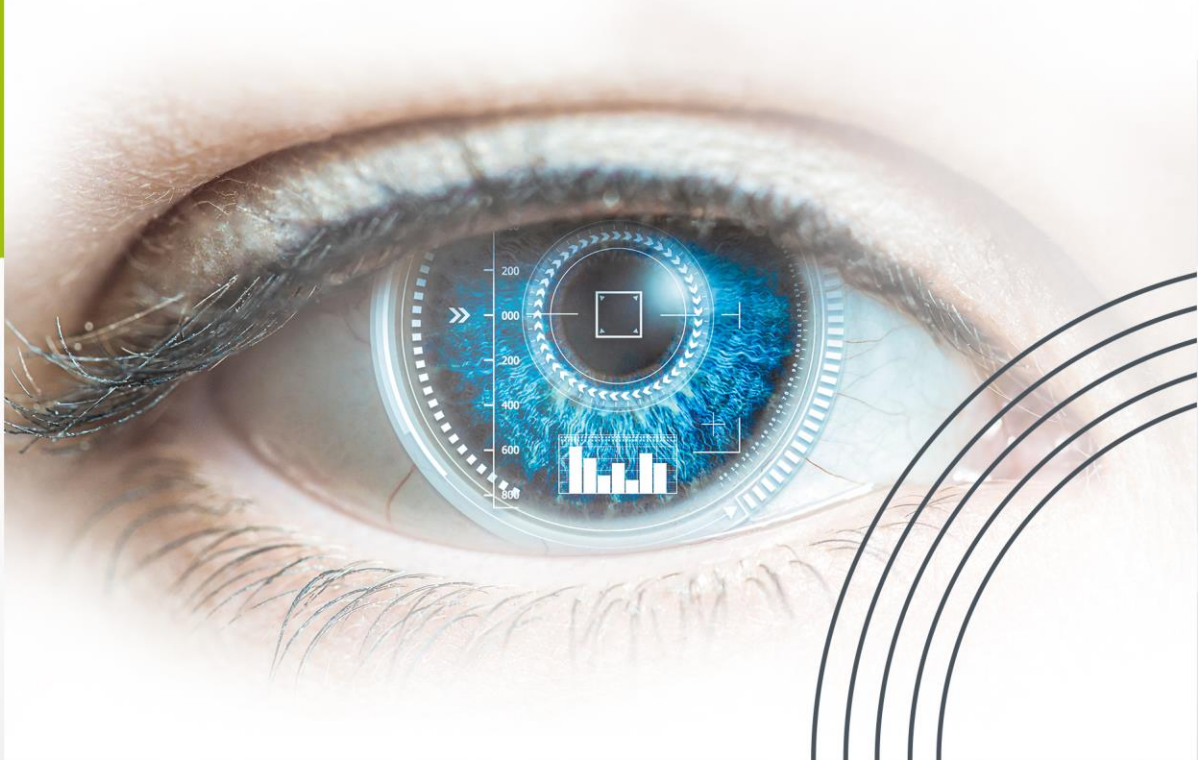




**23rd RESEARCH
DAYS**

Postgraduate Program in
Ophthalmology & Visual Sciences

DECEMBER 09 - 10, 2021



Organization



Sponsor



LATINO FARMA





The meeting **Research Days | UNIFESP-EPM** is held annually since 1999 and aims to stimulate and improve scientific production at the **Department of Ophthalmology & Visual Sciences | Paulista School of Medicine | Federal University of Sao Paulo - UNIFESP**. **Research Days** includes presentation of papers, fast papers and posters by residents, fellows and postgraduate students enrolled in the Postgraduate Studies Program in Ophthalmology and Visual Sciences. Papers and posters are presented in English and active discussion with the faculty is prioritized. The scientific studies at each educational level (resident, fellow, and postgraduate student) are judged and the best in each category receive an award.

An active participation of the faculty as discussants and the participation of well-known investigators in the scientific program are encouraged. Registration is free and open to Postgraduate programs in Brazil and Latin America. We consider the presentations of our team of students at the **Research Days** as a first step to preparing them to participate in and interact with colleagues at international meetings.

The **23rd Research Days | UNIFESP-EPM** will be held in São Paulo from December 09 to 10, 2021. Please visit our homepage <http://www.ofthalmounifesp.com.br/pg> for the complete Scientific Program and additional information

PROGRAM AT A GLANCE

December 09, 2021 – Thursday

8:10-8:20 AM	OPENING REMARKS	Ivan Maynard Tavares
8:20-8:30 AM	POSTGRADUATE PROGRAM	Augusto Paranhos Junior
8:30-8:35 AM	PROGRAM HEADLINES	
8:40-9:40 AM	PAPER PRESENTATION - SESSION 1	INFECTIO Moderators: Denise de Freitas, Ana Luisa Hofling Lima, Rubens Belfort Jr and Cristina Muccioli
9:40-10:10 AM	INVITED LECTURE	Leo Anthony Celi, MD, PhD
10:10-10:30 AM	COFFEE BREAK	
10:30-11:25 AM	PAPER PRESENTATION - SESSION 2	IMAGING Moderators: Ivan Maynard Tavares, Tiago dos Santos Prata, Augusto Paranhos Jr., Michel Eid Farah, Tammy Hentona Osaki
11:30-11:45 am	Allergan Lecture	
11:45-12:00 am	POSTER SESSION 1	
12:00- 13:00 PM	PAPER PRESENTATION - SESSION 3	IMAGING Moderators Carolina Pelegrinni, Renato Ambrosio Jr., Wallace Chamon Alves de Siqueira and Adriana Berezovsky

December 10, 2021 – Friday

8:10 – 9:00 AM	PAPER PRESENTATION - SESSION 4	IMAGING Moderators: Jose Alvaro Pereira Gomes, Solange Rios Salomão, Norma Allemann, Mauro Silveira de Queiroz Campos and Walton Nosé
9:00 – 10:20 AM	PAPER PRESENTATION - SESSION 5	INFLAMMATION Moderators: Luciene Barbosa Sousa, Paulo Schor and Mauricio Maia
10:20-10:50 AM	POSTER SESSION 2	
10:50-11:30 AM	PAPER PRESENTATION - SESSION 6	INFLAMMATION, CELL THERAPY AND ANGIOGENESIS Moderators: Juliana Maria Ferraz Sallum, Caio Vinicius Saito Regatieri and Lauro Augusto Oliveira
11:45-12:00PM	Novartis Lecture	
12:00 – 12:30	POSTER SESSION 3	
12:30 – 13:00 PM	FINAL REMARKS AND AWARDS ANNOUNCEMENT	Augusto Paranhos Jr, Ivan Maynard Tavares, Luiz Alberto Soares, Mauricio Maia,

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Information
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Rubens Belfort Jr.
Solange Rios Salomão
Tammy Hentona Osaki
Tiago dos Santos Prata
Wallace Chamon Alves de Siqueira
Walton Nosé

