ime i prezime / First and Last Name:-Last**

Galić

## 96. Eva Radetić

**Naslov:**

IMPDH1 c.134A>G, p.(Tyr45Cys): detektirana nova varijanta sekvence – prikaz slučaja

**Autori:**

Eva Radetić, Mirjana Bjeloš, Mladen Bušić, Ana Ćurić

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J.J. Strossmayera u Osijeku, Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam, Referentni centar Ministarstva zdravstva Republike Hrvatske za nasljedne distrofije mrežnice

**Cilj:**

Prikazati povezanost genotipa i fenotipa IMPDH1 c.134A>G, p.(Tyr45Cys) varijante gena.

**Bolesnici i metode:**

Sekvenciranje panela gena za nasljedne distrofije mrežnice „Retinal Dystrophy Panel Plus“ je provedeno u laboratoriju Blueprint Genetics (BLUEPRINT GENETICS OY, KEILARANTA 16 A-B, 02150 ESPOO, FINLAND Laboratory CLIA: 99D2092375) u 15-godišnje djevojčice, oboljele od Downovog sindroma s udruženom visokom miopijom zbog znakova i simptoma koji su ukazivali na nasljednu distrofiju mrežnice. Vidna oštrina je tada bila obostrano 0,26 na daljinu i 0,63 na blizinu.

**Rezultati:**

Blueprint Genetics „Retinal Dystrophy Panel Plus“ sekvencioniranje identificiralo je novu missense varijantu nejasnog značenja IMPDH1 c.134A>G, str. (Tyr45Cys) čije je nasljeđivanje autosomno dominantno. Ova varijanta je odsutna u gnomAD-u. In silico prediktivni algoritam Muttaster pokazuje da ova varijanta može uzrokovati bolest. Do ovog trenutka ova varijanta nije opisana u medicinskoj literaturi niti je prijavljena u ClinVar ili HGMD-

u bazama. Fenotip je u skladu s pratećim patogenim kriterijima za navedeni gen. Prema standardima i smjernicama za tumačenje varijanti sekvenci koje preporučuju American College of Medical Genetics and Genomics and the Association for Molecular Pathology, dva umjerena i dva potporna kriterija za varijantu IMPDH1 c.134A>G, str. (Tyr45Cys) pružaju dokaze kako bi se varijanta mogla reklasificirati kao vjerojatno patogena.

**Zaključak:**

Varijanta sekvence IMPDH1 c.134A>G, p. (Tyr45Cys) eksplicira patološki fenotip u bolesnice i jasno pokazuje važnost varijante u prikazanom slučaju, te bi je, sukladno kriterijima, trebalo klasificirati kao vjerojatno patogenu.

**Title:**

IMPDH1 c.134A>G, p.(Tyr45Cys): Novel Sequence Variant Detected – a case report

**Authors:**

Eva Radetić, Mirjana Bjeloš, Mladen Bušić, Ana Ćurić

**Institution:**

University Eye Department, University Hospital “Sveti Duh”, Zagreb, Faculty of Medicine Osijek, Faculty of Dental Medicine and Health Osijek, University Josip Juraj Strossmayer in Osijek, Reference

center of the Ministry of Health of the Republic of Croatia for Pediatric Ophthalmology and Strabismus, Reference center of the Ministry of Health of the Republic of Croatia for Inherited Retinal Dystrophies

**Aim:**

To present genotype – phenotype correlation of the IMPDH1 c.134A>G, p.(Tyr45Cys) gene variant

**Patients and methods:**

The Blueprint Genetics Retinal Dystrophy Panel Plus sequencing was performed in the laboratory Blueprint Genetics (BLUEPRINT GENETICS OY, KEILARANTA 16 A-B, 02150 ESPOO, FINLAND Laboratory CLIA: 99D2092375) in 15-year-old girl with Down syndrome and high myopia due to signs and symptoms that correlated to retinal dystrophy. Best corrected visual acuity in both eyes was 0.26 at distance and 0.63 at near.

**Results:**

The Blueprint Genetics Retinal Dystrophy Panel Plus sequence identified novel missense variant of unknown significance IMPDH1 c.134A>G, p.(Tyr45Cys) inherited in an autosomal dominant manner. The variant is absent in gnomAD. Muttaster in silico tool predicted this variant to be disease causing. To the best of our knowledge, this variant has not been described in the medical literature or reported in ClinVar or HGMD. Patient's phenotype conformed with the supporting pathogenic criteria for the gene. According to standards and guidelines for the interpretation of sequence variants recommended by the American College of Medical Genetics and Genomics and the Association for Molecular Pathology, two moderate and two supporting criteria for the variant IMPDH1 c.134A>G, p.(Tyr45Cys) provide evidence for the variant to be reclassified as likely pathogenic.

**Conclusion:**

We conclude that IMPDH1 c.134A>G, p.(Tyr45Cys) contributed to the pathologic phenotype, demonstrating its significance clearly in the case presented, and should be reclassified according to the criteria of evidence as likely pathogenic.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

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Eva

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Radetić

## 97. Slaven Balog

### **Naslov:**

Naše iskustvo s implantacijom, difraktivne, trifokalne, singlepiece IOL na prednju kapsulu leće, zbog rupture stražnje kapsule leće, a nakon što je u prvo operiranom oku ugrađena istovjetna trifokalna IOL, drugog proizvođača

### **Autori:**

Slaven Balog, Antonio Kokot, Marija Olujić

### **Ustanova:**

Oftalmološka poliklinika dr. Balog, Osijek, Republika Hrvatska; Medicinski fakultet Osijek, Sveučilište Josipa Jurja Strossmayera u Osijeku, Osijek, Republika Hrvatska

### **Cilj:**

Cilj rada je predstaviti novostečeno iskustvo, u inače neuvriježenoj metodi ugradnje trifokalne, singlepiece intraokularne leće (IOL) na prednju kapsulu leće (zbog rupture stražnje kapsule u navedenom oku), a s ciljem uspostave što boljeg, tj. što je moguće istovjetnijeg efekta trifokalnosti u oba oka, primjenom istih tipova IOL, a u situaciji u kojoj anatomske predispozicije oka ne dozvoljavaju izvođenje standardizirane rutinske procedure! Korektivni potencijal današnjih trifokalnih IOL omogućuje ispravljanje i/ili poboljšanje vidne oštine i vidnih funkcija, na više distanci (minimalno tri), ovisno o indikaciji, tehničkim mogućnostima-performansama IOL te na kraju, ali ne i manje važno - ovisno i o samoj želji pacijenta.

### **Bolesnici i metode:**

Predstaviti ćemo naše prvo i jedino iskustvo, tj. klinički slučaj s primarnim ciljem smanjenja rezidualne dioptrije/refraktivne pogreške, nakon komplicirane operacije mrene, izvođenjem neuvriježenog postupka ugradnje trifokalne IOL na prednju kapsulu leće 39-

godišnji pacijent, visoki miop obostrano (Best Corrected Visual Acuity (BCVA) oc. dex: -6 Dsf / -0,75 Dcyl = 0,6; BCVA oc. sin.: -

4,5 Dsf = 0,3), uz subkapsularni tip mrene obostrano i uz blažu slabovidnost na oba oka. U prvom operativnom postupku uspješno se ukloni subkapsularni tip mrene te se ugradi difraktivna Zeiss/ATLISA 839 Tri MP /IOL - već prvi postoperativni dan pacijent ostvaruje cIOL Uncorrected Distance Visual Acuity (UCDVA): 92 %. No, tijekom operativnog postupka uklanjanja mrene na drugom oku, dolazi do komplikacije rupture stražnje kapsule leće te se zbog miopije, ugradi primjereno „miopskom shiftu“, intraoperativno iskalkulirana snaga IOL / AT Lara 829MP /, koja je ujedno i bila dostupna na lageru u našoj Poliklinici. Pacijent je kroz narednih pet mjeseci praćenja ostvarivao sve bolju i bolju vidnu oštrinu bez korekcije, na spornom oku, dosegnuvši UCDVA: 80%, te na blizinu u Uncorrected Near Visual Acuity (UCNVA): 2-

5! Kontrole su se prvih tri mjeseca provodile svaka dva tjedna zbog bojazni od porasta intraokularnog tlaka (IOT), iako je kod pacijenta bilo izvjesno da se radi o jako miopnom oku, sa dosta dubokom stražnjom sobicom – samim time manja mogućnost chafinga! Po

tom su se kontrole nastavile jednom mjesečno, uz apsolutno uredne vrijednosti IOT-a, kroz cijeli period praćenja. Unatoč jako dobroj vidnoj oštini cIOL: UCDVA 0,8, problem koji je perzistirao cijelo vrijeme bila je nestabilnost implantirane IOL (Zeiss /Plate Haptic design - overall diameter 11 mm) koja je dijametrom nešto kraća spram standardnih 13 mm „total diameter“ ostalih renomiranih proizvođača, i koja je tijekom fizičkih aktivnosti pacijenta ipak imala sklonost po

micanju od 0,5 mm do 1,0 mm - uglavnom postranično. Zbog navedenog, pacijent je imao dosta izražene HOA (Higher Order Aberrations - Glare, Halo, Starburst) te obvezno tijekom noćne vožnje - „dupliranje“ slike. Iz tog razloga i uz suglasnost s pacijentom pristupilo se zamijeni postojeće IOL novom trifokalnom IOL drugog proizvođača, čiji overall diameter iznosio 13 mm (Medicontur/Liberty 677 MY/ fenestrated C-loops Haptic). Pri tome se moralo uzeti u obzir i ostale strukturne karakteristike prvotne ugrađene IOL u desno oko: difraktivni tip IOL, Copolymer of hydrophobic and hydrophilic monomer with 25 % water content, UV blocker and blue light filter. Sekundarni operativni postupak eksplantacije postojeće i re-implantacije posve nove trifokalne IOL drugog proizvođača nije protekao posve „lagano“ jer se između ostalog radilo o pacijentu s izuzetno jakim okulomotoričkim refleksom, naglašeno malim komom, izraženom fotofobijom (svijetloplava boja očiju) te uz potrebu postavljanja jednog šareničnog šava u području zjenice sa svrhom kompenziranja manjeg defekta šareničnog ruba, a koji je opet nastao kao posljedica višestrukih manipulacija tijekom operativnog postupka koji su do sada bili izvedeni, ali i kao posljedica izuzetno nježne - subatrofične građe (svijetloplavo pigmentirane) same šarenice. Iz svega gore navedenoga operativni postupak je bio proveden u lokalno potenciranom tipu anestezije.

#### **Rezultati:**

Pacijent je kroz narednih tri mjeseca, od sekundarnog postupka eksplantacije/re-implantacije, ponovno dosegao zavidnu razinu vidne oštine - oc. sin. cIOL: UDVA 0,74 te na blizini pacijent ostvaruje oc. sin. UCNVA: 1-5, ali sa visokim stupnjem subjektivnog zadovoljstva jer više ne zamjećuje ništa od prijašnjih preoperativnih tegoba po tipu HOA: Glare, Halo, Starburst! Vrijedosti IOT- a su bile praćene kao i nakon prve procedure, kroz prva tri mjeseca, svaka dva tjedna. No, s obzirom da su na svakoj kontroli bile uredne vrijednosti IOT- a na oba oka, intervali su pomaknuti na svakih mjesec dana i do mjesec i pol dana !

#### **Zaključak:**

U našem prikazu slučaja, dogovorno i uz pismenu suglasnost pacijenta, a nakon što su pacijentu detaljno pojašnjene sve prednosti, ali i nedostaci, kao i moguće posljedične komplikacije ovakvog tipa ugradnje IOL-a na prednju kapsulu leće, pristupilo se sekundarnoj implantaciji IOL-a.

Također, važno je za spomenuti da se pacijentu svakako izložila mogućnost ugradnje trodijelne monofokalne IOL, sa svojim prednostima i nedostacima koje takav tip IOL-a nosi, te je obzirom na pacijentovu motiviranost za prvotno navedeni tip operativnog postupka, ovaj tip zahvata ostavljen kao rezervna/konačna opcija!

Na primjeru ovog jedinstvenog kliničkog slučaja iz naše kirurške prakse, htjeli smo pokazati s koliko se potencijalnih problema svaki refraktivni kirurg mora moći suočiti, ukoliko planirani operativni postupak ugradnje trifokalnih/multifokalnih IOL-a ne ide po planu.

#### **Title:**

Our experience with the implantation of a diffractive, trifocal, singlepiece IOL on the anterior capsule of the lens, due to a rupture of the posterior capsule of the lens, after an identical trifocal IOL, from another manufacturer, was implanted in the first operated eye

#### **Authors:**

Slaven Balog, Antonio Kokot, Marija Olujić



**Institution:**

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**Aim:**

The aim of the paper is to present the newly gained experience in the otherwise unconventional method of installing a trifocal, single-piece intraocular lens (IOL) on the front capsule of the lens (due to a rupture of the posterior capsule in the eye), with the aim of establishing the best possible, i.e. the most identical effect of trifocality in both eyes, using the same type of IOL, and in a situation where the anatomical predispositions of the eye do not allow the performance of a standardized routine procedure! The corrective potential of today's trifocal IOLs enables the correction and/or improvement of visual acuity and visual functions, at multiple distances (minimum three), depending on the indication, technical capabilities-performance of the IOL, and last but not least - depending on the patient's wishes.

**Patients and methods:**

We will present our first and only experience, i.e. a clinical case with the primary goal of reducing residual diopters/refractive errors, after complicated cataract surgery, by performing an unconventional procedure of installing a trifocal IOL on the anterior lens capsule. 39-year-old patient, high myopia bilaterally (Best Corrected Visual Acuity (BCVA) oc. dex.: -6 Dsf / -0.75 Dcyl = 0.6; BCVA oc. sin.: -

4.5 Dsf = 0.3), with subcapsular type of cataract on both sides and mild low vision in both eyes. In the first operative procedure, the subcapsular type of cataract is successfully removed and the diffractive Zeiss/ATLisa 839 Tri MP /IOL was implanted - already on the first postoperative day, the patient achieves cIOL Uncorrected Distance Visual Acuity (UCDVA): 92 %. However, during the surgical procedure to remove the cataract in the other eye, there was a complication of rupture of the posterior capsule of the lens, and due to myopia, an intraoperatively calculated power IOL / AT Lara 829MP /, which was available in stock in our Polyclinics. During the next five months of follow-

up, the patient achieved better and better visual acuity without correction, in the affected eye, reaching UCDVA: 80 %, and Uncorrected Near Visual Acuity (UCNVA): 2-

5! Controls were carried out every two weeks for the first three months, due to fears of an increase in intraocular pressure (IOP), although it was certain that the patient had a very myopic eye, with a rather deep posterior chamber - thus less chance of chafing! Controls then continued once a month, with absolutely normal IOP values, throughout the entire monitoring period. Despite the very good visual acuity of the cIOL: UCDVA 0,8, the problem that persisted all the time was the instability of the implanted IOL (Zeiss / Plate Haptic design - overall diameter 11 mm), which is slightly shorter in diameter compared to the standard 13 mm "total diameter" of other renowned manufacturers, and which, during the patient's physical activities, still had a tendency to move from 0,5 mm to 1,0 mm - mostly laterally. Because of the above, the patient had quite pronounced Higher Order Aberrations (HOA) (Glare, Halo, Starburst) and mandatory during night driving - "duplication" of the image. For this reason and with the consent of the patient, the existing IOL was replaced with a new trifocal IOL from another manufacturer, whose overall diameter was 13 mm (Medicontur/Liberty 677 MY/ fenestrated C-

loops Haptic). In doing so, other structural characteristics of the originally implanted IOL in the right eye had to be taken into the account: diffractive type IOL, Copolymer of hydrophobic and hydrophilic monomer with 25 % water content, UV blocker, and blue light filter. The secondary surgic

al procedure of explantation of the existing and re-implantation of a completely new trifocal IOL from another manufacturer did not go completely "smoothly" because, among other things, it involved a patient with an extremely strong oculomotor reflex, accentuated by a small eye, pronounced photophobia (light blue colour of the eyes) and with the need to place one iris seam in the pupil area with the purpose of compensating for a minor defect of the iris edge, which again arose as a result of multiple manipulations during the operative procedures that have been performed so far, but also as a result of the extremely delicate - subatrophic structure (light blue pigmented) of the iris itself. From all of the above, the operative procedure was performed in a locally potentiated type of anesthesia.