Invited Speakers

Leo Anthony Celi, MD, PhD

SCIENTIFIC PROGRAM

December 09, 2021 - Thursday

8:10-8:20 AM	OPENING REMARKS	Ivan Maynard Tavares	
8:20-8:30 AM	POSTGRADUATE PROGRAM	Augusto Paranhos Junior	
8:30-8:35 AM	PROGRAM HEADLINES		
SESSION 1			
PAPER PRESENTATION			
INFECTION			
8:40-9:40 AM	Moderators: Denise de Freitas, Ana Luisa Hofling Lima, Rubens Belfort Jr and Cristina Muccioli		
8:40-8:47 AM	Different treatment approaches in anti-vegf related endophthalmitis in a tertiary hospital in Brazil: a 8-year retrospective case series	Vinicius Campos Bergamo	PG1 DO
8:50-8:57 AM	Retinal changes in congenital Zika syndrome: 1-year follow-up	Thayze Martins Texeira	PG1 DO
9:00-9:07 AM	Strabismus surgery in children with congenital Zika syndrome: long-term visual and developmental outcomes	Raine C. Borba F. Arruda	PG1 DO
9:10-9:17 AM	Cases of Acanthamoeba endophthalmitis in Brazil and worldwide	Luciana Lopes Rocha	PG1 DO
9:20-9:27 AM	COVID-19 Retinal Findings in Patients Admitted to Intensive Care Units and Wards	Paula Marques Marinho	PG1 DO
9:30-9:33 AM	SARS-CoV-2 and the ocular surface: test accuracy and viral load	Dalton De Freitas Santoro	PG1 DO
9:35-9:40 AM	Ocular findings regardless of visual acuity status in adults 45 years and older: the Brazilian Amazon Region Eye Survey	Arthur Gustavo Fernandes	Post Doc
9:40-10:10 AM	COFFEE BREAK		
10:10-10:30 AM	INVITED LECTURE		
	Artificial intelligence in healthcare	Leo Anthony Celi, MD, PhD	
SESSION 2			
PAPER PRESENTATION			
10:30-11:25 AM	IMAGING		
	Moderators: Ivan Maynard Tavares, Tiago dos Santos Prata, Augusto Paranhos Jr., Michel Eid Farah and Norma Allemann		
10:30-10:37 AM	Long-term surgical outcomes of pars plana vitrectomy and four-point Gore-Tex sutured scleral fixation of AKREOS AO60 intraocular lens in complex cases: a large multicenter case series	Denise Pardini Marinho	PG1 DO
10:40-10:47 AM	Comparative Analysis of Functional and Structural Decline in Retinitis Pigmentosa	Jose Ronaldo Lima de Carvalho Jr	PG1 DO
10:50-10:57 AM	Retina and Artificial Intelligence: present or future? A pursuit for fairness	Luis Filipe Nakayama	PG1 DO
11:00-11:03 AM	Measurements of optic nerve head hemoglobin levels in glaucoma: a structural and functional correlation study	Janaina Andrade Guimarães Rocha	PG1 DO
11:05-11:08 AM	Structural Changes in the Optic Disc and Macula Detected by Swept-Source Optical Coherence Tomography After Surgical Intraocular Pressure Reduction in Patients with Open-Angle Glaucoma	Roberto Murad Vessani	POST-DOC

11:10-11:13 AM	Interocular retinal nerve fiber layer thickness and parvocellular pathway integrity in parkinson disease	Eric Pinheiro Andrade	POST-DOC
11:15-11:18 AM	Intravitreal dexamethasone implant (Ozurdex®) serial evaluation with ocular ultrasound.	Gabriela Assumpção Brito Pereira Pellegrini	PG1 DO
11:20-11:23 AM	Correlation of optical tomographic patterns to histopathology of ocular surface lesions	Camile Fagundes Freitas de Tonin	PG1 DO
11:25-11:30 AM	Ocular Surface Specimen Handling by Ophthalmic Surgeons - Enabling Quality in Pathology Evaluation	Melina Correia Morales	PG1 DO
11:30-11:35 AM	Foveal avascular zone evaluation in glaucoma patients	Gustavo Coelho Caiado	PG1 DO

11:30-11:45 AM Allergan Lecture

11:45-12:00 AM POSTER SESSION 1

SESSION 3 PAPER PRESENTATION

12:00- 13:00 PM

IMAGING

Moderators: Carolina Pelegrini Barbosa Gracitelli, Renato Ambrosio Jr, Wallace Chamon Alves de Siqueira and Adriana Berezovsky

12:00 -12:07 PM	Relational Tissue Altered (RTA): evaluating structural impact of laser refractive surgery	Aydano Pamponet Machado	PG1 DO
12:10 - 12:17 PM	Evaluation of high-order aberrations in regular corneas and their relationship with epithelial remodeling in patients submitted to topography-guided femtolasik (CONTOURA®) in one eye and q-value customized (CUSTOM-Q®) on the contralateral eye.	Adriana Falcão Lyra	PG1 DO
12:20 - 12:27 PM	Photopic negative response in affected and asymptomatic members from Brazilian families with Leber`s Hereditary Optic Neuropathy	Gabriel Izan Santos Botelho	PG1 DO
12:30 - 12:37 PM	Oral riboflavin and sunlight exposure in the treatment of keratoconus in patients with thin cornea	Edilana Sá Ribeiro Campelo	PG1 DO
12:40 - 12:47 PM	Outcomes of a 320-degree intrastromal corneal ring segment implantation for keratoconus: Results of a 6-month follow-up	Guilherme Andrade do Nascimento Rocha	PG1 DO

SCIENTIFIC PROGRAM

December 10, 2021 - Friday

SESSION 4 PAPER PRESENTATION

8:10 – 9:00 AM IMAGING		Moderators: Jose Alvaro Pereira Gomes, Solange Rios Salomão, Tammy Hentona Osaki and Walton Nose	
8:10-8:17 AM	Eyelid kinematic analysis prior and after treatment in blepharospasm and hemifacial spasm	Gustavo Rosa Gameiro	PG1 DO
8:20-8:27 AM	Anterior and Total Corneal Astigmatism Differences in Normal and Keratoconic Corneas	Felipe Marques de Carvalho Taguchi	PG1 DO
8:30-8:37 AM	Immediate tomographic alterations after phacoemulsification cataract surgery	Jorge Selem Haddad	PG1 DO
8:40-8:47 AM	Risk Factors for Post-LASIK Ectasia: A Cohort from Egypt	Louise Pellegrino Gomes Esporcatte	PG1 DO
8:50-9:00 AM	Bowman`s topography for improved detection of early ectasia	Marcella Quaresma Salomão	PG1 DO

SESSION 5 PAPER PRESENTATION

9:00 – 10:20 AM INFLAMMATION		Moderators: Luciene Barbosa de Sousa, Paulo Schor and Mauricio Maia	
9:00-9:07 AM	Analysis of intraoperative pachymetry behavior using riboflavin with hydroxypropyl methylcellulose in corneal crosslinking	Fabio Matsumoto Kenji	PG1 DO
9:10-9:17 AM	Ocular microinfusion of pigment in eye bank corneas with tattoo machine	Michele Lima Farah	PG1 DO
9:20-9:27 AM	Intense Pulsed Light in the Treatment of Dry Eye and Meibomian Gland Dysfunction in Patients with Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis	Rafael Jorge Alves de Alcântara	PG1 DO
9:30-9:37 AM	Characterization of inflammatory mediators in the tear film, conjunctival epithelium and corneal epithelium in keratoconus patients.	Albert Wilson Santos Machado Silva	PG1 DO
9:40-9:47 AM	Mathematical Model for Degradation and Drug Release from an Intravitreal Biodegradable Implant	Mariana Batista Gonçalves	PG1 DO
9:50-9:57 AM	Macromolecular changes in the extracellular matrix of human corneas with keratoconus and after crosslinking with açai (Euterpe oleracea) extract: an ex vivo and in vitro study	Murilo Bertazzo Peres	PG1 DO
10:00-10:07 AM	Regional inequalities in prevalence of severe visual impairment and blindness in older brazilian adults	Marcela Colussi Cypel	POST-DOC
10:10-10:13 AM	Quantitative assessment of particles release with siliconized and silicone oil-free syringes using microflow imaging microscopy	Lydiane Lumack do Monte Agra	PG1 DO
10:15-10:20 AM	Panel of tear and serum biomarkers in ophthalmologic disorders	Renato Galão Leca	PG1 DO

10:20-10:50 AM POSTER SESSION 2

SESSION 6 PAPER PRESENTATION

10:50-11:30 AM INFLAMMATION, CELL THERAPY AND ANGIOGENESIS		Moderators: Juliana Maria Ferraz Sallum, Caio Vinicius Saito Regatieri and Lauro Augusto de Oliveira	
10:50-10:57 AM	Intravitreal Injections of Ziv-aflibercept in Diabetic Macular Edema with no Previous anti-VEGF therapy: A Double-Masked Randomized Clinical Trial.	Nadyr Antoni Damasceno	POST-DOC

11:00-11:07 AM	Development of a new antiangiogenic drug derived from chemically modified heparinomimetics	Alex Treiger Gruppenmacher	PG1 DO
11:10-11:17 AM	Intra-Arterial Chemotherapy for the treatment of retinoblastoma eyes: review of 586 surgeries	Luiz Fernando Teixeira	PG1 DO
11:20-11:27 AM	Characterizing ophthalmic findings in patients with Alagille syndrome	Mariana Matioli Palma	PG1 DO
11:30-11:33 AM	CERKL related inherited retinal dystrophies in a Brazilian population	Erika Sayuri Yasaki	PG1 DO
11:35-11:40 AM	Serum vitamin D levels in patients with autoimmune uveitis and its possible relationship with disease severity	Karine Koller	PG1 DO
11.40-11:45 AM	Ocular Inflammation following COVID-19 Vaccination. Is there any reasonable explanation?	Carlos Eduardo de Souza	PG1 DO
11:45-12:00PM	Novartis Lecture		
12:00 – 12:30	POSTER SESSION 3		
12:30 – 13:00 PM	FINAL REMARKS AND AWARDS ANNOUNCEMENT		
	Augusto Paranhos Jr, Ivan Maynard Tavares, Luiz Alberto Soares and Mauricio Maia		

POSTERS

December 09, 2020 - Thursday

11:30 – 12:00 AM

POSTER - SESSION 1

ANGIOGENESIS, CELL THERAPY and IMAGING

Chronic Myeloid Leukemia Presenting as Neovascular Glaucoma and Multiple Retinal White Centered Hemorrhages	Carolina Ferreira Huang	R1
Efficacy of new anti-angiogenic drugs derived from heparinomimetics for neovascularization of choroid in animal model	Diego Lisboa Araujo	Fellow
Comparison of the use of analgesic drugs in panretinal photocoagulation on patients with diabetic retinopathy	Guilherme Havar Bufarah	R3
Evaluation of Retinopathy of Prematurity Treatment in a Tertiary Care Service in Sao Paulo.	Klaus Anton Tyrrasch	R2
Pain control during panretinal photocoagulation for diabetic retinopathy	Lucas Denadai	Fellow
Surgical management of diabetic retinopathy complications: an overview in a public Hospital in São Paulo	Luciana Arrais	Fellow
Effects of phosphodiesterase type 5 inhibitors on choroid and ocular vasculature: a literature review	Murilo Ububata Polizelli	Fellow
Retinopathy of Prematurity at Hospital São Paulo: a Epidemiological Evaluation of the Maternal Profile.	Tulio Loyola Figueiredo	R2
Nasal retina arteriolar micro-occlusions related to factor v leiden mutation: a case report	Vinicius Oliveira Pesquero	R1
Prospection of new anti-angiogenic drugs based on chemically modified heparins	Vinicius Ferreira Kniggendorf	PG1
Evaluation of the effects of crosslinking thin corneas on the corneal endothelium	Andressa Castelo Branco Araújo Bernal Franco	R4
Development of a prime editing strategy to treat mutations in the Crumbs homologue-1 (CRB1) gene	Bruna Lopes da Costa	PG0
Ocular and Neurological Findings in a cohort of Brazilian patients with Spinocerebellar Ataxias.	Bruna Ferraço Marinelli	PG1
Liquid biopsy for uveal melanoma patients: New Tool for Melanoma therapy and follow-up.	Carmen Luz Pessuti	PG1
Evaluation of adherence to topical chemotherapy treatment of ocular surface squamous neoplasms	Mateus Inácio Lemes Resende	Fellow
Efficacy and safety of bovine L-hydro pericardium on primary pterygium treatment.	Mirella Millena Carmo De Andrade	R2
Novel Mutation in CRYBB3 Causing Pediatric Cataract and Microphthalmia	Olivia Araujo Zin	PG0
Diagnostic accuracy of detecting Diabetic Retinopathy by using DART an artificial intelligence screening tool: Validation study	Adriana de Oliveira Lima Gois	PG1
Utility Index and Vision-Related Quality Of Life in Patients Awaiting Ophthalmological Care	Aline Lutz de Araujo	PG1
Corneal transplantation: evolving trends and the impact of the COVID-19 pandemic	Aline Silveira Moriyama	PG1
Meibomian gland dysfunction in patients with xeroderma pigmentosum: case series report.	Allexya Affonso Antunes Marcos	PG1
Retinal nerve fiber and ganglion cell retinal layer changes on optical coherence tomography after ripe treatment for tuberculosis	Brunella Maria Pavan Taffner	PG1
Scleral Contact Lenses in Healthy Eyes: Could we improve visual acting? A Pilot Study.	Cristina Cagliari	PG0
Scleral buckle in a university referral center	Dante Akira Kondo Kuroiwa	Fellow
Artificial Intelligence Mapping of Structure to Function in Glaucoma	Eduardo Bicalho Mariottoni	PG1

Time as a determining function in the indication and evolution of eye surgery:
lasik evaluation for reduction of hypermetropia and induction of myopia as a
treatment for presbyopia

Ermano de Melo Alves

PG1

POSTERS

December 10, 2020 - Friday

10:20-10:50 AM POSTER - SESSION 2

IMAGING and INFECTION

Meibomian Health Score: A simple grading system for isotretinoin induced meibography alterations	Fabio Mendonça Xavier Andrade	PG1
Subfoveal choroidal thickness in pediatric patients with inflammatory bowel disease	Franklin Kuraoka Oda	R3
Visual pathway function assessed by electrophysiology in Fabry's disease: a case report	Glaiyccielli Assis	Fellow
Self-sealing ocular trauma with car fragment: a case report.	Guilherme Niciunovas	R1
Detection of diabetic macular edema and prediction of OCT measures from color fundus photographs using deep learning	Helen Nazareth Veloso dos Santos	PG1
A comparison of vascular parameters and endothelin 1 measurements between patients with low and high-tension optic disc hemorrhages	Izabela Negrao Frota de Almeida	PG1
Evaluation of keratoconus detection from elevation, topography and pachymetry raw data using machine learning	José Arthur Pinto Milhomens	R4
Splint Study: Pneumatic retinopexy before vitrectomy for macula off retinal detachment	Julia de Lima Farah	PG0
Quality of life in patients enucleated due to uveal melanoma.	Lídia Guedes Bezerra	Fellow
Automated machine learning model for fundus image classification by health-care professionals with no coding experience	Lucas Zago Ribeiro	PG0
Use of surgical videos on social media among retina surgeons: results of a vitreoretinal specialist survey	Luiz Filipe Adami Lucatto	PG1
Eye Tracker Reading Patterns in Glaucoma Patients versus Controls Patients	Mariana Chiba Ikeda	R3
Effect of chronic cocaine use on fine motor coordination tested during ophthalmic vitreoretinal simulated performance	Marina Roizenblatt	PG1
Ocular Metastases Profile in a Tertiary Hospital in Sao Paulo	Matheus Senna Pereira Ogata	Fellow
Changes in vision-related quality of life in individuals with symmetrical tomography keratoconus submitted to intrastromal corneal ring implantation.	Pablo Felipe Rodrigues	PG1
Evaluation of a patient with choroidal neovascularization through retinal multimodal imaging	Paulo Alberto Cervi Rosa	Fellow
Randomized Clinical Trial: Effects of Ramelteon Replacement on Sleep Quality of Patients with Advanced Glaucoma	Priscilla Fernandes Nogueira	PG0
Value-based Health Care Analysis in Ophthalmology	Raphael de Faria Shumann	PG1
Topography, tomography, and aberrometric evaluation of the cornea in the pediatric population	Renato Correa Souza de Oliveira	PG1
Profile of stricto sensu graduates in ophthalmology and Unifesp Visual Sciences	Rosangela Demetrio	PG1
Weight-adjusted caffeine and β -blocker exposure in novice versus senior retinal surgeons: a simulated performance study	Vitor Dias Gomes Barrios Marin	R1
Choroidal pseudomelanoma in the Ocular Oncology division from UNIFESP	Viviane Kely Costa Guedes	Fellow
Posterior segment hemorrhage in Chronic Myeloid Leukemia	Zaira Fernanda Martinho Nicolau	Fellow
Model-to-Data Approach for Deep Learning in Optical Coherence Tomography Intraretinal Fluid Segmentation	Luisa Salles de Moura Mendonça	PG1
Ten-year follow-up of corneal cross-linking and refractive surface ablation in patients with asymmetric corneal topography	Bernardo Kaplan Moscovici	PG0
To evaluate the application of the red reflex test in newborns treated at the Congenital Cataract Outpatient Clinic of the Federal University of São Paulo	Victoria Sakamoto	R3
Cylindricarpon fungal keratitis: first Brazilian case report	Frederico Do Carmo Novaes	R1