**Results:**

Over the next three months, from the secondary explantation/re-implantation procedure, the patient again reached an enviable level of visual acuity - oc. son. cIOL: UDVA 0.74 and at near the patient achieves oc. son. UCNVA: 1-5, but with a high degree of subjective satisfaction, since he no longer noticed any of the previous pre-operative complaints according to the HOA type: Glare, Halo, Starburst! IOP values were monitored as after the first procedure, during the first three months, every two weeks. However, considering that there were normal values of IOP in both eyes at each control, the intervals were moved to every month and up to a month and a half!

**Conclusion:**

In our case report, by agreement and with the written consent of the patient, and after all the advantages and disadvantages, as well as the possible consequential complications of this type of IOL installation on the anterior lens capsule, were explained to the patient in detail, the secondary IOL implantation was started.

Also, it is important to mention that the possibility of installing a three-part monofocal IOL was certainly presented to the patient, with its advantages and disadvantages that this type of IOL carries, and given the patient's motivation for the initially mentioned type of surgical procedure, this type of procedure was left as a reserve/ final option!

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

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**Ime i prezime / First and Last Name:-First**

Slaven

**Ime i prezime / First and Last Name:-Last**

Balog

## 98. Bućan Ivona

**Naslov:**

Makularna korioretinalna distrofija s očuvanom foveom: prikaz slučaja

**Autori:**

Bućan Ivona, Marković Irena, Krešo Ante, Rajčić Ivan, Bućan Kajo

**Ustanova:**

Klinika za očne bolesti, KBC Split

**Cilj:**

Prikazati slučaj makularne korioretinalne distrofije s očuvanom foveom.

**Bolesnici i metode:**

Pacijentica, u dobi od 73 godine, na rutinskom oftalmološkom pregledu požalila se na pad vida i fotofobiju primijećenu u zadnjih godinu dana. Negirala je noćno sljepilo te ispade u vidnom polju. Izvršen je standardni oftalmološki pregled, uključujući procjenu najbolje korigirane vidne oštine, biomikroskopiju prednjeg očnog segmenta, aplanacijsku tonometriju te biomikroskopski pregled fundusa u midrijazi. Od pretraga napravljene su: fundus autofluorescenca (FAF), fluoresceinska angiografija (FAG), optička konherentna tomografija s angiografijom (OCT/OCTA), kompjuterizirana perimetrija te elektroretinografija.

**Rezultati:**

Najbolje korigirana vidna oština desnog oka iznosila je 0,7, a lijevog oka 0,6. Prednjom biomikroskopijom detektirane su incipijentne kortikonuklearne mreže. Intraokularni tlak bio je uredan. Pr egledom fundusa u midrijazi nalazi se ograničeni optički disk i fovea očuvane strukture, ali bez centralnog refleksa. Unutar temporalnih arkada opiše se bilateralna, simetrična, koncentrična zona atrofije mrežnice sivkastog kolorita s vidljivim krvnim žilama žilnice. Blijeda papila, pigmentacije i atrofija koštanim stanicama i atenuiranost krvnih žila nije detektirana.

Na FAF-

uočava se zona hipoautofluorescence koja odgovara atrofičnoj regiji te hiperautofluorescenca fovee koja odgovara aktivnosti retinalnog pigmentnog epitela (RPE). Na granici atrofične i očuvane mrežnice vidljive su multiple točkaste hiper/hipoautofluorescence, koje su bile najzraženije oko optičkog diska i gornje temporalne arkade (možebitni znakovi daljnjeg napredovanja bolesti). U ranim fazama FAG-

a prikaže se hipofluorescentna zona uslijed nedostatka punjenja retinalne vaskulature i koriokapilarnog sloja te hiperfluorescenca uokolo fovee koja u kasnijim fazama iskazuje znakove curenja iz koriokapilarisa. Peripapilarno i uz granice lezije, najzraženije u području gornje temporalne arkade prikaže se rani "prozor defekt", koji odgovara području degeneracije RPE, a još uvijek očuvano koriokapilarnog sloja.

OCT-

om se prikaže očuvana elipsoidna zona i RPE u fovei uz okolnu atrofiju vanjskih slojeva mrežnice dok se na granici fovee i parafovee detektira cirkularni intramrežnični edem, koji bi mogao predstavljati eksudativnu makulopatiju i napredovanje bolesti prema centralnom dijelu. OCTA prikaže o

čuvan površinski mrežnični pleksus, uz redukciju dubokog mrežničnog pleksusa i koriokapilarnog sloja. Na vidnom polju detektiraju se manje i više izraženi centralni i paracentralni skotomi, dok se na ERG-

u opisuje difuzna disfunkcija fotoreceptora gdje, bez obzira na izgledom očuvanu foveu, postoji redukcija čunjića i subklinička zahvaćenost i centralne makule.

**Zaključak:**

U prikazane pacijentice obzirom na ograničenost korioretinalne atrofije na stražnji pol, izgledom očuvanu foveu u trenutku dijagnosticiranja bolesti te rezultate slikovne dijagnostike, nakon pretrazivanja literature u obzir smo uzeli centralnu areolarnu koroidalnu distrofiju (engl. central areolar choroidal dystrophy - CACD), paramakularnu koriokapilarnu atrofiju i Stargardtovu bolest.

Prema histološkim dokazima u literaturi upravo promjene na razini RPE imaju važnu ulogu u bolestima koje klasificiramo pod mrežničnim i koroidalnim distrofijama. Za regionalne koroidalne distrofije često se koristi termin atrofija jer su nedovoljno razjašnjene genetske etiologije, a razlikuju se obzirom na lokalizacijski obrazac bolesti s početnim promjenama RPE u centralnoj makuli (CACD), odnosno peripapilarnoj regiji s prvotnim zahvaćanjem područja oko optičkog diska i vaskularnih arkada te atrofije paramakularnog područja unutar temporalnih arkada s očuvanom foveom u ranim stadijima (paramakularna koriokapilarna atrofija). U literaturi nalazimo opis gdje je i nakon 20 godina praćenja pacijenta nazočna očuvana fovea u paramakularnoj koriokapilarnoj atrofiji.

Iako CACD i Stargardtovu bolest u većini slučajeva karakterizira rana zahvaćenost centralne makule, nazočnost visoko varijabilnog fenotipa bolesti s očuvanom foveom i centralnom vidnom oštrom u raznim heterogenim koroidalnim i mrežničnim distrofijama, govori u prilog nezavisnog mehanizma bolesti koji omogućava preživljavanje fovealnih čunjića. Korioretinalne distrofije stražnjeg pola s očuvanom foveom se javljaju u pacijenata starije životne dobi (> 50 godina) te ih odlikuje niska stopa progresije. Pretpostavlja se da je preživljavanje fovealnih čunjića posljedica sličnosti grade vanjskog segmenta fovealnih čunjića i perifernih štapića, odnosa Müllerovih stanica i čunjića u centralnoj makuli koji iznosi 1:1, prisutnosti vijabilnih faktora s većom osjetljivošću fovealnih čunjića na iste te zaštitnih pigmenata detektiranih u fovei.

Obzirom na još uvijek nerazjašnjeni etiopatogenetski mehanizam očuvanosti fovee u centralnim koroidalnim i mrežničnim distrofijama bit će potrebno dugotrajno praćenje pacijenta u svrhu razumijevanja progresije bolesti te genetsko testiranje (u tijeku - do datuma prijave rada na kongres rezultati nisu bili dostupni).

**Title:**

Macular chorioretinal dystrophy with foveal sparing: case report

**Authors:**

Bučan Ivona, Marković Irena, Krešo Ante, Rajčić Ivan, Bučan Kajo

**Institution:**

Eye Clinic, University Hospital Split

**Aim:**

The objective was to present a case of macular chorioretinal dystrophy with foveal sparing.

**Patients and methods:**

The 73-year-

old patient complained about vision loss and photophobia during a regular ophthalmological exam

mination. She denied having visual field defects and night blindness. A standard ophthalmological examination was performed, including assessment of best-corrected visual acuity (BCVA), biomicroscopy of anterior segment, applanation tonometry, and examination of the fundus in mydriasis. Further tests (fundus autofluorescence - FAF, fluorescein angiography - FA, optical coherence tomography with angiography - OCT/OCTA, computerized perimetry, and electroretinography) were recommended.

**Results:**

Right eye BCVA is 0.7; left eye BCVA is 0.6. Anterior biomicroscopy detected incipient corticonuclear cataracts. The intraocular pressure was normal. An examination of the fundus in mydriasis reveals an optic disc with clear margins, a fovea with preserved structure but no central reflexes, and a concentric, bilateral zone of greyish atrophy within the temporal arcades, along with visible choroidal vessels. Retinal vessels attenuation, pale papillae, and bone spicule pigmentation were not seen.

On FAF, a zone of hypoautofluorescence corresponding to the atrophic area can be observed, while the fovea shows hyperautofluorescence, which indicates the activity of the retinal pigment epithelium (RPE). Numerous punctate hyper/hypoautofluorescences are observed at the margin between the preserved and atrophic retina as potential indicators of further disease development, with the optic disc and upper temporal arcade showing the greatest intensity. In the early phase of FA, the lack of filling of the retinal vasculature and choriocapillaris causes a hypofluorescent zone, whereas the fovea are surrounded by hyperfluorescence, which in the later phase shows signs of leakage from choriocapillaris. An early window defect is seen peripapillary and along the lesion's borders, particularly in the region of the upper temporal arcade, which corresponds to the area of RPE-degeneration and the still-preserved choriocapillary layer.

OCT analyzes the surrounding atrophy of the outer layers of the retina while sparing the ellipsoid zone and RPE in the fovea. Circular intraretinal edema is monitored at the boundary of the fovea and parafovea, which may indicate exudative maculopathy and the progression of the disease towards the central portion. The choriocapillary layer and deep retinal plexus are reduced in the OCTA, while the superficial retinal plexus is still detectable. The visual field shows the presence of more or less intense central and paracentral scotomas. Although the fovea appears to be intact, diffuse photoreceptor dysfunction is shown on the ERG as a decrease in cones and subclinical involvement of the central macula.

**Conclusion:**

After carrying out the literature search, we took in consideration central areolar choroidal dystrophy (CACD), paramacular choriocapillaris atrophy, and Stargardt disease due to the patient's posterior pole-specific atrophy, and the results of the diagnostic tests.

According to histology research, pathologies categorized as choroidal and retinal dystrophies are caused by alterations at the level of the RPE. Since the genetic etiology of regional choroidal dystrophies is not completely understood, the term "atrophy" is frequently used to describe them. These disorders differ from each other in aspects of the localization of the disease, with initial RPE changes occurring in the central macula (CACD), i.e., the peripapillary region with initial involvement of the area around the optic disc and vascular arcades, and atrophy of the paramacular area within the temporal arcades with preserved fovea in the early stages (paramacular choriocapillary

atrophy). There have been cases reported in the literature where a preserved fovea has been seen in people with paramacular choriocapillary atrophy even after 20 years of patient follow-up.

A highly variable disease phenotype with preserved fovea and central visual acuity is present in a variety of heterogeneous choroidal and retinal dystrophies which supports a disease-independent mechanism that allows the survival of foveal cones, even though CACD and Stargardt disease are typically characterized by early involvement of the central macula. Patients above the age of 50 are more likely to experience chorioretinal dystrophies of the posterior pole with preserved fovea, which have a slow rate of progression. The survival of foveal cones is thought to be a result of the similarity between the outer segments of foveal cones and peripheral rods, the 1:1 ratio of Müller cells to cones in the central macula, the existence of viable factors with greater sensitivity of foveal cones to them, and the presence of protective pigments located in the fovea.

Further objectives include long-term patient follow-up, which may aid in understanding the progression of the disease, and genetic testing due to the still unresolved etiopathogenetic mechanism of fovea sparing in central retinal and choroidal dystrophies.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ivona

**Ime i prezime / First and Last Name:-Last**

Bućan

## 99. Jandroković Sonja

### **Naslov:**

Kontrola vršnog intraokularnog tlaka oralnim acetazolamidom nakon selektivne laserske trabekuloplastike

### **Autori:**

S Jandroković, M Tomić, S Vidas Pauk, D Lešin Gaćina, L Rudeš, I Bešlić

### **Ustanova:**

Medicinski fakultet Sveučilište u Zagrebu; KBC Zagreb; KB Merkur

### **Cilj:**

Procijeniti učinak uzimanja oralnog acetazolamida od 125 mg (Diamox, Amdipharm Limited) odmah nakon selektivne laserske trabekuloplastike (SLT) za sprječavanje vršnog IOT-a 1 sat nakon SLT-a, Vršni tlak je definiran kao povišenje IOT-a  $\geq 6$  mmHg nakon liječenja

### **Bolesnici i metode:**

Ova prospektivna kohortna studija uključivala je 84 bolesnika (152 oka) s različitim vrstama glaukoma liječenih SLT-om zbog nedovoljne kontrole IOT-a ili radi netolerancije na lijekove SLT je učinjen u standardnom protokolu. Neposredno po završetku laserskog liječenja pacijenti su dobili 125 mg oralnog acetazolamida (ACZ). Podaci su zabilježeni 0. dan (prije SLT), jedan sat, 1 mjesec nakon SLT-a. Pacijenti su praćeni tijekom godine dana nakon SLT-a. Podaci su bilježeni (dob, vrsta glaukoma, IOT prije liječenja i broj lijekova, nuspojave) i analizirani su korištenjem softvera Statistica verzije 14.01.

### **Rezultati:**

Nisu primijećene značajne razlike u vrijednostima IOT-a prije i nakon SLT-a između različitih vrsta glaukoma. Prije SLT-a, srednja vrijednost IOT-a u svim očima uključenim u studiju bio je  $20,61 \pm 3,96$  mmHg, medijan lijekova za glaukom bio je 3 (2-4), a 16,9% od pacijenata su trajno liječeni s 250 mg oralnog ACZ. Jedan sat nakon SLT-a, prosječni IOT za sve oči značajno se smanjio na  $19,04 \pm 5,71$  mmHg ( $p=0,002$ ). Medijan smanjenja IOT-a 1 sat nakon SLT-a bio je 4,0 (5-15) mmHg. Međutim, u 52 (34,2%) oka IOT se povećao 1 sat nakon SLT-a s medijanom povećanja od 3,0 (0,5-17) mmHg. Vršno povišenje IOT-a  $\geq 6$  mmHg 1 sat nakon zahvata primijećeno je u 12 (7,9%) očiju, od kojih 10 s primarnim glaukom otvorenog kuta i 2 s primarnim glaukomom zatvorenog kuta (nakon operacije katarakte). Smanjenje IOT-a 1 sat nakon tretmana bilo je u pozitivnoj korelaciji s dobi ( $p=0,041$ ), IOT-om prije liječenja ( $p<0,001$ ) i medijanom lijekova za glaukom prije liječenja ( $p=0,009$ ), dok porast IOT-a nije povezan ni s jednom analiziranom varijablom ( $p>0,05$ ).

### **Zaključak:**

Oralna primjena acetazolamida odmah nakon SLT-a sprječava povišenje IOT-a, tzv. vršnog tlaka, i značajno smanjuje IOT, posebno u bolesnika starije dobi, bolesnika s većim IOT-om prije liječenja i bolesnika koji su uzimali veći broj lijekova za glaukom. Nijedna od analiziranih varijabli nije bila povezana s povećanjem IOT-a 1 sat nakon SLT-a. Potrebna su daljnja istraživanja u budućnosti

u velikoj kohorti pacijenata kako bi se potvrdili svi ti nalazi i podržalo uspostavljanje novih preporuke u liječenju glaukoma SLT-om.

**Title:**

Oral acetazolamide for intraocular pressure peak control one hour after the selective laser trabeculoplasty

**Authors:**

S Jandroković, M Tomić, S Vidas Pauk, D Lešin Gaćina, L Rudeš, I Bešlić

**Institution:**

School of Medicine, University of Zagreb; UHC Zagreb; UH Merkur

**Aim:**

To evaluate the impact of 125 mg oral acetazolamide (Diamox, Amdipharm Limited) taken instantly after selective laser trabeculoplasty (SLT) on preventing the 1-hour post-SLT IOP peak, defined as the posttreatment IOP elevation  $\geq 6$  mmHg

**Patients and methods:**

This prospective cohort study included 84 patients (152 eyes) with different glaucoma types treated by SLT for insufficient IOP control or intolerance to medical therapy. Patients received SLT in a standard protocol, followed by 125 mg oral acetazolamide (ACZ) instantly after SLT. Data were recorded on the 0th day (before SLT), one hour, the 1st month, the 3rd month, the 6th month, and one year after SLT. Factors associated with success/failure, age, type of glaucoma, pretreatment IOP, and the number of medications were analyzed using Statistica software version 14.01.

**Results:**

No significant differences were observed in the IOP values before and after SLT between different types of glaucoma. Before SLT, the mean of IOP in all eyes included in the study was  $20.61 \pm 3.96$  mmHg, the median of glaucoma medications was 3 (2-4), and 16.9% of patients were permanently treated with 250 mg oral ACZ. 1-hour after SLT, the mean IOP in all eyes significantly decreased to  $19.04 \pm 5.71$  mmHg ( $p=0.002$ ). The median of IOP reduction at 1-hour post-SLT was 4.0 (5-15) mmHg. However, in 52 (34.2%) eyes, the IOP increased 1-hour post-SLT with a median increase of 3.0 (0.5-17) mmHg. The 1-hour posttreatment IOP elevation  $\geq 6$  mmHg was observed in 12 (7.9%) eyes, of those 10 with POAG and 2 with PACG after cataract surgery. The 1-hour posttreatment IOP reduction was positively correlated with age ( $p=0.041$ ), pretreatment IOP ( $p<0.001$ ), and pretreatment median of glaucoma medications ( $p=0.009$ ), while the IOP increase was not associated with any analyzed variables ( $p>0.05$ ).

**Conclusion:**

Oral acetazolamide administration immediately after SLT prevents the 1-hour IOP peak due to SLT and significantly reduces the IOP, especially in patients with older age, higher pretreatment IOP, and a greater number of glaucoma medications. None of the analyzed variables were associated with the 1-hour post-SLT IOP increase. Further studies in the future are needed in a large cohort of patients to confirm all these findings and support establishing new recommendations in glaucoma treatment by SLT.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**



SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Sonja

**Ime i prezime / First and Last Name:-Last**

Jandroković

**100. Diana Bućan**

**Naslov:**

PROCJENA UTJECAJA SUZNOG FILMA NA VIDNU OŠTRINU U VOZAČA PROFESIONALACA

**Autori:**

Diana Bućan, Kajo Bućan

**Ustanova:**

Specijalistička ordinacija medicine rada dr.Diana Bućan Split; Očna poliklinika dr. Bućan Split

**Cilj:**

analizirati učinak kapanja umjetnih suza bez konzervansa (0,2% natrijevog hijaluronata) na vidnu oštrinu u profesionalnih vozača  $\geq 55$  godine života sa simptomatskim suhim očima (SSO) i asimptomatskim suhim očima (ASO)

**Bolesnici i metode:**

Prospektivna studija je uključivala 19 ispitanika (38 očiju) sa SSO i 21 ispitanika (42 oka) sa ASO. Vidna oštrina na daljinu (bez korekcije i s korekcijom) ispitana je Snellenovim optotipima na udaljenosti od 6 metara, izražena je ETDRS slovima /Early Treatment Diabetic Retinopathy Study/. Svakom pacijentu je određena vidna oštrina s i bez korekcije prije kapanja i 3 min nakon kapanja umjetnih suza. Uključujući kriteriji bili su dob i nalaz oftalmologa prema OSDI rezultatu. Isključujući kriteriji za obe skupine bili su aktivna bolest oka, operacija oka ili korištenje kapi kortikosteroida ili protuupalnih lijekova zadnjih 30 dana. Svi ispitanici popunili su informirani pristanak (prema definiciji sadržanoj u „Directive 2001/20/EC“). Statistička analiza podataka napravljena je uporabom IBM SPSS Statistics Software.

**Rezultati:**

- 1.postoji razlika u nekorigiranoj vidnoj oštrini prema korigiranoj vidnoj oštrini u obje skupine nakon ukapavanja umjetnih suza ( ETDRS SSO: ETDRS ASO= 5,2:3,5//značajna u SSO skupini;  $p < 0.001$  );
- 2.postoji statistički značajna razlika u nekorigiranoj vidnoj oštrini u obje skupine nakon ukapavanja umjetnih suza (ETDRS SSO: ETDRS ASO= 4,4:5,4//značajna u SSO skupini;  $p < 0.001$ )

**Zaključak:**

before determining the visual acuity, it would be advisable for professional drivers to instill artificial tears in order to achieve the best possible result and a more correct assessment of the given criteria!

**Title:**

ASSESSMENT OF THE INFLUENCE OF TEAR FILM ON VISUAL ACUITY IN PROFESSIONAL DRIVERS

**Authors:**

Diana Bućan, Kajo Bućan

**Institution:**

Occupational medicine specialist practice Diana Bućan, MD; Split; Eye polyclinic Dr Bućan, Split Eye

**Aim:**

to analyze the effect of preservative-free artificial tear drops (0.2% sodium hyaluronate) on visual acuity in professional drivers  $\geq 55$  years of age with symptomatic dry eye (SSO) and asymptomatic dry eye (ASO)

**Patients and methods:**

the prospective study included 19 subjects (38 eyes) in SSO and 21 subjects (42 eyes) in ASO. Visual acuity at a distance (without correction and with correction) was tested with Snellen optotypes at a distance of 6 meters, expressed in ETDRS letters /Early Treatment Diabetic Retinopathy Study/. Visual acuity with and without correction was determined for each patient before and 3 min after instillation of artificial tears. The inclusion criteria were age and the findings of the ophthalmologist according to the OSDI score. Exclusion criteria for both groups were active eye disease, eye surgery, or use of corticosteroid drops or anti-inflammatory drugs in the past 30 days. All subjects filled out an informed consent (according to the definition contained in "Directive 2001/20/EC"). Statistical analysis of the data was done using IBM SPSS Statistics Software.

**Results:**

1. there is a difference in uncorrected visual acuity compared to corrected visual acuity in both groups after instillation of artificial tears (ETDRS SSO: ETDRS ASO= 5.2:3.5//significant in the SSO group;  $p < 0.001$ );
2. there is a statistically significant difference in uncorrected visual acuity in both groups after instillation of artificial tears (ETDRS SSO: ETDRS ASO= 4.4:5.4//significant in the SSO group;  $p < 0.001$ )

**Conclusion:**

before determining the visual acuity, it would be advisable for professional drivers to instill artificial tears in order to achieve the best possible result and a more correct assessment of the given criteria!

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Diana

**Ime i prezime / First and Last Name:-Last**

Bućan

**101. Marko Lukić**

**Naslov:**

Perspektiva umjetne inteligencije kod prepoznavanja retinalnih bolesti

**Autori:**

Dr Marko Lukic, PhD FEBO FASRS

**Ustanova:**

Moorfields Eye Hospital NHS Trust

**Cilj:**

Prikazati perspektivu umjetne inteligencije kod prepoznavanja retinalnih stanja

**Bolesnici i metode:**

Prikaz Deep learning modela umjetne inteligencije

**Rezultati:**

Rad ce prikazati perspektivu umjetne inteligencije kod prepoznavanja retinalnih stanja. Vecina prezentacije bazirat ce se na rad kolaborativne grupe Moorfields Eye Hospital i Google Deep Mind-a.

**Zaključak:**

Umjetna inteligencija u oftalmologiji moze biti korisna kod ranog prepoznavanja retinalnih stanja . Ona ne zamjenjuje liječnike te moze biti odlican alat u svakodnevnom radu.

**Title:**

The perspectives of AI in recognition of retinal conditions

**Authors:**

Dr Marko Lukic, PhD FEBO FASRS

**Institution:**

Moorfields Eye Hospital NHS Trust

**Aim:**

To show current trends in AI in ophthalmology, emphasizing the potential or early recognition of retinal conditions

**Patients and methods:**

We will show a deep-learning based model of AI.

**Results:**

This work will show the potential of artificial intelligence in early recognition of retinal conditions. Most of the presentation is based on work from collaborative group between Moorfields Eye Hospital and Google's Deep Mind.

**Conclusion:**

Artificial intelligence in ophthalmology may be useful in early recognition of retinal conditions. It does not replace doctors and it may be an excellent tool in everyday clinical practice.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Marko

**Ime i prezime / First and Last Name:-Last**

Lukic

**102. Marko Lukić**

**Naslov:**

Solitarni koroidalni granulom - prikaz slucaja

**Autori:**

Dr Marko Lukic, PhD FEBO FASRS, Mr Mark Westcott, FRCOphth

**Ustanova:**

Moorfields Eye Hospital NHS Trust

**Cilj:**

Prikazati pristup pacijentu sa suspektnim koroidalnim granulomom

**Bolesnici i metode:**

Multimodal imaging i multidisciplinarni pristup (oftalmolog i onkolog) su korišteni u obradi pacijenta.

**Rezultati:**

Nakon gore spomenutog pristupa doslo se do zaključka da je pacijent razvio solitarni koroidalni granulom koji je opisan u literaturi te koji ne treba liječenje.

**Zaključak:**

Solitarni koroidalni granulom se dijagnosticira metodom isključivanja. Nakon što se potvrdi dijagnoza isti ne zahtjeva liječenje.

**Title:**

Solitary Choroidal Granuloma

**Authors:**

Dr Marko Lukic, PhD FEBO FASRS Mr Mark Westcott, FRCOphth

**Institution:**

Moorfields Eye Hospital NHS Trust

**Aim:**

To show the workup and management of patient with solitary choroidal granuloma

**Patients and methods:**

Patient underwent retinal multimodal imaging and a multidisciplinary approach (ophthalmologist and ocular oncologist) was established.

**Results:**

The overall workup revealed that patient has developed solitary choroidal melanoma which has been described in the literature. All potential malignancies and treatable causes were excluded. No treatment was required.

**Conclusion:**

The solitary choroidal granuloma is a diagnosis of exclusion. Such lesions do not require treatment.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA UVEA-u / Uvea section

**Titula / Title:**

Dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Marko

**Ime i prezime / First and Last Name:-Last**

Lukić

### 103. Lorena Karla Rudež

**Naslov:**

Učinkovitost selektivne laserske trabekuloplastike u fakičnim i pseudofakičnim očima u jednogodišnjoj retrospektivnoj studiji praćenja.

**Autori:**

Lorena Karla Rudež<sup>1</sup>, Martina Tomić<sup>2</sup>, Sania Vidas Pauk<sup>1</sup>, Dina Lešin Gaćina<sup>1</sup>, Iva Bešlić<sup>1</sup>, Martin Oroz<sup>1</sup>, Sonja Jandrovkić<sup>1,3</sup>

**Ustanova:**

1 Klinika za oftalmologiju, KBC Zagreb, Hrvatska 2 Klinika za dijabetes, endokrinologiju i bolesti metabolizma Vuk Vrhovac, Zagreb, Hrvatska 3 Medicinski fakultet Sveučilišta u Zagrebu, Zagreb, Hrvatska

**Cilj:**

Procijeniti ulogu prethodno učinjene operacije katarakte na ishod selektivne laserske trabekuloplastike (SLT) u bolesnika s glaukomom koji nije zadovoljavajuće kontroliran ili ne podnose medikamentoznu terapiju.

**Bolesnici i metode:**

152 oka (112 fakičnih, 40 pseudofakičnih) s različitim tipovima glaukoma liječenih SLT-om zbog nedovoljne kontrole IOT-

a uključena su u ovu jednogodišnju retrospektivnu kohortnu studiju praćenja. Pacijentima je primjenjen SLT prema standardnom protokolu. Podaci su zabilježeni nulti dan (prije SLT), jedan sat, jedan mjesec, tri mjeseca, šest mjeseci i godinu dana nakon SLT. Uspjeh SLT definiran je kao smanjenje IOT-

a za  $\geq 20\%$  nakon jedne godine bez potrebe za dodatnim lijekovima, laserom ili operacijom. Čimbenici povezani s uspjehom/neuspjehom analizirani su pomoću softvera Statistica verzije 14.01.

**Rezultati:**

Nisu primijećene značajne razlike u vrijednostima IOT-

a, medijanu korištenih topikalnih glaukopskih lijekova i postotku bolesnika liječenih peroralnim acetazolamidom prije SLT-

a između fakičnih i pseudofakičnih skupina s različitim tipovima glaukoma. Prije SLT-

a, srednja vrijednost IOT-

a u fakičnim očima bila je  $20,57 \pm 4,07$  mmHg, a u pseudofakičnim  $20,78 \pm 3,68$  mmHg. Godinu dana nakon SLT-

a, srednji IOT u 69 fakičnih očiju koji su završili studiju se smanjio na  $16,98 \pm 3,81$  mmHg ( $p=0,178$ ),

bez statističkog značaja. Nasuprot tome, u 20 pseudofakičnih očiju koji su završili studiju, srednji IOT statistički se značajno smanjio na  $15,50 \pm 3,57$  mmHg ( $p=0,002$ ). Godinu dana nakon SLT-

a, smanjenje IOT-

a od  $\geq 20\%$  primijećeno je u 37 (53,6%) fakičnih i 14 (70%) pseudofakičnih očiju. Medijan i postotak smanjenja IOT-a u fakičnoj skupini bili su 4,5 (0-12) mmHg i 23,1 (0-

50) %, a u pseudofakičnoj skupini 8,0 (0-13) mmHg i 33,3 (0-52) %. Porast IOT-

a godinu dana nakon SLT-

a primijećen je u 11 (15,9%) fakičnih i 2 (10%) pseudofakičnih očiju koji su završili studiju. Jednogodišnje smanjenje IOT-a nakon liječenja SLT-om bilo je u pozitivnoj korelaciji s dobi ( $p=0,048$ ), IOT-



om prije liječenja ( $p < 0,001$ ) i operacijom katarakte prije liječenja ( $p = 0,047$ ), dok je povećanje IOT-a bilo povezano s muškim spolom ( $p = 0,044$ ) i prisutnost katarakte ( $p = 0,036$ ).

**Zaključak:**

Bolesnici s operacijom katarakte prije liječenja SLT-om i pseudofakičnim očima postigli su bolje rezultate SLT-a kao dodatnog liječenja za nedovoljno kontrolirani glaukom ili netolerantni na medikamentoznu terapiju. To ukazuje da bi operacija katarakte praćena SLT-om mogla biti učinkovita terapijska kombinacija za fakične bolesnike sa zadovoljavajuće kontroliranim IOT-om na medikamentoznoj terapiji, s ciljem ukidanja sve medikamentozne terapije. Potrebno je provesti daljnja istraživanja kako bi se ispitalo postoji li korist kod svih pacijenata s početnom ili tek nezrelom kataraktom i nekontroliranim glaukomom kada bi prije SLT-a bili podvrgnuti operaciji katarakte.

**Title:**

Efficacy of selective laser trabeculoplasty in phakic and pseudophakic eyes in one-year follow-up retrospective study.