10:45-12:30 PM

POSTER - SESSION 3

INFLAMMATION and INFECTION

Neisseria keratoconjunctivitis: retrospective analysis of cases in tertiary care	Guilherme Macedo Souza	R2
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Evaluation of Rose Bengal Mediated Photodynamic Therapy for Inhibition of Bacterial, Rapid Growing Mycobacteria, Fungi and Parasites	Talita Trevezani Rocchetti	Post-doc
Candida species in fungal keratitis: drug susceptibility and molecular characterization	Fernanda Machado Bezerra Linhares	PG1
Recurrence of Ocular Surface Squamous Neoplasia (OSSN) after treatment in a tertiary hospital in Sao Paulo	Armando Coelho Brito	R3
Corneal culture in infectious keratitis. Do repeated cultures increase diagnostic yield? A Brazilian single-center analysis	Camila Kase	R4
Microbiological profile of culture-proven cases of exogenous endophthalmitis: a 10-year retrospective study	Aileen Miwa Tabuse	R2
Peripapillary vascular density, retinal nerve fiber layer and ganglion cell complex thicknesses in chronic chagas disease	Cristiana Lumack do Monte Agra	PG1
Evaluation of the adhesion of acanthamoeba spp. Trophozoites to scleral contact lenses	Larissa Fagundes Pinto	PG1
Neurophthalmological complications in SARS-COV-2 infection	João Victor Borges Gomes	R1
Cryptococcal choroiditis in a patient with recent AIDS diagnostic: case report	Maria Gabriela Dourado de Melo Gusmão	R1
Clinical findings of facial movement disorders in the 2 largest ophthalmological reference centers in Brazil	Flávio De Ávila Fowler	R2
Acute Corneal Hydrops Presenting in a Patient Previously Submitted to Crosslinking	Frederico Galvani Harckbart Carvalho	R1
Atypical malignant choroidal melanoma with bone-tissue metaplasia	Glauco Sérgio Avelino de Aquino	R1
Prevalence of Depression and Anxiety in Glaucoma Patients Submitted to Different Modalities of Treatment	Gustavo Albrecht Samico	R3
Activation of susac syndrome after covid vaccination (CorovaVac)	Jose Rodolfo Mariani Radaeli	R1
Penetrating ocular trauma in elderly patients: A Brazilian experience	Juan Fulgencio Welko Mendoza	R2
Evaluation of Eye Changes in Patients with Peripheral Facial Paralysis	Julia Harumi Iwakura	R3
Epidemiology of Pediatric Ocular Trauma	Júlia Jiquilin Carvalho	R3
Analysis of riboflavin concentration in aqueous humor and in human corneas submitted to corneal transplantation after oral absorption.	Ludmila Nascimento Pinto Silva	R4
Eyelid tumors: clinical features and management in a reference center.	Mariana Araujo Dias	R2
Analysis of the clinical features of patients undergoing surgical treatment for blepharoptosis in a Tertiary Hospital	Mariana Antunes Davi	R3
Mitochondrial and metabolic alterations in diabetic corneal epithelial cells	Natalia Mussi	PG1
Ocular inflammation after agitation of siliconized and oil-free syringes: a randomized, double blind, controlled clinical trial	Natasha Ferreira Santos da Cruz	PG1
Evaluation of macular vessel density using optical coherence tomography angiography in patients with diabetic macular edema treated with intravitreal biodegradable dexamethasone implants	Nelson Chamma Capelanes	PG0
Migration of retinal pigment epithelial cells simulating a congenital simple hamartoma of the retinal pigment epithelium: a case report	Olivia Pereira Kiappe	Fellow
Heavy silicone oil surgical approach and retrospective case series	Ramon Antunes Oliveira	Fellow

2021 Research Days Abstract Form

2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

(RE) RETINA AND VITREOUS

3. **THEME: (REQUIRED)**

Check one:

INFECTION

4. The signature of the First (Presenting) Author (REQUIRED) acting as the authorized agent for all authors, hereby certifies that any research reported was conducted in compliance with the Declaration of Helsinki and the "UNIFESP Ethical Committee"

Scientific Section Descriptions (two-letter code):

(BE) OCULAR BIOENGINEERING
(CO) CORNEA AND EXTERNAL DISEASE
(CA) CATARACT
(EF) ELECTROPHYSIOLOGY
(EP) EPIDEMIOLOGY
(EX) EXPERIMENTAL SURGERY
(GL) GLAUCOMA
(LA) LABORATORY
(LS) LACRIMAL SYSTEM
(LV) LOW VISION
(NO) NEURO-OPHTHALMOLOGY
(OR) ORBIT
(PL) OCULAR PLASTIC SURGERY
(PH) PHARMACOLOGY
(RE) RETINA AND VITREOUS
(RS) REFRACTIVE SURGERY
(RX) REFRACTION-CONTACT LENSES
(ST) STRABISMUS
(TR) TRAUMA
(TU) TUMORS AND PATHOLOGY
(UV) UVEITIS
(US) OCULAR ULTRASOUND

THEME:

Infecion
Inflammation
Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords

E-Poster

1. FIRST (PRESENTING) AUTHOR (REQUIRED):

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PG1

e-mail: viniciusbergamo.epm@gmail.com

CEP Number: 0060/2018

5. ABSTRACT (REQUIRED):

Title: DIFFERENT TREATMENT APPROACHES IN ANTI-VEGF RELATED ENDOPHTHALMITIS IN A TERTIARY HOSPITAL IN BRAZIL: A 8-YEAR RESTROSPECTIVE CASE SERIES

Author and Co-authors: BERGAMO VC, NAKAYAMA LF, MORAES NSB, YU MCZ, HÖFLING-LIMA AL, MAIA M

Purpose: To describe different treatment approaches in anti-VEGF related endophthalmitis in a tertiary hospital and its outcomes.

Methods: This retrospective study described different treatment approaches in patients with acute endophthalmitis after intravitreal anti-VEGF injections in a tertiary hospital in São Paulo, Brazil, from January 2011 to January 2019. Twenty-three eyes of 23 patients were enrolled and all eyes had laboratory work up with positive vitreous samples culture.

Results: Twenty-five eyes of 25 patients were enrolled with clinical signs that suggested development of acute endophthalmitis after intravitreal anti-VEGF injections from January 2011 to January 2019. Twenty-three eyes had positive vitreous culture and were included in the study. 23 of 25 eyes (92.0%) were culture positive. The predominant isolated organism was Staphylococci (82.6%) and Streptococci (13.0%) species and 1 eye had presented a rare Brevibacillus species. A total of 21.7% (5/23) of endophthalmitis cases were treated with only intravitreal vancomycin and ceftazidime, and 78.3% (18/23) of patients underwent 23-gauge PPV followed by administration of intravitreal antibiotics at end of surgery. 34.8% of patients (8/23) had BCVA during the infection of LP and underwent PPV (Worse Vision PPV Group), 43.4% of patients (10/23) had BCVA better than LP and underwent PPV (Better Vision PPV Group). Patients who had NLP visual acuity after 1 year, all of them had LP VA at the presentation of the infection. 50% (5/10) of eyes with LP VA during the endophthalmitis had worsened to NLP after 1 year. Among all groups, no significant difference in the BCVA was seen before the endophthalmitis developed (PPV Worse Vision vs. PPV Better Vision, $P = 0.301$, injection vs. PPV Worse Vision vs. PPV Better Vision, $P = 0.508$). The mean logMAR BCVA after 1 year of treatment in the injection group was 1.56 ± 0.86 and 1.60 ± 0.95 in the PPV group, a difference that did not reach significance ($P = 0.647$)

Conclusion: In conclusion, we exposed a case series with important long-term follow-up findings, that could suggest that an early approach at anti-VEGF related endophthalmitis could lead to better outcomes.

Keywords: endophthalmitis; retina; microbiology

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(RE) RETINA AND VITREOUS

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THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

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Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

1. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 4.507.542

5. ABSTRACT (REQUIRED):

Title: RETINAL CHANGES IN CONGENITAL ZIKA SYNDROME: 1-YEAR FOLLOW-UP

Author and Co-authors: Thayze T. Martins¹, Itamara Oliveira Aragao¹, Lucas Muniz Suassuna de Medeiros¹, Camilla Silva da Rocha¹, Camila V. Ventura¹, Mauricio Maia², Cristina Muccioli² ¹Altino Ventura Foundation ²Federal University of Sao Paulo

Purpose: To evaluate the progression of retinal changes related to Congenital Zika Syndrome (CZS) one year after initial diagnosis.

Methods: Single-center and retrospective study conducted at the Altino Ventura Foundation (FAV), Recife, Brazil, with children born with a confirmed or presumed diagnosis of CZS. The subjects underwent retinal imaging using a wide-angle digital fundus camera with a 130° lens (RetCam Shuttle V6.2.32.0, Clarity Medical Systems) for documentation of the fundus of the eye. The area of chorioretinal atrophy was measured by the ImageJ image analysis software (<http://imagej.nih.gov/ij/>) using digital photographs of initial diagnosis and one year later. All measures were analyzed by the same ophthalmologist. The pigmentation of the lesions was analyzed according to a comparison board created by the authors and the data was reviewed by a retinal specialist to evaluate reactivation or progression of ophthalmologic alterations. The research protocol was approved by the Institutional Review Board of the FAV and Unifesp (Process number: 4.507.542).

Results: Thirty-five eyes of 23 subjects were analyzed, of which 14 were female and 9 were male. The mean of the atrophy area was 9.20 (SD 8.43) mm² at the initial assessment and 9.01 (SD 7.57) mm² after one year, with a statistically significant difference ($p = 0.039$). Seven children had progression of the pigmentation of the lesion and in 23 children the area of the lesion increased.

Conclusion: Chorioretinal atrophy lesions changed one-year after initial diagnosis, both in size and appearance of the lesion. Further studies are needed to ensure the relationship of these findings with visual functions sequelae. Financial support: Altino Ventura Foundation.

Keywords: Zika virus; Microcephaly; Congenital anomalies; Ocular manifestations; Ocular abnormalities.

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Purpose
Methods
Results,
Conclusion
Keywords
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1. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 4.241.155

5. ABSTRACT (REQUIRED):

Title: Strabismus surgery in children with congenital Zika syndrome: long-term visual and developmental outcomes

Author and Co-authors: Raíne C. Borba F. de Arruda, Camila V. Ventura, Cláudia Marques, Lucélia Lima Nóbrega, Tatiane Freitas, Taciana Higino, Camilla Rocha, Juliana Sallum, Liana O. Ventura

Purpose: To assess the long-term visual and developmental outcomes of children with congenital Zika syndrome (CZS) who underwent surgery for infantile strabismus.

Methods: In this prospective case series, full ophthalmological examinations, including visual developmental milestones battery test with 18 parameters/child was assessed. The Bayley Scales of Infant Development (BSID-III) was used to assess developmental outcomes. A long-term follow-up period (more than 2-years after surgery) was conducted. Success surgery was defined as a final deviation of 10 prism diopters (PD). This study was approved by the Institutional Review Board of the Altino Ventura Foundation and Unifesp (protocol number 4.241.155).

Results: Five children (3 female, 2 male) with CZS who underwent strabismus surgery were enrolled in this study. All the children had cortical visual impairment. Successful strabismus surgery outcomes were maintained in all children at the final assessment. According to BSID-III's assessment, the corresponding mean age of children at the initial assessment was 4.7 months and the final 5.1 months. According to this development age, there was an improvement in the visual milestones in 5 parameters, stabilized in 27, and decreased in 11 at the final assessment. BSID-III scores were improved for motor (gross and fine) skills in 4/5 children and for cognitive in 3/5 cases.

Conclusion: Strabismus surgery achieved good long-term binocular alignment in children with CZS and seemed to have contributed positively to the visual milestone and motor and cognitive performance despite the presence of visual impairment and comorbidities conditions associated.

Keywords: Congenital Zika syndrome; strabismus; visual milestone; global development.

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Imaging
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FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

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5. **ABSTRACT (REQUIRED):**

Title: Cases of Acanthamoeba endophthalmitis in Brazil and worldwide

Author and Co-authors: Luciana Lopes Rocha Renata Cavalcanti Portela Boro Denise de Freitas

Purpose: To review Acanthamoeba endophthalmitis in Brazil and worldwide

Methods: A retrospective review of the first two cases of Acanthamoeba endophthalmitis in Brazil and a review in the literature

Results: In Brazil we had two cases of Acanthamoeba endophthalmitis (AE), 44-year woman and 43-year man. In the literature there are 21 cases of AE, 58% are men and mean of 50 years. In our cases the diagnosis was with 8 and 16 weeks, in the literature was a mean of 6 weeks. In our cases topical corticosteroids were used before treatment for Acanthamoeba keratitis. The same occurred in 62% in the literature. Our cases had therapeutic keratoplasty with 6 and 12 months after the onset of symptoms. In the literature the average was 4 months. Facectomy was did with keratoplasty in our cases. In 10 cases in the literature facectomy was associated or not with keratoplasty. The time to diagnosis of AE after keratoplasty was 4 and 12 months in our cases. In the literature the average was 4 months. In our cases one affected the posterior pole and the other only the anterior segment. In the literature 14 cases involved the posterior pole and 7 only anterior segment. The AE treatment time in our cases was 2 and 3 months. In the literature the average was 3 months. For treatment of AE one used intravitreal and subconjunctival voriconazole and the other used oral voriconazole with intracameral and subconjunctival biguanide. In the literature 10 cases used intracameral and oral voriconazole, and 7 cases with posterior pole involved used intravitreal voriconazole. After treatment one evolved well and the other had phthisis bulbi. In the literature 9 cases had eye evisceration and 1 phthisis bulbi

Conclusion: Despite the improvement in diagnostic methods, medications and surgical interventions, treatment for Acanthamoeba keratitis (AK) remains a challenge, and even rare, it can progress to endophthalmitis. Possible risk factors for an evolution to AE: Delay in the diagnosis for AK, which may favor its aggravation, Previous use of topical corticosteroids before starting the specific treatment for AK, Need for therapeutic keratoplasty, Carrying out a facectomy together with keratoplasty, and the delay in the diagnosis of AE after keratoplasty. The drug of choice for treatment is voriconazole. After treatment can evolved well or can have eye evisceration

Keywords: acanthamoeba; keratitis; keratoplasty; endophthalmitis;

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Results,
Conclusion
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3. **FIRST (PRESENTING) AUTHOR (REQUIRED):**

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5. **ABSTRACT (REQUIRED):**

Title: COVID-19 Retinal Findings in Patients Admitted to Intensive Care Units and Wards

Author and Co-authors: Paula M. Marinho, Alléxya A. A. Marcos, Ana M. C. Branco, André C. Romano, Victoria Sakamoto, Paulo R. A. Ferreira, Paulo Schor, Michel Farah, Richard B. Rosen, Heloisa Moraes Do Nascimento, Rubens Belfort Jr

Purpose: This study aimed to determine the frequency of ocular lesions detected by retina fundus exam in patients hospitalized with COVID 19.