**Authors:**

Lorena Karla Rudež<sup>1</sup>, Martina Tomić<sup>2</sup>, Sania Vidas Pauk<sup>1</sup>, Dina Lešin Gaćina<sup>1</sup>, Iva Bešlić<sup>1</sup>, Martin Oroz<sup>1</sup>, Sonja Jandroković<sup>1,3</sup>

**Institution:**

1Department of ophthalmology, University Hospital Centre Zagreb, Croatia 2Vuk Vrhovac University Clinic for Diabetes, Endocrinology and Metabolic Diseases, Zagreb 3School of medicine, University of Zagreb, Croatia

**Aim:**

To evaluate the role of pretreatment cataract surgery on the selective laser trabeculoplasty (SLT) outcome in glaucoma patients not sufficiently controlled or intolerant to medical therapy.

**Patients and methods:**

152 eyes (112 phakic, 40 pseudophakic) with different glaucoma types treated by SLT for insufficient IOP control were included in this one-year follow-up retrospective cohort study. Patients received SLT in a standard protocol. Data were recorded on the 0th day (before SLT), one hour, the 1st month, the 3rd month, the 6th month, and one year after SLT. SLT success was defined as an IOP reduction of  $\geq 20\%$  after one year without needing further medication, laser, or surgery. Factors associated with success/failure were analyzed using Statistica software version 14.01.

**Results:**

No significant differences were observed in the IOP values, the median of topical glaucoma medications, and the percentage of patients treated with peroral acetazolamide before SLT between the phakic and pseudophakic groups with different glaucoma types. Before SLT, the mean of IOP in phakic eyes was  $20.57 \pm 4.07$  mmHg, and in pseudophakic was  $20.78 \pm 3.68$  mmHg. One year after SLT, the mean IOP in 69 phakic eyes who ended the study decreased insignificantly to  $16.98 \pm 3.81$  mmHg ( $p = 0.178$ ). In contrast, in 20 pseudophakic eyes who completed the study, the mean IOP significantly decreased to  $15.50 \pm 3.57$  mmHg ( $p = 0.002$ ). At one-year post-SLT, the IOP reduction of  $\geq 20\%$  was observed in 37 (53.6%) phakic and 14 (70%) pseudophakic eyes. The median and percentage of IOP reduction in the phakic group were 4.5 (0-12) mmHg and 23.1 (0-50) %, and in the pseudophakic group 8.0 (0-13) mmHg and 33.3 (0-

52) %. The IOP increase at one-year post-SLT was observed in 11 (15.9%) phakic and 2 (10%) pseudophakic eyes who ended the study. However, the one-year posttreatment IOP reduction was positively correlated with age ( $p=0.048$ ), pretreatment IOP ( $p<0.001$ ), and pretreatment cataract surgery ( $p=0.047$ ), while the IOP increase was associated with male gender ( $p=0.044$ ) and presence of cataract ( $p=0.036$ ).

**Conclusion:**

Patients with pretreatment cataract surgery and pseudophakic eyes achieved better results of SLT as an add-

on treatment for insufficiently controlled glaucoma or intolerant to medical therapy. This indicates that cataract surgery followed by SLT could be an efficient therapy combination for phakic patients with sufficiently controlled IOP on medical therapy, with aim of discontinuing all medical therapy. Further research should be conducted to investigate whether all patients with initial or barely immature cataracts and uncontrolled glaucoma should first undergo cataract surgery and then SLT.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Lorena Karla

**Ime i prezime / First and Last Name:-Last**

Rudež

## 104. Kajo Bućan

**Naslov:**

Idiopatska makularna teleangiektazija- saznanja oftalmologa i očekivanja pacijenta

**Autori:**

Kajo Bućan, Irena Marković, Antonela Gverović Antunica, Nenad Vukojević, Ivona Bućan.

**Ustanova:**

Klinika za očne bolesti KBC Split

**Cilj:**

prikazati suvremena saznanja o idiopatskoj makularnoj teleangiektaziji kroz pregled literature i prikaz slučaja

**Bolesnici i metode:**

kroz pregled literature prikazati suvremena patofiziološke zbivanja u podlozi makularne teleangiektazije i predložene načine liječenja uz prikaz pacijenta, starog 41.g., s trajanjem bolesti dvije godine

**Rezultati:**

prikazani su rezultati liječenja pacijenta kroz mjerenja vidne oštine i OCT parametara makule tijekom dvogodišnjeg razdoblja

**Zaključak:**

patogeneza bolesti ostaje za sada nedokučiva. Idiopatska makularna teleangiektazija uzrokuje ograničeni gubitak vida, a anti-VEGF terapija može donekle kontrolirati edem i NV mrežnice.

**Title:**

Idiopathic macular telangiectasia - knowledge of ophthalmologists and patient expectations

**Authors:**

Kajo Bućan, Irena Marković, Antonela Gverović Antunica, Nenad Vukojević, Ivona Bućan.

**Institution:**

Department of Ophthalmology, University Hospital Center Split

**Aim:**

to present current knowledge about idiopathic macular telangiectasia through a review of the literature and a case report

**Patients and methods:**

through a review of the literature, present the contemporary pathophysiological events underlying macular telangiectasia and the suggested methods of treatment along with a presentation of a 41-year-old patient with a duration of the disease of two years.

**Results:**

the results of the patient's treatment are presented through measurements of visual acuity and OCT parameters of the macula over a two-year period

**Conclusion:**

the pathogenesis of the disease remains unclear for now. Idiopathic macular telangiectasia causes limited vision loss, and anti-VEGF therapy can somewhat control retinal edema and NV.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Kajo

**Ime i prezime / First and Last Name:-Last**

Bućan

## 105. Vernesa Sofić-Drino

**Naslov:**

Asherov prsten: bilateralno rožnično prstenasto stromalno zamućenje

**Autori:**

Vernesa Sofić-Drino, Azra Mehmedovic, Alma Biscevic, Melisa Ahmedbegovic-Pjano

**Ustanova:**

Specijalna bolnica za oftalmologiju Svjetlost, Sarajevo, Bosna i Hercegovina

**Cilj:**

Prikazati slučaj neobične bilateralne neprozirnosti rožnice u obliku prstena kod asimptomatskog pacijenta bez sličnih abnormalnosti otkrivenih kod rođaka prvog stupnja.

**Bolesnici i metode:**

Prikaz slučaja. Oftalmološki pregled, laboratorijske analize, optička koherentna tomografija prednjeg segmenta.

**Rezultati:**

56-

godišnji bijelac predstavio je asimptomatske bilateralne koncentrične nprstenasta zamućenja rožnice koje nisu povezane s bilo kakvim sistemskim stanjem. Poprečno-sekcijsko snimanjem rožnice s optičkom koherentnom tomografijom prednjeg segmenta detektovana je stromalna opacifikacija.

**Zaključak:**

Nakon isključivanja drugih etiologija (kompletiranjem opsežne povijesti bolesti, pregleda, slikovnih i laboratorijskih analiza) došli smo do dijagnoze Ascherovog prstena rožnice, izuzetno rijetkog stanja. Čini se da nisu vizualno značajni i nije indicirano liječenje.

**Title:**

ASCHER RING: BILATERAL CORNEAL RING-SHAPED STROMAL OPACITY

**Authors:**

Vernesa Sofić-Drino, Azra Mehmedovic, Alma Biscevic, Melisa Ahmedbegovic-Pjano

**Institution:**

Specialty Eye Hospital Svjetlost, Sarajevo, Bosnia and Herzegovina

**Aim:**

To report one case an unusual appearance of bilateral ring-shaped corneal opacity in an asymptomatic patient with no similar abnormalities detected in first degree relatives.

**Patients and methods:**

Case report. Ophthalmic examination, laboratory studies, anterior segment optical coherence tomography.

**Results:**

A 56 year old white man presented with asymptomatic bilateral concentric ring-shaped opacities not associated with any systemic condition. Cross-sectional imaging of the cornea with anterior segment optical coherence tomography revealed opacification affecting the stroma.

**Conclusion:**

After excluding other etiologies (completion of extensive history, examination, imaging analyses, and laboratory studies) we arrived at a diagnosis of Ascher corneal ring, an extremely rare entity. They do not appear to be visually significant and no treatment is indicated.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Vernesa

**Ime i prezime / First and Last Name:-Last**

Sofić-Drino

## 106. Vernesa Sofic-Drino

**Naslov:**

Prevalencija dijabetičke retinopatije u gradu Sarajevo, Bosna i Hercegovina

**Autori:**

Vernesa Sofic-Drino, Nita Bejdic, Ajla Skopljak-Salkica, Azra Mehmedovic, Melisa Ahmedbegovic-Pjano, Alma Biscevic

**Ustanova:**

Specijalna bolnica za oftalmologiju Svjetlost, Sarajevo, Bosna i Hercegovina

**Cilj:**

Cilj ovog rada je procijeniti trenutnu rasprostranjenost dijabetičke retinopatije i najčešće rizike za njezin razvoj u gradu Sarajevu, glavnom gradu Bosne i Hercegovine.

**Bolesnici i metode:**

Ova retrospektivna jednocentrična studija obuhvatila je 205 pacijenata sa diabetes mellitusom iz grada Sarajeva koji su od augusta 2021. do augusta 2022. godine se podvrgli oftalmološkom pregledu u Specijalnoj bolnici za oftalmologiju Svjetlost, u podružnici smještenoj u centru grada. Pacijenti su prošli potpunu medicinsku procjenu od strane specijalista oftalmologije. Pregled retine je uključivao procjenu prisutnosti dijabetičke retinopatije. Prisutne retinopatija klasificirane su kao blaga neproliferativna retinopatija, umjereno-teška neproliferativna retinopatija ili proliferativna retinopatija (PDR).

**Rezultati:**

Retinopatija je bila prisutna u 40.49% pacijenata uključenih u ovu studiju; 13,17% imalo je blagi oblik dijabetičke retinopatije, 7,80% umjereno-teški oblik, a 19,51% proliferativni oblik dijabetičke retinopatije. Prosječno trajanje bolesti bilo je ukupno 11,12 godina, 11,74 godine kod muškaraca i 10,22 u žena. Makularni edem bio je prisutan u 38,55% bolesnika s retinopatijom, 6,02% u bolesnika s blagim oblikom, 8,43% u bolesnika s umjereno-teškim oblikom i 24,09% u bolesnika s PDR-om.

**Zaključak:**

Prevalencija dijabetičke retinopatije u Sarajevu relativno je visoka, a najčešći je teški oblik bolesti. Redoviti pregled dijabetičke retinopatije u primarnim zdravstvenim i bolničkim oftalmološkim službama preporučuje se za pravovremenu prevenciju oštećenja vida i sprječavanju sljepoće.

**Title:**

Prevalence of Diabetic Retinopathy in the City of Sarajevo, Bosnia and Herzegovina

**Authors:**

Vernesa Sofic-Drino, Nita Bejdic, Ajla Skopljak-Salkica, Azra Mehmedovic, Melisa Ahmedbegovic-Pjano, Alma Biscevic

**Institution:**

Specialty Eye Hospital Svjetlost, Sarajevo, Bosnia and Herzegovina

**Aim:**

The aim of this study is to estimate the current prevalence of diabetic retinopathy and the most common risks for its development in the city of Sarajevo, a Capital of Bosnia and Herzegovina.

**Patients and methods:**

This retrospective single center study included 205 diabetic patients from the city of Sarajevo who attended their regular ophthalmological examination at the Specialty Eye Hospital Svjetlost, in a branch located in the city center, from August 2021 to August 2022. Patients underwent a complete medical assessment by ophthalmology specialists. The retinal examination included an evaluation of the presence of diabetic retinopathy. Any retinopathy present was graded as mild non-proliferative retinopathy, moderate-severe non-proliferative retinopathy, or proliferative retinopathy (PDR).

**Results:**

Retinopathy was present in 40.49% of patients included in this study; 13.17% had the mild form of diabetic retinopathy, 7.80% had the moderate-severe form and 19.51% had a proliferative form of diabetic retinopathy. The mean duration of diabetic diagnosis was 11.12 years overall, 11.74 years in men and 10.22 in women. Macular edema was present in 38.55% of patients with retinopathy, 6.02% in patients with mild form, 8.43% in patients with moderate-severe form and 24.09% in patients with PDR.

**Conclusion:**

The prevalence of diabetic retinopathy in Sarajevo is relatively high, and the most common is a severe form of the disease. Regular diabetic retinopathy screening in primary healthcare services and hospital eye services is highly recommended for the timely prevention of visual impairment and blindness.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Vernesa

**Ime i prezime / First and Last Name:-Last**

Sofić-Drino



**107. Azra Mehmedović**

**Naslov:**

Intravitrealna aplikacija Deksametazona s produženim oslobađanjem u liječenju kroničnog očnog edema kod infekcije sifilisom

**Autori:**

Azra Mehmedović, Vernesa Sofić-Drino, Alma Biščević, Melisa Ahmedbegović-Pjano

**Ustanova:**

Specijalna bolnica za oftalmologiju Svjetlost Sarajevo

**Cilj:**

Glavna svrha ovog izvještaja je pokazati da se makularni edem uzrokovan bilo kojom upalom, bilo bakterijskom, virusnom ili autoimunim porijeklom, može uspješno liječiti, čak i ako je kroničan.

**Bolesnici i metode:**

Našoj klinici je prijavljen muškarac star 31 godinu sa simptomima zamućenog vida na lijevom oku, koji traju unazad godinu dana. Osnovni pregledi su uključivali određivanje korigovane vidne oštrine, mjerenje IOP-

a, pregled pomoću prorezne lampe, indirektnu oftalmoskopiju i OCT skeniranje koji je pokazao značajan makularni edem (centralna fovealna debljina od 353 mikrona). Pokrenuli smo laboratorijske pretrage, kao što su krvna, serološka i imunološka ispitivanja u naredna tri mjeseca nakon njegove prve posjete, zajedno s propisanom topikalnom i periokularnom terapijom kortikosteroidima.

**Rezultati:**

Test VDRL (laboratorija za istraživanje veneričnih bolesti) na sifilis i toksokarijazu bio je pozitivan. Donijeli smo najbolju odluku i preporučili daljnju terapiju intravitrealnom primjenom Deksametazona s produženim oslobađanjem od 0,7mg. Tjedan dana nakon intravitrealne primjene kortikosteroida na kontrolnom pregledu, na stražnjem segmentu je bio normalan nalaz bez makularnog edema (centralna fovealna debljina 269 mikrona).

**Zaključak:**

Neisključivo je da infekcija *Treponema pallidum* (TP) uzrokuje izolirani makularni edem bez ikakvih drugih simptoma na prednjem segmentu oka. Ima indirektno djelovanje na makulu, a ne uzrokuje samo edem papile, vaskulitis retine, retinohoroiditis i upalni edem optikusa, kako se očekivalo. TP, ili bakterijski transmembranski protein (treponemski ligandi) koji direktno djeluje na vaskularne endotelne stanice retinalnog pigmentnog epitela, bit će ključ najizvjesnijeg mehanizma ovog stanja. Povezan je sa mogućnošću lučenja citokina i interakcijama između imunih ćelija indirektno.

**Title:**

Intravitreal sustained-release Dexamethasone implant in treatment for chronic ocular edema in Syphilis infection

**Authors:**

Azra Mehmedovic, Vernesa Sofic-Drino, Alma Biscevic, Melisa Ahmedbegovic-Pjano

**Institution:**

Eye Clinic Svjetlost Sarajevo

**Aim:**

The main purpose of this case report is to show that macular edema caused by any inflammation, either bacteria, virus, or autoimmune origin, can be treated successfully, even if it is chronic.

**Patients and methods:**

A 31-year-

old man has been reported to our clinic with symptoms of blurry vision in the left eye, which occurred during the last year. Basic examinations included CDVA, IOP measurement, slit-lamp examination, indirect ophthalmoscopy, and OCT scan that showed significant macular edema (central foveal thickness of 353 microns). We initiated laboratory searches, such as blood, serology, and immunology testing for the next three months after his first visit, together with prescribed topical and periocular corticosteroid therapy.