Methods: This study was approved by the ethical institutional and national research committee (Research Ethics Committee of Federal University of Sao Paulo UNIFESP #307250 20.8.0000.5505). All patients or their representatives agreed to participate. A longitudinal, observational study was conducted from March 2020 to June 2020 to evaluate COVID-19 diagnosed patients (PCR positive nasal/oral swabs). Patients with images of low quality, preventing accurate interpretation of the findings or those confined to prone position were excluded, due to the inability to obtain good quality images. Those with a history of eye disease which could lead to misinterpretation of the data were also excluded. In both centers, the criteria for admission to the intensive care unit was the need for mechanical ventilation. Detailed demographic, medical history and concomitant events as well as a medication history, hospitalization details, and laboratory tests results were obtained. Following pupil dilation, color fundus photography was performed in both eyes.

Results: In total, 104 participants were included from 2 different centers: 60 (58%) from Hospital Municipal de Barueri intensive care unit (ICU) and 44 (42%) from wards for patients with COVID-19 infection at Hospital São Paulo. Of the patients included, 21.9% were found to have eye lesions, 3% had changes which reduced visual acuity. There were no signs of uveitis and/or vitreoretinal inflammation.

Conclusion: This study demonstrated rate of intraocular lesions in patients in both the ward or intensive care unit, regardless of medication use, including anticoagulant drugs, most of the cases without visual loss. From our experience, 3% patients, all from the ICU, had changes which impacted vision. Whether these events are related to the use of anticoagulants or are associated with COVID-19-related thromboembolic events, remains unclear. Funding: Vision Institute, CNPq, FINEP, CAPES [403482/2020-8].

Keywords: COVID19, Retina, Sars-CoV-2

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(CO) CORNEA AND EXTERNAL DISEASE

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THEME:

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Cell therapy

FORMAT:

Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
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Keywords
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4. **FIRST (PRESENTING) AUTHOR (REQUIRED):**

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CEP Number: 4.027.896

5. **ABSTRACT (REQUIRED):**

Title: SARS-CoV-2 and the ocular surface: test accuracy and viral load

Author and Co-authors: SANTORO, DF, HIRAI, FE, TOCHETTO, LB, CONTE, DD, BELLEI, NCJ, FREITAS, D, OLIVEIRA, LA

Purpose: To evaluate the presence of SARS-CoV-2 RNA in the ocular surface of individuals with clinical suspicion of Covid19. Also, to study the accuracy of different approaches of molecular testing on the ocular surface based on nasopharynx positivity status for COVID-19

Methods: This study included 152 individuals with suspected COVID-19 symptoms who underwent simultaneously to nasopharynx and two different tear film collection techniques for RT-qPCR. Tear collection was performed randomly: one eye with the filter strip of Schirmer test, and the contralateral eye with conjunctival swab/cytology in the inferior fornix. All individuals underwent slit lamp biomicroscopy looking for ocular surface clinical features. Time onset of clinical symptoms, demographic information and ocular clinical features were also analyzed.

Results: From 152 patients enrolled, 86 (56.6%) had COVID-19 diagnose confirmed by nasopharynx PCR. Both tear film collection techniques were able to detect viral particles: Schirmer test positive in 16.3% (14/86) and conjunctival swab/cytology in 17.4% (15/86) with no statistically significant differences. There were no positive ocular tests among those with negative nasopharynx PCR test. The overall agreement of ocular tests was 92.7%, and with their combination the sensitivity would increase to 23.2%. Mean cycle threshold (Ct) values in nasopharynx, Schirmer test and conjunctival swab/cytology were 18.2 ± 5.3 , 35.6 ± 1.4 and 36.4 ± 3.9 , respectively. The Ct values were statistically different between Schirmer test ($p=0.001$) and conjunctival swab/cytology ($p<0.001$) tests when compared to the nasopharynx

Conclusion: Our results demonstrated that both Schirmer test (16.3%) and conjunctival swab (17.4%) were similarly capable of detecting SARS-CoV-2 RNA in the ocular surface by real time RT-PCR analysis. They were also similarly accurate based on nasopharyngeal status and demonstrated indistinct sensitivity and specificity. Simultaneously specimen sampling and processing from nasopharynx, Schirmer and conjunctival swab/cytology tests demonstrated significantly lower viral load in both ocular surface approaches when compared to nasopharynx. Ocular manifestations detected by slit lamp biomicroscopy were not clearly associated with ocular real time RT-PCR positivity

Keywords: COVID19, SARS-CoV-2, ocular surface, conjunctiva, cornea, tear film, RT-PCR

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5. FIRST (PRESENTING) AUTHOR (REQUIRED):

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Post-doc

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CEP Number: 262.482

5. ABSTRACT (REQUIRED):

Title: Ocular findings regardless of visual acuity status in adults 45 years and older: the Brazilian Amazon Region Eye Survey

Author and Co-authors: Fernandes AG, Berezovsky A, Cypel M, Mitsuhiro MRKH, Watanabe SES, Ferraz NN, Sacai PY, Campos M, Belfort R, Salomao SR

Purpose: Recently, it has been recommended that population-based studies report not only frequencies of vision impairment and blindness but also any ocular abnormalities that might lead an individual to seek for eyecare services. The current study aimed to determine prevalence of ocular findings regardless of visual acuity (VA) status in older adults from the Brazilian Amazon Region.

Methods: Cluster sampling was used in randomly selecting subjects 45 years of age and older from urban and rural areas. Eligible subjects were enumerated through a door-to-door household survey and invited for a comprehensive eye exam. The presence of an ocular finding was considered positive when any abnormalities related to eyelids, anterior or posterior eye segments, increased intraocular pressure, or overall globe disturbances were noted. Ocular findings frequencies were determined for the overall sample regardless of VA status and also for individuals with 20/20 VA in both eyes. Presbyopia and refractive error were not counted.

Results: A total 2384 eligible persons were enumerated and 2041 (85.6%) examined. The prevalence of ocular disturbances in either eye was 87.0% [95% Confidence Interval (CI): 85.5-88.4%] and was associated with male gender [OR=1.63, 95%CI: 1.24-2.15, p=0.001], older age [OR=5.93, 95%CI: 2.75-8.50, p<0.001], lower education [OR=3.42, 95%CI: 1.56-7.51, p=0.002], and rural residence [OR=1.33, 95%CI: 1.00-1.78, p=0.052]. Overall, the main findings were pterygium, cataract, and pinguecula, occurring in 58.8%, 45.4% and 17.4%, respectively. When considering individuals with 20/20 VA in both eyes, the most frequently ocular findings were pterygium, pinguecula, and glaucoma cupping, occurring in 47.4%, 31.2% and 6.5%, respectively.

Conclusion: A high prevalence of ocular findings was observed in this population, mainly affecting conjunctiva and lens. It reinforces that different ocular conditions might not immediately decrease VA but indicate risk and/or discomfort symptoms and should be considered when planning public health ophthalmic services.