**Results:**

The test to VDRL (venereal disease research laboratory) for Syphilis and Toxocariasis came positive. We took the best decision and recommended further therapy with the intravitreal application of Dexamethasone Implant 0.7mg. One week after the intravitreal application of corticosteroids on the control exam, there were normal findings on the posterior segment with no macular edema (central foveal thickness of 269 microns).

**Conclusion:**

It is unexclusive that infection by *Treponema pallidum* (TP) causes isolated macular edema without any other symptoms on the anterior segment of the eye. It has indirect action on the macula, not just causing papilledema, retinal vasculitis, retinochoroiditis, and inflammatory disc edema, as expected. TP, or the bacteria transmembrane protein (treponemal ligands) directly acting on vascular endothelial cells of the RPE cells, will be the key to the most certain mechanism of this condition. It is related to the possibility of the secretion of cytokines and the interactions between immune cells indirectly.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Azra

**Ime i prezime / First and Last Name:-Last**

Mehmedović

**Naslov:**

Akutni glaukomi napad – splet nesretnih događaja

**Autori:**

Antonio Kokot<sup>1,2</sup>, Marija Olujić<sup>1,2</sup>, Slaven Balog<sup>1,2</sup>

**Ustanova:**

Oftalmološka poliklinika dr. Balog, Osijek, Republika Hrvatska; Medicinski fakultet Osijek, Sveučilište Josipa Jurja Strossmayera u Osijeku, Osijek, Republika Hrvatska

**Cilj:**

Prikazati razvoj događaja i splet nesretnih okolnosti započetih razvojem akutnog glaukomi napada kod starije ženske bolesnice bez povijesti glaukoma prilikom obrade zbog primjene anti-VEGF terapije.

**Bolesnici i metode:**

80-

godišnja ženska bolesnica upućena u našu ustanovu poradi dijagnostike i liječenja senilne makularne degeneracije lijevog oka. Pacijentica je bez povijesti glaukoma, s polaganim slabljenjem vida na lijevom oku unazad godinu dana. Liječi se zbog arterijske hipertenzije i hiperlipidemije od 2002.

**Rezultati:**

Pacijentici po dolasku u jutarnjim satima se izmjeri vidna oština (koja je bez korekcije 0,4/0,05) i očni tlak (GAT: 12,0/15,3 mmHg), te se nakon širenja zjenica tropikamidom pristupi pregledu te provedenju dijagnostičkih slikovnih metoda – FF, OCT i FAG. Poslijepodne se pacijentici javi glavobolja i povraćanje te se navečer u pratnji kćeri uputi na hitni bolnički prijem gdje je učinjena široka obrada, CT glave i opservacija u trajanju od 12h, kako nije nađeno hitnog životno ugrožavajućeg stanja pacijentica se otpusti s uputom da se javi oftalmologu. Pacijentica se u našu ustanovu javlja tek nakon 8 dana gdje ustanovimo kako ima akutni glaukomi napadaj desnog oka s tlakom GAT: 45,4 mmHg. Pacijentici se primjeni puna antiglaukomska terapije lokalno, peroralno i sistemno na što vrijednosti očnog tlaka padnu (22,3 mmHg), međutim zbog jakog edema rožnice ne uspije se učiniti Nd:Yag laser iridotomija. Pacijentica se naruči na kontrolu za 3 dana na kojoj se izmjere normalne vrijednosti očnog tlaka (GAT: 14,6 mmHg) te se dogovorimo učiniti Nd:Yag laser iridotomiju čim se rožnica izbistri. U narednim kontrolama pokazalo se kako je pacijentica neredovito koristila odnosno prestala koristiti antiglaukomsku terapiju što je rezultiralo odlukom da se operira mrežna desnog oka uz iridektomiju s ciljem smanjenja tlaka. Odluka se pokazala ispravnom te su nakon operacije mrežne vrijednosti očnog tlaka pale na vrijednosti ispod 17 mmHg, međutim vidna oština na desnom oku se spustila na L+P-.

**Zaključak:**

Akutni glaukomi napad je hitno stanje koje rezultira propadanjem živčanih vlakana ukoliko ne bude čim prije zbrinuto. Splet nesretnih okolnosti poput nepravovremenog javljanja oftalmologu i neredovitog korištenja antiglaukomske terapije rezultiralo je izrazitim oštećenjem vidnog živca i izrazitom smanjenjem vidne oštine.

**Title:**

Acute glaucoma attack - a series of unfortunate events

**Authors:**

Antonio Kokot<sup>1,2</sup>, Marija Olujić<sup>1,2</sup>, Slaven Balog<sup>1,2</sup>

**Institution:**

1 - Ophthalmology Polyclinic Dr. Balog, Osijek, Republic of Croatia 2 - Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek, Osijek, Republic of Croatia

**Aim:**

To present the development of events and a set of unfortunate circumstances that started with the development of an acute glaucoma attack in an elderly female patient without a history of glaucoma during diagnostic procedures due to the use of anti-VEGF therapy.

**Patients and methods:**

An 80-year-old female patient was referred to our institution, due to diagnostics and treatment of a senile macular degeneration of the left eye. The patient had no history of glaucoma, though with a gradual weakening of vision in the left eye for the past year. The patient has been treated for arterial hypertension and hyperlipidemia since 2002.

**Results:**

Upon arrival in the morning, the patient's visual acuity (which was 0,4/0,05 without correction) and intraocular pressure (GAT: 12,0/15,3 mmHg) were measured, and after the dilation of the pupils with tropicamide, the examination and diagnostic imaging methods were performed - FF, OCT and FAG. In the afternoon, the patient developed a headache and vomiting, and in the evening, accompanied by her daughter, the patient went to the emergency hospital admission, where a wide treatment, CT scan of the head and observation were performed for 12 hours. As no urgent life-

threatening conditions were found, the patient was discharged with instructions to contact an ophthalmologist. The patient came to our institution after eight (8) days, where it was found out that she had an acute glaucoma attack in the right eye with a GAT intraocular pressure of 45,4 mmHg. The patient was administered with full anti-glaucoma therapy - local, peroral and systemic, followed by the drop of intraocular pressure values (22,3 mmHg). However, due to severe corneal oedema, Nd:Yag laser iridotomy was not performed. The patient is scheduled for a follow-

up in 3 days, when normal values of intraocular pressure were measured (GAT: 14,6 mmHg) and an agreement to perform a Nd:Yag laser iridotomy as soon as the cornea is clear was settled. In the subsequent controls, it was realised that the patient irregularly used and stopped using anti-glaucoma therapy, which resulted in the decision to surgically operate the cataract of the right eye and to perform an iridectomy with the aim of reducing the intraocular pressure. The decision turned out to be correct - after the cataract surgery was performed, the intraocular pressure values dropped below 17 mmHg. Nevertheless, the visual acuity in the right eye dropped to L+P-.

**Conclusion:**

An acute glaucoma attack is an emergency condition that results in the deterioration of nerve fibres, if it is not treated as soon as possible. A series of unfortunate circumstances, such as untimely reporting to an ophthalmologist and irregular use of anti-glaucoma therapy, resulted in severe damaging of the optic nerve and a significant decrease in visual acuity.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA GLAUKOM / Glaucoma section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Antonio

**Ime i prezime / First and Last Name:-Last**

Kokot

## 109. Marija Olujić

**Naslov:**

Bestova viteliformna makularna distrofija u muškog bolesnika s početkom u odrasloj dobi – prika z slučaja

**Autori:**

Marija Olujić, Slaven Balog, Antonio Kokot

**Ustanova:**

Oftalmološka poliklinika dr. Balog, Osijek, Republika Hrvatska; Medicinski fakultet Osijek, Sveučilište Josipa Jurja Strossmayera u Osijeku, Osijek, Republika Hrvatska

**Cilj:**

Prikazati slučaj unilateralne Bestove viteliformne makularne distrofije (BVMD) u muškog bolesnika s početkom bolesti u odrasloj dobi

**Bolesnici i metode:**

36-godišnji muški bolesnik; oftalmološki pregled s dijagnostikom – OCT, FAF

**Rezultati:**

Bestova viteliformna makularna distrofija (BVMD) je sporo progresivna, nasljedna retinalna distrofija koja zahvaća retinalni pigmentni epitel što dovodi do karakterističnog bilateralnog žutog izgleda makule u obliku "žumanjka", rijetko unilateralnog. Isprva je vidna oštrina uredna; zatim se centralno smanjuje s pojavom metamorfopsija. Nasljeđivanje je obično autosomno dominantno; una toč tome može doći do autosomno recesivnog nasljeđivanja. Uzrok je greška u genu koji se zove BEST1.

36-

godišnji bolesnik dolazi na oftalmološki pregled 2022. godine budući da je tijekom prošle godine primijetio pad vidne oštine lijevog oka. Oštrina vida - desno/lijevo oko bez korekcije: 0,86/0,15. Makula desnog oka bila je pravilna s druziformnim promjenama, dok je u makuli lijevog oka bila uočljiva eksudacija s početnim ožiljcima i skraćanjem. Optička koherentna tomografija (OCT) pokazala je nakupljanje amorfnog materijala u makuli subretinalno s odvajanjem neurosenzorne retine, subretinalne tekućine i stvaranjem epiretinalne membrane u lijevom oku. Autofluorescencija fundusa (FAF) lijevog oka pokazala je blokadu autofluorescencije centralno u makuli - opravdana su mnja na BVMD. Pacijent je otpušten sa sljedećim preporukama: napraviti fluoresceinsku angiografiju, elektrofiziološko testiranje i genetsko testiranje na BEST1-

4 mutacije. U slučaju pozitivnog nalaza - potrebno je genetsko savjetovanje pacijenta vezano uz planiranje obitelji. Ako se pojave komplikacije, tj. neovaskularizacija koroideje ili eksudativna aktivnost, mogu se primijeniti anti-VEGF injekcije.

**Zaključak:**

Trenutačno ne postoji terapija za liječenje BVMD-

a. Unilateralni izgled je izuzetno rijedak. Redoviti pregledi važni su za praćenje stanja bolesnika i progresije bolesti kako bi se pravovremenom primjenom odgovarajućih lijekova spriječilo daljnje pogoršanje vidne oštine.

**Title:**

Best vitelliform macular dystrophy in a male patient with an adult onset – case report

**Authors:**

Marija Olujić, Slaven Balog, Antonio Kokot

**Institution:**

Ophthalmology Polyclinic Dr. Balog, Osijek, Republic of Croatia; Faculty of Medicine Osijek, Josip J uraj Strossmayer University of Osijek, Osijek, Republic of Croatia

**Aim:**

To present a case of unilateral Best's vitelliform macular dystrophy (BVMD) in a male patient with onset of the disease in adulthood

**Patients and methods:**

36-year-old male patient; ophthalmological examination with diagnostics – OCT, FAF

**Results:**

Best vitelliform macular dystrophy (BVMD) is a slowly progressive, hereditary retinal dystrophy involving the retinal pigment epithelium which leads to a characteristic bilateral yellow "egg-yolk" appearance of the macula, rarely unilateral. Primarily visual acuity is proper; afterwards decreases centrally with metamorphopsia. Inheritance is usually in autosomal dominant manner; nevertheless autosomal recessive inheritance may occur. Cause is a fault in a gene called BEST1.

36-year-

old male patient comes for an ophthalmological examination in 2022 since noticing decrease in left eye visual acuity during last year. Visual acuity - right/left eye without correction: 0,86/0,15. Macula of the right eye was proper with drusiform changes, while exudation with initial scarring and shortening were noticeable in left eye macula. Optical coherence tomography (OCT) scans showed an accumulation of amorphous material in macula subretinally with detachment of neurosensory retina, subretinal fluid and formation of epiretinal membrane in the left eye. Fundus autofluorescence (FAF) of the left eye revealed an autofluorescence blockage centrally in the macula - justified suspicion of BVMD. Patient was released with following recommendations: to perform fluorescein angiography, electrophysiological testing and genetic testing for BEST1-

4 mutations. In case of a positive finding - genetic counselling for the patient, related to family planning, is necessary. If complications occur, i.e. choroidal neovascularization or exudative activity, anti-VEGF injections could be applied.

**Conclusion:**

Currently no treatment for BVMD exists. Unilateral appearance is extremely rare. Regular examinations are important for monitoring the patient's condition and disease progression, aiming to prevent further deterioration of visual acuity by timely administering appropriate medications.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Marija

**Ime i prezime / First and Last Name:-Last**

Olujić

## 110. Edi Ladavac

**Naslov:**

MacTel2

**Autori:**

Edi Ladavac

**Ustanova:**

Ladavac Očna ambulanta

**Cilj:**

Prikaz slučajeva sa kliničkom slikom i liječenjem

**Bolesnici i metode:**

Pacijenti sa potvrđenom dijagnozom na bazi multimodalnih pretraga

**Rezultati:**

U ovom radu prikazat ću klasičane slučajeve sa multimodalnim imaging kao i neke rane i kasne slučajeve koje je ponakad teško prepoznati uz osvrt na diferencijalnu dijagnozu.

**Zaključak:**

Macularna teleangiektazija je rijetka makularno bolest koje je primarno karakterizirana sa vaskularnim okluzivnim promjenama u makularnom području. Postoje tri tipa, a najčešći je tip 2. Karakteriziran je bilateralnim promjenama sa pojačani makularnim refleksom te ranim makularnim edemom i kasnim sekundarnim neovaskularizacijama kod pacijena srednje i kasnije životne dobi. Diferencijalno dijagnostički moramo razmišljati BRVO, DR i kod neovaskularizacije na nAMD.

**Title:**

MacTel2

**Authors:**

Edi Ladavac

**Institution:**

Ladavac Očna ambulanta

**Aim:**

Case presentation with clinical picture and treatments

**Patients and methods:**

Patients with confirmed diagnosis on the basis of multimodal imaging

**Results:**

In this paper, I will present classic cases with multimodal imaging as well as some early and late cases that are sometimes difficult to recognize with reference to differential diagnosis.

**Conclusion:**

Macular telangiectasia leads to abnormalities of capillaries of the fovea or perifoveal region. Idiopathic macular telangiectasia is usually divided into 3 main groups. The most common form of the three types is Type 2. Macular telangiectasia type 2 (MacTel 2) is acquired and bilateral. Usually found in middle-aged or older patients. Differential diagnosis of retinal capillary telangiectasia include branch retinal vein occlusion, diabetic retinopathy, and in cases of neovascularization, age-related macular degeneration

**Kongres / Congresse:**



22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Edi

**Ime i prezime / First and Last Name:-Last**

Ladavac

## 111. Karla Randelović

**Naslov:**

Suzni biomarker sindroma suhog oka u bolesnika s Hashimotovim tireoiditisom

**Autori:**

Karla Randelović, Ivanka Petric Vicković, Andreja Tešija Kuna, Tomislav Jukić, Zoran Vataavuk

**Ustanova:**

KBC Sestre milosrdnice: Klinika za očne bolesti, Klinika za medicinsku biokemiju, Klinika za onkologiju i nuklearnu medicinu

**Cilj:**

Analizirati suzni film bolesnika s Hashimotovim tireoiditisom.

**Bolesnici i metode:**

U ovo prospektivno istraživanje uključene su dvije grupe. Prva grupa ispitanika su bolesnici koji boluju od Hashimotovog tireoiditisa u eutireozu, a druga grupa je kontrolna sastavljena od zdravih pojedinaca bez etioloških čimbenika koji uzrokuju suhoću oka. Nad obje grupe ispitanika provodi se OSDI upitnik za procjenu subjektivne suhoće oka, mjeri se prekornealni suzni film pomoću Pentacam uređaja, debljina rožnice, Schirmer test bez i sa anestetikom, te TBUT. Iz sakupljenog uzorka suza analizira se MMP-9 na klinici za medicinsku biokemiju.

**Rezultati:**

U istraživanje je uključeno 50 ispitanika (25 zdravih, 25 bolesnih), prosječne starosti  $38.82 \pm 10.22$  godina, većinom žene. Schirmer test bez anestetika nije ukazao na suhoću oka između dvije grupe ispitanika, kod kontrola prosječna vrijednost je  $19.62 \pm 9.3$  mm, a bolesna grupa  $18.92 \pm 9.3$  mm, kao ni Schirmer s anestetikom (kontrola  $20.8 \pm 7.5$  mm, bolesni  $23.12 \pm 8.9$  mm). TBUT je ukazao na nestabilnost suznog filma bolesnika s Hashimotovim tireoiditisom u usporedbi s kontrolom (kontrola  $13.9 \pm 4.8$  sekundi, bolesni  $7 \pm 3.7$  sekundi). Debljina rožnice kontrola je veća,  $543.12 \pm 25.73$   $\mu$ m, a bolesnih  $552.24 \pm 32.38$   $\mu$ m. Prekornealni suzni film bolesnih pokazao se tanjim u odnosu na kontrole (kontrola  $33.6 \pm 12$   $\mu$ m, bolesni  $31.44 \pm 10.9$   $\mu$ m). Iznos OSDI upitnika kod kontrola je prosječne vrijednosti  $3.56 \pm 4.25$  što pripada normalnim vrijednostima koje ne upućuju na prisutnost subjektivne suhoće oka, dok je u bolesnoj skupini bilo ispitanika od onih bez simptoma suhoga oka do onih s teškim simptomima (11 normal, 6 mild, 1 moderate, 7 severe). Analiza MMP-9 iz suza pokazala je da svi u kontrolnoj skupini imaju vrijednosti manje od 40 ng/ml, a u bolesnoj skupini iznad,  $296.78 \pm 76.51$  ng/ml.

**Zaključak:**

MMP-

9 u suzama može biti koristan i prikladan alat za procjenu i prepoznavanje upale u očima bolesnika s Hashimotovim tireoiditisom prije razvoja ozbiljnijih simptoma suhoga oka.

**Title:**

Tear biomarker of dry eye syndrome in patients with Hashimoto's thyroiditis

**Authors:**

Karla Randelović, Ivanka Petric Vicković, Andreja Tešija Kuna, Tomislav Jukić, Zoran Vataavuk

**Institution:**

University Hospital Center Sestre milosrdnice: Ophthalmology department, Department for medical biochemistry, Department for oncology and nuclear medicine

**Aim:**

To analyze the tear film of patients with Hashimoto's thyroiditis.

**Patients and methods:**

Two groups were included in this prospective study. The first group of subjects are patients suffering from Hashimoto's thyroiditis in euthyroidism, and the second group is a control group composed of healthy individuals without etiological factors that cause dry eye. Both groups are administered the OSDI questionnaire to assess subjective eye dryness, the precorneal tear film is measured by Pentacam, the thickness of the cornea, the Schirmer test without and with anesthetic, and TBUT. The collected tear sample is analyzed for MMP-9 at the medical biochemistry clinic.

**Results:**

The study included 50 subjects (25 healthy, 25 with Hashimoto's thyroiditis-HT), average age  $38.82 \pm 10.22$  years, mostly women. The Schirmer test without anesthetic did not indicate eye dryness between the two groups of subjects, the average value for controls was  $19.62 \pm 9.3$  mm, and the HT group  $18.92 \pm 9.3$  mm, as well as Schirmer with anesthetic (control  $20.8 \pm 7.5$  mm, HT  $23.12 \pm 8.9$  mm). TBUT indicated instability of the tear film of patients with Hashimoto's thyroiditis compared to controls (control  $13.9 \pm 4.8$  seconds, HT  $7 \pm 3.7$  seconds). The thickness of the cornea of the controls is greater,  $543.12 \pm 25.73$   $\mu\text{m}$ , and of the HT  $552.24 \pm 32.38$   $\mu\text{m}$ . The precorneal tear film of the patients was thinner compared to the controls (control  $33.6 \pm 12$   $\mu\text{m}$ , HT  $31.44 \pm 10.9$   $\mu\text{m}$ ). The score of the OSDI questionnaire in controls has an average value of  $3.56 \pm 4.25$ , which belongs to normal values that do not indicate the presence of subjective eye dryness, while in the HT group there were subjects from those without dry eye symptoms to those with severe symptoms (11 normal, 6 mild, 1 moderate, 7 severe). Analysis of MMP-9 from tears showed that all in the control group had values less than 40 ng/ml, and in the HT group above,  $296.78 \pm 76.51$  ng/ml.

**Conclusion:**

MMP-

9 in tears may be a useful and convenient tool to assess and identify inflammation in the eyes of patients with Hashimoto's thyroiditis before the development of more serious dry eye symptoms.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Karla

**Ime i prezime / First and Last Name:-Last**

Ranđelović

**Naslov:**

Acetazolamid i fakoemulzifikacija – što može poći po zlu?

**Autori:**

Dora Martinčević, Biljana Kuzmanović Elabjer, Damir Bosnar, Mladen Bušić, Jurica Predović, Josipa Bračić

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet Osijek, Fakultet za dentalnu medicinu i zdravstvo Osijek, Sveučilišta J.J. Strossmayera u Osijeku, Referentni centar Ministarstva zdravstva Republike Hrvatske za dječju oftalmologiju i strabizam

**Cilj:**

Ukazati na pojavu komplikacije nakon primjene acetazolamida u svrhu liječenja pseudofaknog cistoidnog makularnog edema (PCME; Sy Irvine-Gass) i važnost brze dijagnostike i promptnog liječenja.

**Bolesnici i metode:**

Sedamdesetgodišnja pacijentica upućena je u ambulantu za stražnji segment oka zbog perzistentnog pseudofaknog cistoidnog makularnog edema (PCME; Sy Irvine-Gass). Pacijentica navodi pogoršanje vidne oštine 4 tjedna nakon operacije katarakte na desnom oku. Najbolje korigirana vidna oština (BCVA) na desnom oku bila je 0,1 log MAR uz uredan nalaz prednjeg segmenta oka kao i uredne vrijednosti intraokularnog tlaka. Pregledom očne pozadine u midrijazi pronađen je edem makularnog područja desnog oka koji je verificiran i optičkom koherentnom tomografijom (OCT). Po postavljanju dijagnoze CME ordinirana je per os terapija acetazolamidom u dozi od 250 mg; 1 tableta ujutro te pola tablete navečer uz lokalnu terapiju bromfenakom i atropinom 3x dnevno te nadoknadu kalija prema nalazu serumskih elektrolita. Na kontrolnom pregledu nakon 14 dana nalaz vidne oštine kao i prednjeg segmenta oka je nepromijenjen, no pregledom očne pozadine u midrijazi pronađena je serozna ablacija žilnice u inferotemporalnom kvadrantu, verificirana ultrazvučnim pregledom uz ciliokoroidalnu efuziju. OCT-om se verificiraju blago izraženi korioretinalni nabori temporalno, uz blagu regresiju makularnog edema te se postavi sumnja na iatrogeno seroznu ablaciju žilnice uzrokovanu acetazolamidom. Ambulantno se ordinira jednokratna topikalna primjena 1% atropina uz parabolbarnu aplikaciju dexametazona (4mg/1mL) te se iz terapije promptno ukine ranije propisani peroralni acetazolamid.

**Rezultati:**

Na kontrolnom pregledu 5 dana kasnije dolazi do poboljšanja BCVA na 0,05 logMAR, a pregledom očne pozadine vidljiva je regresija serozne ablacije žilnice kao i ciliokoroidalne efuzije potvrđene ultrazvučnim pregledom.

**Zaključak:**

Primjena acetazolamida u liječenju pseudofaknog CME može dovesti do neželjenih komplikacija stoga je potreban poseban oprez pri primjeni acetazolamida i praćenju takvih pacijenata.

**Title:**

Acetazolamide and phacoemulsification - what could go wrong?

**Authors:**

Dora Martinčević, Biljana Kuzmanović Elabjer, Damir Bosnar, Mladen Bušić, Jurica Predović, Josipa Bračić

**Institution:**

University Eye Department, University Hospital "Sveti Duh", Zagreb, Faculty of Medicine Osijek, Faculty of dental medicine and health care Osijek, University Josip Juraj Strossmayer in Osijek Reference center of the Ministry of Health of the Republic of Croatia for pediatric ophthalmology and strabismus

**Aim:**

To point out the possibility of adverse reaction after the use of acetazolamide for the treatment of pseudophakic cystoid macular edema (PCME; Sy Irvine-Gass) and the importance of rapid diagnosis and prompt treatment.

**Patients and methods:**

A 73-year-old female patient was referred to the outpatient clinic for the posterior eye segment due to a persistent pseudophakic cystoid macular edema (PCME; Sy Irvine-Gass). The patient reported deterioration of visual acuity 4 weeks after cataract surgery of the right eye. The best-corrected visual acuity (BCVA) in the right eye was 0.1 log MAR with unremarkable anterior segment finding as well as normal values of intraocular pressure. Dilated fundus examination revealed macular edema of the right eye, which was verified by optical coherence tomography (OCT). After PCME was diagnosed, the patient was prescribed oral therapy with acetazolamide in a dose of 50 mg; 1 pill in the morning and half a pill in the evening with additional local therapy with bromfenac sodium drops 3 times a day and potassium replacement according to the results of serum electrolyte tests. 14 days later at the follow-up exam, there were no changes in visual acuity and/or the anterior eye segment, but dilated fundus examination revealed a serous choroidal detachment in the inferotemporal quadrant, which was verified with an ocular ultrasound examination with a ciliochoroidal effusion. OCT scans revealed slightly visible chorioretinal folds temporally and a moderate regression of macular edema and an iatrogenic serous choroidal detachment is now suspected to be caused by acetazolamide intake. A one-time topical application of 1% atropine with parabolbar application of dexamethasone (4mg/1mL) is prescribed in the outpatient clinic, and the previously prescribed oral acetazolamide is promptly discontinued from the therapy.

**Results:**

At the 5-day follow-up examination, the BCVA improved to 0.05 logMAR. Dilated fundus examination revealed regression of the serous choroidal detachment as well as ciliochoroidal effusion verified with an ultrasound examination.

**Conclusion:**

The use of acetazolamide in the treatment of PCME can lead to unwanted complications, so special caution is required when administering acetazolamide and follow-up in such patients.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Dora

**Ime i prezime / First and Last Name:-Last**

Martinčević

## 113. Svjetlana Brekalo

**Naslov:**

Sindrom vrha orbite u bolesnice s p-ANCA vaskulitisom – prikaz slučaja

**Autori:**

Svjetlana Brekalo, Ivana Ljubić, Davor Batinić, Danijela Karaban, Jelena Zovko, Renata Iveković, Irena Sesar, Antonio Sesar, Ivan Merdžo

**Ustanova:**

Sveučilišna klinička bolnica Mostar

**Cilj:**

Prikazati slučaj akutno nastalog sindroma vrha orbite u bolesnice liječene zbog p-ANCA vaskulitisa.

**Bolesnici i metode:**

Bolesnica u dobi od 61 godinu javlja se na hitni oftalmološki pregled zbog spuštene gornje vjeđe, pada vidne oštine i bolova u području lijevog oka. Bolesnica je prethodno tretirana ciklofosamidom i sustavnim kortikosteroidima zbog osnovne bolesti – p-ANCA vaskulitisa. Metode: Opsežni klinički pregledi od strane oftalmologa, neurologa, neurokirurga, imunologa kao i sveobuhvatna radiološka i laboratorijska dijagnostika.

**Rezultati:**

Oftalmološkim pregledom utvrđeno se značajno smanjena vidna oštrina na lijevom oku (mahanje rukom pred okom) s kompletnom ptozom, oftalmoplegijom te blagom protruzijom bulbusa uz bolove u periorbitalnom području. Zjenica je bila proširena, izrazito tromih fotomotornih reakcija. Ostali nalazi prednjeg segmenta bio je uredan. Na desnom oku vidna oštrina je bila 1.0, s urednim nalazom prednjeg segmenta. Pregledom fundusa oba oka ustanovi se uredan nalaz. Izvršen je niz radioloških i laboratorijskih ispitivanja. MR-om orbita prikaže se u području apeksa lijeve orbite tumorska tvorba promjera 14x11 mm uz posljednju proptozu bulbusa. Opisana tumorska masa dorzalno prominira prema kavernozi sinusa, lateralno blago intrakranijalno u razini donje orbitalne fisure te potiskuje duru. Postavi se radna dijagnoza sindroma apeksa orbite. Budući da je opisana tvorba pokazala znakove granulomatoznog tkiva, ordinira se sustavna parenteralna kortikosteroidna terapija. Na ordiniranu terapiju dolazi do značajnog poboljšanja kliničke slike – oporavka ptoze, bulbomotorike i vidne oštine. Na kontrolnom MR snimku prikaže se opisana tvorba bez značajne promjene u odnosu na stanje prije tretmana.

**Zaključak:**

U bolesnice se razvila slika sindroma vrha orbite uzrokovana granulomatoznom tvorbom, najvjerojatnije u sklopu osnovne upalne bolesti. Također, ne može se isključiti nevezana – idiopatska etiologija pri čemu bi preciznija dijagnoza bila Tolosa-Hunt sindrom.

**Title:**

Orbital apex syndrome in a patient with p-ANCA vasculitis – a case report

**Authors:**

Svjetlana Brekalo, Ivana Ljubić, Davor Batinić, Danijela Karaban, Jelena Zovko, Renata Iveković, Irena Sesar, Antonio Sesar, Ivan Merdžo

**Institution:**

University Hospital Mostar

**Aim:**

To present a case of an acute onset orbital apex syndrome in a patient treated for p-ANCA vasculitis.

**Patients and methods:**

A 61 (sixty one) year-old female patient presented for an urgent ophthalmological examination due to a drooping upper eyelid, decreased visual acuity, and pain in the left periorbital area. The patient was previously treated with cyclophosphamide and systemic corticosteroids due to the underlying disease - p-ANCA vasculitis. Methods: Extensive clinical examinations by ophthalmologist, neurologist, neurosurgeon, immunologist, as well as comprehensive radiological and laboratory diagnostics.

**Results:**

Ophthalmological examination revealed a significantly reduced visual acuity in the left eye (hand movement) with complete ptosis, ophthalmoplegia, and discrete proptosis. The pupil was dilated with diminished pupillary light reflex. Other results of the anterior segment were unremarkable. Visual acuity of the right eye was 1.0, with unremarkable findings of the anterior segment. Fundus exam was within normal limits in both eyes. A series of radiological and laboratory tests were performed. MRI of the orbit showed a tumor formation of 14x11 mm in the apex of the left orbit. The described mass protrudes dorsally towards the cavernous sinus, laterally slightly intracranially at the level of the lower orbital fissure and compresses the dura. A working diagnosis of orbital apex syndrome was made. Since the described mass exhibited signs of a granulomatous tissue, systemic parenteral corticosteroid therapy was started. The prescribed therapy resulted in a significant improvement of the symptoms- recovery of ptosis, ocular motility, and visual acuity. The follow-up MRI image showed no significant changes compared with the image before the treatment.

**Conclusion:**

The patient developed an acute onset orbital apex syndrome caused by the granulomatous formation, most likely as part of the underlying inflammatory disease. An unrelated, idiopathic, etiology cannot be ruled out. In that case, a more precise diagnosis would be Tolosa-Hunt syndrome.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Svjetlana

**Ime i prezime / First and Last Name:-Last**

Brekalo



**Naslov:**

Oftalmološke značajke MELAS sindroma

**Autori:**

Ivana Ljubić, Svjetlana Brekalo, Ivan Merdžo, Ivan Ćavar, Neda Striber, Darija Jurišić

**Ustanova:**

Sveučilišna klinička bolnica Mostar

**Cilj:**

Prikazati slučaj bolesnika s MELAS sindromom (mitohondrijska encefalopatija, laktacidoza i epizode slične moždanom udaru).