Keywords: Epidemiology, Ophthalmology, Pathology, Public health, Vision

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(RE) RETINA AND VITREOUS

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Purpose
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Results,
Conclusion
Keywords
E-Poster

6. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 32566820.

5. ABSTRACT (REQUIRED):

Title: Long-term surgical outcomes of pars plana vitrectomy and four-point Gore-Tex sutured scleral fixation of AKREOS AO60 intraocular lens in complex cases: a large multicenter case series

Author and Co-authors: Denise Pardini ? Luiz Filipe Lucatto ? Octaviano de Magalhães Junior ? André Maia ? Karim Hammamji ? Ali Dirani ? Flavio A. Rezende ? Bruna Trench Maia ? Eduardo Buchele Rodrigues ? Maurício Maia

Purpose: To determine long-term visual outcomes and surgical complications after pars plana vitrectomy (PPV) and four-point Gore-Tex sutured Akreos AO60 intraocular lens (IOL) scleral fixation in complex cases.

Methods: We retrospectively analyzed 101 eyes in this case series treated with PPV and secondary implantation of a hydrophilic acrylic IOL with Gore-Tex suturing between January 2015 and April 2020 in tertiary eye-care centers. The inclusion criteria were aphakia, no capsular support, at least one previous eye disease and/or a combined procedure with fixation surgery, and a minimal 1-year follow-up. The primary outcomes included visual acuity (VA), complication rates/types, and refraction.

Results: The surgical indications included aphakia without capsular support, ocular trauma, subluxated or opacified IOL, and subluxated crystalline lens. The 1-year postoperative VA improved from baseline to 20/60 (Snellen VA) in 57.4% ($p < 0.001$). Complications included hypotony (12.9%), ocular hypertension (12.9%), corneal edema (8.9%), cystoid macular edema (6.9%), vitreous hemorrhage (5.9%), and IOL opacification (1.0%). The 3- to 6-month postoperative refraction was ± 2.0 diopters in 61.8% (mean follow-up, 33.4 months, range, 12-62).

Conclusion: The long-term results demonstrated the procedural safety and effectiveness in complex cases with sustained visual improvements. The main complications happens in the first postoperative month and have spontaneous resolution within 2 weeks postoperatively.

Keywords: Four-point scleral fixation ? Gore-Tex ? Pars plana endoscopy ? Pars plana vitrectomy ? Secondary intraocular lens

2021 Research Days Abstract Form

2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

(RE) RETINA AND VITREOUS

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THEME:

Infeccion
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Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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7. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Jose Ronaldo Lima de Carvalho Jr**

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CEP Number: 51020000

5. ABSTRACT (REQUIRED):

Title: Comparative Analysis of Functional and Structural Decline in Retinitis Pigmentosa

Author and Co-authors: Jose Ronaldo Lima de Carvalho Jr, Thiago Cabral, Joonpyo Kim, Jin Kyun Oh, Sarah R Levi, Karen Sophia Park, Jimmy K Duong, Junhyung Park, Katherine Boudreault, Rubens Belfort Jr, Stephen H Tsang

Purpose: To evaluate the correlation between functional parameters of disease progression, as measured by 30 Hz flicker electroretinogram (ERG), and retinal imaging, as measured by short-wavelength autofluorescence (SW-AF) and spectral-domain optical coherence tomography (SD-OCT), in patients with retinitis pigmentosa (RP)

Methods: A retrospective analysis of 25 patients diagnosed clinically and genetically with RP was performed. Internationally Standardized 30 Hz flicker ERG recordings were acquired from two visits at least one year apart using Dawson Trick Litzkow (DTL) fiber or Burian-Allen (BA) corneal-contact lenses. SW-AF and SD-OCT imaging were performed after pupil dilation using Spectralis HRA+OCT (Heidelberg Engineering, Germany). Measurements of the vertical and horizontal diameters of the macular hyperautofluorescent ring on SW-AF as well as ellipsoid zone (EZ) line width on SD-OCT were used as parameters of disease progression. Comparative statistics revealed correlations between disease progression rates as measured by ERG implicit time and amplitude versus imaging parameters from SW-AF and SD-OCT. A comparison of ERG recordings from DTL versus BA electrodes was also performed

Results: The mean follow-up time was 2.81 ± 0.55 years. 30 Hz flicker ERG amplitude decreased by $2.2 \pm 0.8 \mu\text{V}/\text{year}$ ($P = 0.011$) while implicit times remained unchanged. On SD-OCT, the EZ line decreased by $204.1 \pm 34.7 \mu\text{m}/\text{year}$ ($P < 0.001$). Horizontal and vertical ring diameters of the hyperautofluorescent ring decreased by $161.9 \pm 25.6 \mu\text{m}/\text{year}$ and $146.9 \pm 34.6 \mu\text{m}/\text{year}$, respectively ($P < 0.001$ for both), on SW-AF. Correlation analysis between ERG results and imaging parameters revealed a significant correlation between disease progression rates as measured by 30 Hz flicker amplitude recorded with Burian-Allen electrodes and both the horizontal ring diameter ($P = 0.020$) and EZ line ($P = 0.044$)

Conclusion: Given the reliability of their measurements along with their correlation with the 30 Hz flicker ERG amplitude, SW-AF and SD-OCT, two readily available imaging techniques, may be used to (1) prognosticate disease progression in patients with RP and (2) serve as an outcome measurement in future clinical trials

Keywords: Retinitis pigmentosa, electroretinogram, ERG

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8. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Luis Filipe Nakayama**

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CEP Number: 4039060

5. ABSTRACT (REQUIRED):

Title: Retina and Artificial Intelligence: present or future? A pursuit for fairness

Author and Co-authors: Luis Filipe Nakayama, Lucas Zago Ribeiro, Caio Regatieri

Purpose: This article's objective is to compare characteristics is open-access retinal fundus photos datasets in the light of Artificial Intelligence algorithms application.

Methods: In this study, retinal color fundus dataset characteristics were compared. In inclusion criteria were considered open-access retinal datasets of color fundus retinal photos. In datasets with unavailable labels, Kaggle labels were considered. In this study, datasets with less than 500 images and unavailable images or labels were excluded. Information about patients, diabetic retinopathy classification, patient sex, age, social characteristics, ethnicity and, quality control was collected and compared in every dataset.

Results: The eyePACS, ODIR, APTOS, DR1 and 2, IDRiD, Jichi, ROD REP, MESSIDOR 2, and Tsukazaki were included with 130,259 patients assembled in total. The datasets represent the countries USA, China, India, Brazil, Japan, Netherland, and France. The ICDR classification is the most applied (104,556 patients - 80,27%). The sex of patients was described in two datasets (14,167 patients - 10,88%), age in three datasets (22,167 patients - 17,02%), quality control in one dataset (1748 patients - 1,34%), social aspects, and ethnicity was not included in labels of any dataset.

Conclusion: Artificial intelligence technology has the potential to revolutionize medical care with more intelligent, cost-effective, precise diagnoses and spread medical screening programs. In ophthalmology, the most advanced application is in Diabetic Retinopathy screening algorithms. Still, although many algorithms have been developed, problems have been faced in real-world applications, with variable performance, even in FDA-approved algorithms. Application in undeveloped countries remains a challenge. Algorithms have been trained and tested with a few ethnic populations. Open access retinal fundus color photographs are primarily concentrated in developed countries, with one hundred and seventy-two countries without available datasets and therefore no representation. Sex and age are available in a minority of open access retinal fundus datasets. Socioeconomic and ethnicity characteristics have not been considered in any ophthalmological dataset, creating a critical social bias in algorithms. Data is critical in Machine Learning algorithms development, and a critical milestone is about how representative a dataset needs to be to achieve fairness in Artificial intelligence applications.