**Bolesnici i metode:**

Ovo je prikaz slučaja dječaka u dobi od dvanaest (12) godina koji je imao različite vidne i neurološke simptome. Obavljeni su opsežni klinički pregledi od strane oftalmologa i neuropedijatra, kao i sveobuhvatne radiološke i laboratorijske pretrage.

**Rezultati:**

Nakon četiri dana visoke temperature, pacijent je manifestirao vidne simptome koji uključuju fotofobiju, nemogućnost prepoznavanja lica, horizontalni nistagmus i gubitak perifernog vidnog polja, i neurološke simptome kao što su ataksija, frontalne glavobolje i dismetrija. Oftalmološki pregled pokazao je najbolje korigiranu vidnu oštrinu 1,0 i uredan nalaz prednjeg segmenta. Na stražnjem očnom segmentu uočena je blago rareficirana mrežnica, područja parapapilarne i perifoveolarne atrofije i povećana vijugavost krvnih žila. Optička koherentna tomografija optičkog diska pokazala je blago stanjenje sloja retinalnih živčanih vlakana. Ispitivanje vidnog polja kinetičkom perimetrijom utvrđena je kontrakcija izoptera s gubitkom temporalnog vidnog polja na oba oka. Elektroretinografija i multifokalni elektroretinogram su bili unutar normalnog raspona. Genetska analiza seruma bila je pozitivna na mitohondrijsku mutaciju m.3243A>G i potvrđena je dijagnoza MELAS sindroma.

**Zaključak:**

Bolesnici s MELAS sindromom mogu manifestirati širok raspon vidnih poremećaja, stoga je detaljan oftalmološki pregled neophodan.

**Title:**

Ophthalmic features of MELAS syndrome

**Authors:**

Ivana Ljubić, Svjetlana Brekalo, Ivan Merdžo, Ivan Ćavar, Neda Striber, Darija Jurišić

**Institution:**

University Hospital Mostar

**Aim:**

To present the patient with MELAS (mitochondrial encephalopathy, lacticacidosis and stroke-like episodes) syndrome.

**Patients and methods:**

This is a case report of a 12-year-old male patient who presented with various visual and neurological symptoms. Extensive clinical

examinations were performed by ophthalmologist and neuropediatrician, as well as comprehensive radiological and laboratory tests.

**Results:**

After four days of high fever, patient manifested visual symptoms that included photophobia, inability to recognize faces, horizontal nystagmus and peripheral visual field loss, and neurological symptoms such as ataxia, frontal headaches and dysmetria. Ophthalmic examination demonstrated BCVA of 1.0 and normal anterior segment. Fundus exam exhibited slightly rarefied retina, areas of perifoveolar and parapapillary atrophy and increased vascular tortuosity. Optical coherence tomography of the optic disc demonstrated mild thinning of retinal nerve fiber layer. Visual field testing by kinetic perimetry showed isopter contraction with predominant loss of temporal visual field in both eyes. Full field electroretinography (ERG) and multifocal ERG were within normal range. Genetic serum analysis was positive for mitochondrial mutation m.3243A>G and diagnosis of MELAS was confirmed.

**Conclusion:**

Patients with MELAS syndrome can manifest a wide range of visual disturbances, therefore detailed ophthalmic exam is required.

**Kongres / Congress:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ivana

**Ime i prezime / First and Last Name:-Last**

Ljubić

## 115. Štrbac Tea

### **Naslov:**

Uvealni "masquerade" sindrom kao prva manifestacija metastatskog adenokarcinoma pluća: prikaz slučaja

### **Autori:**

Štrbac Tea<sup>1</sup>, Kuzmanović Elabjer Biljana (mentor) <sup>1</sup>, Koprivanac Antun<sup>2</sup>, Bušić Mladen<sup>1</sup>

### **Ustanova:**

<sup>1</sup>Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Hrvatska, <sup>2</sup>Klinika za unutarnje bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Hrvatska

### **Cilj:**

Uvealni "masquerade" sindromi skupina su različitih očnih bolesti koje mogu oponašati kroničnu intraokularnu upalu i mogu se podijeliti u dvije skupine: ne-neoplastične i neoplastične. Ovdje iznosimo naše iskustvo u dijagnosticiranju i liječenju metastatskog adenokarcinoma pluća s primarnom manifestacijom na šarenici i cilijarnom tijelu.

### **Bolesnici i metode:**

Naš pacijent bio je 82-

godišnji muškarac s pogoršanjem vida i jakim bolovima u desnom oku od prethodnog dana. Iz ra nije medicinske povijesti, liječio je infarkt miokarda prije 10 godina, hipertenziju i hiperlipidemiju. Nikada nije pušio. Desnim okom razabirao je samo pokrete ruku, a vidna oštrina lijevog oka iznosila je 0,2 po logMar skali. Mjerio se intraokularni tlak 33 mmHg na desnom i 14 mmHg na lijevom oku. Biomikroskopija s procjepnom svjetiljkom otkrila je cilijarnu injekciju i hemoragičnu masu koja prekriva temporalnu polovicu šarenice desnog oka. Vidjela se trećina zjenice. Pregled fundusa desnog oka nije se mogao izvršiti.

### **Rezultati:**

L-

9 ultrazvučnom biomikroskopijom dokumentiran je tumor koji je potpuno infiltrirao šarenicu i cilijarno tijelo. Tumor je ispunjavao prednju sobicu, očni kut i cilijarni sulkus i pokrivaio je dvije trećine zjenice. Imerzijskom tehnikom, standardizirana A-

scan ehografija potvrdila je da se radi o leziji visoke refleksije koja je karakteristika infiltrirajućeg rasta karcinoma. CT prsnog koša pokazao je čvrstu ekspanzivnu tvorbu u parenhimu inferiornog režnja desnog plućnog krila. Na odjelu onkologije učinjena je transtorakalna iglena punkcija pod kontrolom MSCT-

a, čime je dokazan adenokarcinom pluća. Indicirano je ciljano i simptomatsko liječenje.

### **Zaključak:**

Uvealne metastaze karcinoma najčešći su uzrok malignih tumora oka u odraslih osoba koje se ne rijetko mogu prezentirati kao „masquerade“ sindrom. Za postavljanje rane dijagnoze potrebna je multidisciplinarna ekspertiza. Liječenje metastatskih tumora u uveu usmjereno je na primarnu bolest.

### **Title:**

Uveitis Masquerade Syndrome as a first manifestation of metastatic lung adenocarcinoma: A case report

### **Authors:**

Štrbac Tea<sup>1</sup>, Kuzmanović Elabjer Biljana (mentor) <sup>1</sup>, Koprivanac Antun<sup>2</sup>, Bušić Mladen<sup>1</sup>

**Institution:**

<sup>1</sup>University Eye Clinic, University Hospital "Sveti Duh", Zagreb, Croatia, <sup>2</sup>Clinic of Internal Medicine , University Hospital "Sveti Duh", Zagreb, Croatia

**Aim:**

The Uveitis Masquerade Syndromes are a group of various ocular diseases that may mimic chronic intraocular inflammation and can be divided into two groups: non-neoplastic and neoplastic. Here, we report our experience of diagnosing and managing metastatic adenocarcinoma of the lungs with primary manifestation to the iris and the ciliary body.

**Patients and methods:**

Our patient was an 82-year-old male presenting with deterioration of vision and intense pain in the right eye since the day before. The patient's past medical history was notable for myocardial infarction 10 years ago, hypertension, and hyperlipidemia. He has never smoked. With his right eye, he only discerned hand movements and the visual acuity of his left eye was 0.2 logMar. Intraocular pressure was 33 mmHg in the right eye and 14 mmHg in the left eye. Slit-lamp biomicroscopy revealed a ciliary injection and hemorrhagic mass overlying the temporal half of the iris of the right eye. The third of the pupil was visible. A fundus examination of the right eye could not be performed.

**Results:**

The L-9 UBM scan documented the tumor completely infiltrating the iris and the ciliary body. The tumor filled the anterior chamber, the angle, and the ciliary sulcus and covered two-thirds of the pupil. The immersion technique standardized A-scan echography confirmed it to be a highly reflective lesion which is a characteristic of infiltrating growth of the carcinoma. CT chest imaging showed a solid expansive formation in the parenchyma of the inferior lobe of the right lung. At the Oncology Department, a Fine Needle Aspiration biopsy was performed under the control of MSCT, which proved lung adenocarcinoma. Targeted and symptomatic treatment was indicated.

**Conclusion:**

Uveal metastasis from carcinoma is the most common cause of ocular malignancy in adults, which can often be presented as masquerade syndrome. Multidiscipline expertise collaboration is needed to make the early diagnosis. Treatment of metastatic tumors to the uvea is aimed at the primary disease.

**Kongres / Congresses:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Tea

**Ime i prezime / First and Last Name:-Last**

Štrbac

**Naslov:**

IOL s produženim fokusom, 3F IOL- usporedba u efikasnosti rješavanja staračke dalekovidnosti i pojavnosti neželjenih nuspojava

**Autori:**

Luka Bilić dr med, prof.dr. sc. Maja Merlak, prof. dr.sc. Iva Dekaris

**Ustanova:**

Poliklinika Bilić Vision

**Cilj:**

Cilj je utvrditi komparativne prednosti i mane između raznih vrsta IOL- tri fokalnih, produženog fokusa i monofokalnih. Te između IOL produženog fokusa koje koriste različitu tehnologiju za funkcioniranje (RayOne Emv i Alcon Vivity). Prednosti uključuju neovisnost o naočama za razne udaljenosti i subjektivno zadovoljstvo pacijenata, a mane prisutnost disfotopsija.

**Bolesnici i metode:**

Studija je prospektivna ne randomizirana. Kriterij uključivanja su pacijenti sa obostrano ugrađeno m jednom od ispitivanih IOL bilo zbog uklanjanja sive mrežnice ili refraktivnog zahvata. Iz studije su isključeni pacijenti sa komorbiditetima, pacijenti koji niti sa najboljom korekcijom iz bilo kojeg razloga ne postižu 1,0 vidnu oštrinu. Pacijenti ispunjavaju upitnike o subjektivnom zadovoljstvu kvalitetom života, neovisnosti o naočalama, te standardizirani Quality of Vision upitnik o disfotopsijama. Određujemo ne korigiranu i korigiranu vidnu oštrinu, čitanje optotipa po Jageru sa i bez korekcije na daljinu. Na kraju određujemo vid na raznim udaljenostima pomoću defokus krivulje uz najbolju korekciju za daljinu.

**Rezultati:**

Proces prikupljanja i obrad podataka je još u tijeku pa će rezultati biti izneseni na kongresu HODa.

**Zaključak:**

Proces prikupljanja i obrad podataka je još u tijeku pa će rezultati biti izneseni na kongresu HODa.

**Title:**

IOLs with extended focus, 3F IOLs- comparison in addressing presbyopia efficiency and appearance of side effects

**Authors:**

Luka Bilić dr med, prof.dr. sc. Maja Merlak, prof. dr.sc. Iva Dekaris

**Institution:**

Bilić Vision Polyclinic

**Aim:**

The goal is to establish comparative advantages and liabilities among various IOL types- tree focal, extended focus and monofocal IOLs. Also between IOLs with extended focus that use different technologies to function (RayOne Emv and Alcon Vivity IOLs). Advantages include spectacle independence for various distances and subjective satisfaction of the patients while liabilities mainly include dysphotopsia..

**Patients and methods:**

Study is prospective, non randomized. Inclusion criteria are that patient have bilaterally implanted one of the tested IOLs whether because of cataract surgery, or because of refractive surgery. Exclusion criteria are various comorbidities, or non 1,0 best corrected visual acuity for any reason. Patient fill the questionnaires regarding quality of life, spectacle independence and standardized Quality of Vision questionnaire for determining levels of dysphotopsia. Best corrected and uncorrected visual acuity is determined monocularly, reading of the Jager tables is done with best correction for far and without correction. Finally defocus curve is done while applying best far vision correction.

**Results:**

Process of data acquiring and processing is still ongoing and will be presented on the annual meeting of Croatian Ophthalmology Society

**Conclusion:**

Process of data acquiring and processing is still ongoing and will be presented on the annual meeting of Croatian Ophthalmology Society

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Dr.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Luka

**Ime i prezime / First and Last Name:-Last**

Bilić

117. **Rajčić Ivan**

**Naslov:**

Prikaz slučaja: Nije svaki nagli pad vida bez jasnog kliničkog pokazatelja optikoneuropatija.

**Autori:**

Rajčić I, Skelin S, Sušac T, Bućan I, Bućan K

**Ustanova:**

KBC Split – Klinika za očne bolesti

**Cilj:**

Potaknuti na razmišljanje patofizioloških procesa u prednjem segmentu oka kod novootkrivenih dijabetičara koji su odmah stavljeni na inzulinsku terapiju.

**Bolesnici i metode:**

Mladi muškarac emetrop s naglim padom vida na oba oka nakon uvođenja inzulinske terapije.

**Rezultati:**

Neupadan klinički pregled i dijagnostički nalazi osim visoke hipermetropske greške koja se nakon nekoliko mjeseci spontano povukla.

**Zaključak:**

Zbog dugotrajne visoke razine glukoze u krvi povećala se koncentracija glukoze i u leći, te je nastala velika razlika u osmotskom tlaku kod apliciranja inzulina. Voda je zbog izjednačavanja osmotskog tlaka difundirala akvaporinskim kanalima te tako smanjila gustoću optičkog medija i lomnu osobnost leće. Dugotrajan proces oporavka je zbog Na/Ka pumpe koja je zaslužena za izbacivanje molekula vode kroz lećnu kapsulu koja djeluje kao polupropusna membrana.

**Title:**

Case Report: Sudden vision loss is not always a clear indicator of optic neuropathy.

**Authors:**

Rajčić I, Skelin S, Sušac T, Bućan I, Bućan K

**Institution:**

Clinical Centre Split - Department of Ophthalmology

**Aim:**

The main objective of this case report is to think about the pathophysiological processes in the anterior segment of the eye in newly diagnosed diabetics who were immediately put on insulin therapy.

**Patients and methods:**

A young male with no refractive errors with sudden loss of vision in both eyes after the introduction of insulin therapy.

**Results:**

The clinical examination and diagnostic findings were unremarkable, except for a high hyperopic error that spontaneously resolved after a few months.

**Conclusion:**

Due to the long-term high level of glucose in the blood, the concentration of glucose in the crystalline lens also increased, and a large difference in osmotic pressure occurred during the administration of insulin. Due to the equalization of the osmotic pressure, water diffused through the aquaporin channels

and thus reduced the density of the optical medium and the refractive power of the lens. The long recovery process is due to the Na/K pump, which is responsible for expelling water molecules through the lens capsule, which acts as a semi-permeable membrane.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU MLADI U OFTALMOLOGIJI / Young Ophthalmologist Section

**Titula / Title:**

Dr.

Specijalizant / Resident

**Ime i prezime / First and Last Name:-First**

Ivan

**Ime i prezime / First and Last Name:-Last**

Rajčić



## 118. Biljana Kuzmanović Elabjer

**Naslov:**

Uloga UBM-a u evaluaciji glaukoma zatvorenog kuta

**Autori:**

B. Kuzmanović Elabjer, M. Bušić, D. Miletić, A. Pleše, M. Bjeloš

**Ustanova:**

Klinika za očne bolesti, Klinička bolnica „Sveti Duh“, Zagreb, Medicinski fakultet, Sveučilište Josipa Jurja Strossmayera u Osijeku, Fakultet za dentalnu medicinu i zdravstvo, Sveučilište Josipa Jurja Strossmayera u Osijeku

**Cilj:**

Predstaviti ulogu ultrazvučne biomikroskopije (UBM) u evaluaciji glaukoma zatvorenog kuta

**Bolesnici i metode:**

UBM je najkorisnija metoda istraživanja patologije šarenice i cilijarnog tijela. Može prikazati njihove insercije, oblik i odnos s drugim očnim tkivima. Još jedna od glavnih struktura za glaukom zatvorenog kuta koju vizualizira UBM je leća. Pregled daje važne informacije o njezinoj konfiguraciji, položaju i anteroposteriornom promjeru. Omogućuje procjenu i mjerenje kuta, kao i svoda leće.

**Rezultati:**

Prikazat će se primjeri cista, tumora, pupilarnog bloka, plateau iris konfiguracije i plateau iris sindroma, iridokornealnih sindroma kao i uloge intumescentne leće u glaukomu zatvorenog kuta.

**Zaključak:**

UBM često ima presudnu ulogu u etiologiji i liječenju glaukoma zatvorenog kuta.

**Title:**

The role of ultrasound biomicroscopy in the evaluation of angle-closure glaucoma

**Authors:**

B. Kuzmanović Elabjer, M. Bušić, D. Miletić, A. Pleše, M. Bjeloš

**Institution:**

University Eye Department, University Hospital "Sveti Duh", Zagreb, Faculty of Dental Medicine and Health Osijek, Josip Juraj Strossmayer University of Osijek, Faculty of Medicine, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia

**Aim:**

To present the role of ultrasound biomicroscopy (UBM) in the evaluation of angle-closure glaucoma

**Patients and methods:**

UBM is the most useful method of investigation of the pathology of the iris and ciliary body. It can depict its insertion, shape, and relation to other ocular structures. Another major structure visualized by UBM is the lens. The examination provides important information regarding its configuration, position, and anteroposterior diameter. It allows the evaluation and measurement of the angle as well as a lens vault.

**Results:**

Examples of cysts, tumors, pupillary block, iris plateau configuration, iris plateau syndrome, iridocorneal syndromes as well as the role of the intumescent lens will be presented.

**Conclusion:**

The role of UBM is in lots of cases decisive in etiology and the treatment of angle-closure glaucoma.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA ULTRAZVUK / Ultrasound section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Biljana

**Ime i prezime / First and Last Name:-Last**

Kuzmanović Elabjer

**Naslov:**

Superficial keratectomy in the treatment of Salzmann nodular degeneration

**Autori:**

Tomislav Kuzman, Ivana Gabrić, Iva Bešlić, Sania Vidas, Ivan Škegro, Sanja Masnec, Miro Kalauz

**Ustanova:**

Klinika za očne bolesti Medicinskog fakulteta Sveučilišta u Zagrebu, KBC Zagreb

**Cilj:**

Salzmannova nodularna degeneracija (SND) je sporo progresivno stanje u kojem se iznad Bowma nova sloja rožnice formiraju sivo-bijeli do plavičasti noduli veličine 1-3 mm. SND je obično obostrana, a do danas nije opisana specifična uzročna etiologija, ali ponekad je prisutna i Chronova bolest.

**Bolesnici i metode:**

Pacijenti se obično javljaju s postupnim, bezbolnim gubitkom vida na blizinu i na daljinu. Prikazati ćemo 42-godišnju bolesnicu sa SND i Chronovom bolešću. Postoje bilateralni noduli na rožnici i pogoršanje vidne oštine tijekom zadnje 2-3 godine.

**Rezultati:**

Izvršili smo površinsku keratektomiju na oba oka i postignuto je poboljšanje vidne oštine s preoperativne BCVA 0,1 na postoperativno 1,0 na desnom oku, te s BCVA 0,6 na 0,9 na lijevom oku.

**Zaključak:**

Površinska keratektomija uspješno rezultira poboljšanjem vidne oštine u 90% slučajeva. Recidivi su vrlo česti, međutim, recidivi dovoljno značajni da utječu na vid mogu se pojaviti samo u 5-20% slučajeva. Ako nakon superficialne keratektomije postoji značajan haz u prednjoj stromi koja narušava vidnu oštinu moguće je dodatno izvršiti lasersku fototerapeutsku keratektomiju.

**Title:**

Superficial keratectomy for Salzmann Nodular Degeneration Treatment

**Authors:**

Tomislav Kuzman, Ivana Gabrić, Iva Bešlić, Sania Vidas, Ivan Škegro, Sanja Masnec, Miro Kalauz

**Institution:**

Department of Ophthalmology, School of medicine University of Zagreb

**Aim:**

Salzmann Nodular Degeneration (SND) is slowly progressive condition in which gray-white to bluish nodules measuring 1-3 mm are seen anterior to Bowman's layer, usually bilaterally. There has not been a specific causal etiology described to date, but sometimes Chron's disease is also present.

**Patients and methods:**

Patients usually present with gradual, painless loss of both near and distance vision. We will present Female 42 years old patient with SND and Chron's disease. There are bilateral corneal nodules and deterioration of visual acuity during past 2-3 years.

**Results:**

We performed superficial keratectomy on both eyes and visual acuity improvement was achieved from preoperative BCVA 0,1 to post operative 1,0 on right eye, and from BCVA 0,6 to 0,9 on left eye.

**Conclusion:**

Superficial keratectomy successfully results in improved visual acuity in 90% of cases. Recurrences are very common however, recurrences significant enough to impact vision may only occur in 5 - 20% of cases. If visually significant anterior stromal haze persists after superficial keratectomy, phototherapeutic keratectomy can be used as an adjunct therapy.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA KATARAKTU I REFRAKTIVNU KIRURGIJU / Cataract and Refractive surgery section

**Titula / Title:**

Prof.dr.sc.

Specijalist / Specialist

**Ime i prezime / First and Last Name:-First**

Tomislav

**Ime i prezime / First and Last Name:-Last**

Kuzman

**120. Gentian Bajraktari**

**Naslov:**

Visual functions outcome after idiopathic epiretinal membrane surgery

**Autori:**

Gentian Bajraktari, Tomislav Jukic

**Ustanova:**

KBC Zagreb, Ophthalmology Department

**Cilj:**

To evaluate the impact of different intraocular tamponades on visual functions after idiopathic epiretinal membrane (IEM) surgery with epiretinal membrane peeling.

**Bolesnici i metode:**

We prospectively enrolled 50 patients diagnosed with IEM who underwent pars plana vitrectomy (PPV). Patients were consecutively assigned to either the air tamponade (air) group (25 patients) or the balanced salt solutions (BSS) tamponade group (25 patients). The following data were collected before and after surgery and compared between two groups: best corrected visual acuity (BCVA), intraocular pressure (IOP), metamorphopsia, contrast sensitivity (CS), and central macular thickness (CMT).

**Rezultati:**

PPV was performed in 50 eyes. At baseline, there were no significant differences between the two groups. At 6 months postoperatively BCVA ( $p < 0.001$ ), CMT ( $p < 0.001$ ), CS ( $p < 0.001$ ), and metamorphopsia ( $p < 0.001$ ) improved significantly in comparison to baseline, without significant differences between the air tamponade and BSS groups.

**Zaključak:**

Removing IEM significantly improved visual functions. Despite improvements, our study showed no difference postoperatively whether air or BSS tamponade was used during surgery.

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**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA MREŽNICU / Retina section

**Titula / Title:**

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Bajraktari

## 121. Dobrila Karlica Utrobičić

### **Naslov:**

Je li produljena latencija vidnih evociranih potencijala patološki znak u djece s Downovim sindromom bez očnih abnormalnosti? Nerandomizirano kliničko ispitivanje koje uspoređuje djecu s Downovim sindromom i njihovu zdravu kontrolnu skupinu

### **Autori:**

Dobrila Karlica Utrobičić, Ivana Mudnić, Ivan Borjan, Hana Karlica

### **Ustanova:**

Klinika za očne bolesti KBC Split, privatna Poliklinika za očne bolesti Optima

### **Cilj:**

Cilj ove studije bio je procijeniti retino-kortikalnu funkciju u djece s DS-om koja nisu imala evidentne očne abnormalnosti osim blage refrakcijske pogreške; snimanjem elektrofiziološke aktivnosti primarnih vidnih područja.

### **Bolesnici i metode:**

Usporedili smo vrijednosti parametara Vidnih evociranih potencija testiranjem djece u dobi od 6 do 12 godina i kod kojih je, prema medicinskoj dokumentaciji, citogenetskim testiranjem potvrđena trisomija 21 (Down sindrom) (N 67) s zdravom kontrolnom skupinom odgovarajuće dobi (N = 167). Očni status sudionika procijenjen je u Dječjoj ambulanti Klinike za oftalmologiju KBC-a Split. Akomodacija je procijenjena dinamičkom retinoskopijom te mjerenjem monokularne i binokularne daljine i vida na blizinu, dok je refrakcijska greška određena retinoskopijom u cikloplegiji (1% tropikamid). Retinoskopija je učinjena sfero-sferičnom metodom na udaljenosti od 1 m, 60 minuta nakon lokalnog ukapavanja 1% Tropicami de kapi. Oštrina vida na daljinu i blizinu (sa i bez korekcije) mjerena je prvo binokularno, a zatim monokularno. Oštrina vida ispitivana je pomoću Snellenovih karata ili Pflügerovih karata (trumping e chard) kukica koje odgovaraju Snellenovim standardima. Dobivene rezultate smo statistički obradili i tabelarno prikazali.

### **Rezultati:**

U studiju su bila uključena sva djeca s DS-om registrirana u Splitsko-dalmatinskoj županiji koja su zadovoljila kriterij uključivanja bez očnih abnormalnosti i s refrakcijskom greškom između -

0,5 i 2,0 D, te njihove zdrave kontrolne skupine iste dobi (n=36 djece, N= 72 oka, za obje skupine, s istom dobi od 9±2 godine). Zabilježen je prolazni VEP i analizirani su valovi s pozitivnim vrhom kao odgovor na podražaj promjene uzorka. Izmjerena je latencija P100, definirana kao vrijeme od početka podražaja do glavnog pozitivnog vrha, te amplitude od vrha do vrha.

Distribucije interokularnih razlika između dvije ispitivane skupine uspoređene su Mann-Whitneyjevim U testom i Mosesovim testom ekstremne reakcije, dok su neovisni t-test i hi-kvadrat test korišteni za procjenu razlika u dobnoj i spolnoj distribuciji između ispitivanih skupina, odnosno . Analiza podataka provedena je u SPSS verziji 19.0 (IBM Corp., Armonk NY). Razina statističke značajnosti postavljena je na 0,05.

### **Zaključak:**

Naše je istraživanje jasno pokazalo da su vrijednosti latencije P100 vala bile znatno duže u djece s Downovim sindromom koja nisu imala nikakve očite očne abnormalnosti osim blage refrakcijske

e pogreške, dok su amplitude P100 vala bile usporedive s onima zdrave djece. Produljenje latencije bilo je obostrano sa sličnim odgodama na oba oka i bilo je toliko izraženo da je najkraća latencija u djece s DS-

om još uvijek bila 4 ms duža od najdulje latencije u kontrolnoj skupini koja je odgovarala dobi. Na laz pokazuje da djeca s DS-

om imaju atipičan VEP odgovor koji, barem djelomično, odražava atipičnu strukturu/funkciju njihovog neuralnog vidnog puta. Budući da su sva djeca u našoj studiji imala normalan vid (vidna oština  $\geq 0,8$ , bez očnih abnormalnosti), takva atipičnost očito ne utječe na njihovu vidnu oštrinu u mjeri koja je klinički relevantna. Klinički značaj našeg nalaza ilustriran je činjenicom da bi 25 ili 70% djece s DS-om u našoj studiji pogrešno dijagnosticiran s patološkim VEP-om, ako bi se primijenili uobičajeni kriteriji procjene VEP-

a (srednja latencija + 2,5 SD kontrole skupina koja VEP smatra patološkim) Budući da na produljenje latencije P100 najmanje utječu tehnički čimbenici i stupanj suradnje s pacijentom, smatra se najpouzdanijim pokazateljem klinički značajne abnormalnosti ,stoga treba biti posebno oprezan pri procjeni VEP-a u ovoj populaciji na temelju kriterija trajanja latencije .

**Title:**

Is the prolongation latency of visual evoked potentials a pathological sign in children with Down's syndrome without ocular abnormalities ? A non-randomised clinical trial comparing children with Down's syndrome and their healthy controls

**Authors:**

Dobrića Karlica Utrobičić,Ivana Mudnić, Ivan Borjan,Hana Karlica

**Institution:**

Department of Ophthalmology University Hospital Centre,privatna Poliklinika za očne bolesti Optim

**Aim:**

The aim of this study was to evaluate retinocortical function in children with DS who had no evident ocular abnormalities other than mild refractive error; by recording the electrophysiological activity of the primary visual areas.

**Patients and methods:**

We compared the values of Visual evoked potential parameters by testing children aged 6 to 12 years and in whom, according to medical records, trisomy 21 (Down syndrome) was confirmed by cytogenetic testing (N 67) with a healthy control group of the corresponding age (N = 167). The eye status of the participants was assessed in the Children's Outpatient Clinic of the KBC Split Ophthalmology Clinic. Accommodation was assessed by dynamic retinoscopy and measurement of monocular and binocular distance and near vision, while refractive error was determined by retinoscopy in cycloplegia (1% tropicamide). Retinoscopy was performed using the spherospherical method at a distance of 1 m, 60 minutes after local instillation of 1% Tropicamide drops . Distance and near vision acuity (with and without correction) was measured first binocularly and then monocularly. Visual acuity was tested using Snellen charts or Pflüger charts (trumbling e c hard) of hooks that correspond to Snellen standards. The obtained results were statistically processed and tabulated.

**Results:**

The study included all children with DS registered in the Split-Dalmatia County who met the inclusion criteria without eye abnormalities and with a refractive error between -



0.5 and 2.0 D, and their healthy control groups of the same age (n=36 children, N= 72 eyes, for both groups, with the same age of  $9\pm 2$  years). A transient VEP was recorded and positive-spiking waves in response to the pattern change stimulus were analyzed. The P100 latency was measured, defined as the time from the start of the stimulus to the main positive peak, and the peak-to-peak amplitude.

The distributions of interocular differences between the two examined groups were compared using the Mann-Whitney U test and the Moses extreme reaction test, while the independent t-test and chi-

square test were used to assess the differences in age and gender distribution between the examined groups, respectively. Data analysis was performed in SPSS version 19.0 (IBM Corp., Armonk NY). The level of statistical significance was set at 0.05.

**Conclusion:**

Our study clearly showed that peak P100 latencies were significantly longer in children with Down syndrome who did not have any evident ocular abnormalities beyond mild refractive error, whereas P100 amplitudes were comparable to those of healthy children. The prolongation of latencies was bilateral with similar delays on both eyes and was so pronounced that the shortest latency in children with DS was still 4 ms longer than the longest latency in age-matching controls. The finding demonstrates that children with DS do have atypical VEP response which, at least in part, reflects atypical structure/function of their neural visual pathway. Since all the children in our study had normal vision (visual acuity of  $\geq 0.8$ , no ocular abnormalities), such atypicality evidently doesn't affect their visual acuity to an extent which is clinically relevant. The clinical significance of our finding is illustrated by the fact that 25 or 70% of the children with DS in our study would have been misdiagnosed with pathological VEP, if one applied the common criteria of VEP assessment (mean latency + 2.5 SD of the control group to consider a VEP pathological) Since P100 latency prolongation is least affected by technical factors and degree of patient cooperation, it is considered the most reliable indicator of clinically significant abnormality so a special caution should be taken when assessing VEP in this particular population based on latency duration criteria.

**Kongres / Congresse:**

22. Kongres HOOD-a

**Abstract category / Sažetak prijavljujem u:**

SEKCIJU ZA PEDIJATRIJSKU OFTALMOLOGIJU I STRABIZAM / Pediatric Ophthalmology and Strabismus section

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Karlica Utrobičić