Keywords: Artificial intelligence, Machine Learning, Retina

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9. **FIRST (PRESENTING) AUTHOR (REQUIRED):**

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CEP Number: 0073/2020

5. **ABSTRACT (REQUIRED):**

Title: MEASUREMENTS OF OPTIC NERVE HEAD HEMOGLOBIN LEVELS IN GLAUCOMA: A STRUCTURAL AND FUNCTIONAL CORRELATION STUDY

Author and Co-authors: Janaina Andrade Guimarães Rocha, Ana Luiza Bassoli Scoralick, Fábio Nishimura Kanadani, Augusto Paranhos Jr., Carolina Pelegrini Barbosa Gracitelli, Sérgio Henrique Teixeira
Advisor: Tiago dos Santos Prata

Purpose: To evaluate structural and functional correlations in glaucoma patients using conventional retinography to estimate optic nerve head hemoglobin (ONH Hb) measurements by automated colorimetric analysis.

Methods: Prospective enrollment of controls and glaucomatous patients. All participants were submitted to a visual field (VF) testing (standard automated perimetry, SAP), conventional retinographies and peripapillary retinal nerve fiber layer (pRNFL) assessment through spectral-domain optical coherence tomography (SD-OCT). The amount of ONH Hb was estimated by the software Laguna ONHe and the glaucoma discriminant function (GDF) index was determined. The correlations between GDF, average pRNFL thickness and VF mean deviation (VFMD) index values were investigated through scatter plots and regression analysis. Glaucoma group was divided in three subgroups according to VFMD values and a secondary analysis was performed to compare each structural and functional parameter between these different groups.

Results: Sixty-nine patients with glaucoma and fifty-four controls (one hundred ninety-six eyes) were enrolled. Statistically significant differences were found between glaucomatous and control eyes, in most of the parameters evaluated ($P < 0.001$). Comparison of each parameter, according to the three subgroups of disease stages, showed significant differences between each of the glaucomatous and control groups ($p < 0.001$). The greatest differences found in GDF values, between controls and glaucoma, occurred in patients with mild stage disease. A significant non-linear correlation was found between pRNFL thickness and VFMD ($R^2 = 0.598$, $p < 0.001$) and between GDF and VFMD values ($R^2 = 0.295$, $p < 0.001$). We found a linear correlation between GDF and pRNFL thickness values ($R^2 = 0.195$, $p < 0.001$).

Conclusion: Significant associations were found between ONH Hb values and both functional and structural damage in glaucoma. The GDF behavior along the different disease stages and the non-linear correlation we found suggest that, in the early glaucoma group, ONH Hb levels reduction may precede visual function alteration.

Keywords: glaucoma, optic nerve, hemoglobin

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Purpose
Methods
Results,
Conclusion
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10. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Roberto Murad Vessani**

Post-doc

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CEP Number: 1.813.753

5. ABSTRACT (REQUIRED):

Title: Structural Changes in the Optic Disc and Macula Detected by Swept-Source Optical Coherence Tomography After Surgical Intraocular Pressure Reduction in Patients with Open-Angle Glaucoma

Author and Co-authors: Roberto M Vessani , Thalyta Frota, Gabriella Shigetomi, Priscila Correa, Eduardo B Mariottoni, Ivan M Tavares

Purpose: To evaluate the magnitude of change in optic disc, peripapillary retinal nerve fiber layer (RNFL) and macular parameters measured by swept-source optical coherence tomography (SS-OCT) in glaucomatous eyes after filtration surgery, and to determine any possible relationship between these measurements and baseline factors.

Methods: This multicenter, prospective, consecutive observational study included patients with open-angle glaucoma who required glaucoma filtering surgery (surgical group, 29 eyes) and those with stable disease (control group, 25 eyes). Patients from the surgical group underwent measurement of optic disc, peripapillary retinal nerve fiber layer (RNFL) and macular parameters before and after surgery.

Results: In the surgical group, there was a significant increase in rim area and a significant decrease in the linear cup/disc ratio, vertical cup/disc ratio and cup volume 1 and 2 months postoperatively ($p < 0.05$). No significant change in the mean RNFL thickness and also sectorial measurements were observed from baseline to 1 and 2 months after surgery ($p > 0.05$). Furthermore, significant increases in macular parameters were observed until 2 months after surgery ($p < 0.05$). No significant changes were observed for all SS-OCT measurements in the control group. There was a significant correlation between the magnitude of the structural measurements change and the IOP reduction for two topographic parameters (rim area and linear cup-disc ratio) and macular average thickness 1 month and 2 months postoperatively.

Conclusion: In open-angle glaucoma patients submitted to surgical IOP reductions, improvements in topographic and macular OCT parameters measured by SS-OCT were observed for at least 2 months.

Keywords: filtering surgery, intraocular pressure, optic disc, macula, optical coherence tomography

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THEME:

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Imaging
Cell therapy

FORMAT:

Abstract should contain:

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Results,
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11. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 04023-062

5. ABSTRACT (REQUIRED):

Title: INTEROCULAR RETINAL NERVE FIBER LAYER THICKNESS AND PARVOCELLULAR PATHWAY INTEGRITY IN PARKINSON DISEASE

Author and Co-authors: ANDRADE EP, ENDO CM, KANAS PIF, MORIMOTO LN, MADEIRA DC, BOPPRE YT, KARA-JOSÉ AC, FERRAZ HB, SABA RA, TAVARES IM.

Purpose: Degeneration of Parkinson's disease in the retina involves changes in dopamine with thinning of the retinal nerve fiber layer. The aim of this study was to compare the differences in the thickness of the retinal nerve fiber layer between healthy subjects and patients with Parkinson's disease and to analyze the pavoocellular pathway integrity.

Methods: Healthy individuals and patients with Parkinson's disease were included in this prospective cross-sectional observational study. The patients were recruited, according to clinical criteria, from the Neurology Clinic at the Federal University of Sao Paulo and the Hospital do Servidor Público Estadual de São Paulo, Brazil. Healthy subjects were recruited from the General clinic and hospital staff. A comprehensive ophthalmic examination was performed previous to the retinal nerve fiber layer (RNFL) imaging with spectral-domain optical coherence tomography.

Results: A total of 51 healthy subjects and 28 patients with Parkinson's disease were included in this study. Patients group showed, in the right eye and left eye, respectively, a mean visual acuity of 0.10±0.15 logMAR and 0.10±0.14 logMAR, a mean RNFL thickness of 121±23µm and 123±21µm at superior quadrant, 125±25µm and 127±23µm at inferior quadrant, 71±15µm and 70±13µm at temporal quadrant, and 78±2µm and 77±13µm at nasal quadrant. The control group showed a mean RNFL thickness of 124±15µm at superior quadrant, 127±16µm at inferior quadrant, 74±12µm at temporal quadrant, and 79±13µm at nasal quadrant.

Conclusion: The study found no significant thinning of the RNFL thickness, in all quadrants, of patients with Parkinson's disease when compared to the control group. It also showed no asymmetry of retinal involvement between the eyes in Parkinson disease patients and a weak correlation between visual acuity and temporal RNFL thickness in both eyes.

Keywords: Neurodegenerative Diseases; Parkinson Disease; Retina; Retina Ganglion Cells; Tomography, Optical Coherence.

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12. FIRST (PRESENTING) AUTHOR (REQUIRED):
Name: **Gabriela Assumpção Brito Pereira Pellegrini**
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CEP Number: 0655/2018

5. ABSTRACT (REQUIRED):

Title: Intravitreal dexamethasone implant (Ozurdex®) serial evaluation with ocular ultrasound.

Author and Co-authors: Gabriela Assumpção Brito Pereira Pellegrini, Norma Allemann.

Purpose: To compare measurements and findings of dexamethasone intravitreal implants over time.

Methods: Eyes submitted to intravitreal Ozurdex implants were evaluated at day 1 after implantation and every 45 days until completing 6-months period using: B-scan ultrasonography (Aviso® and Compact Touch®, Quantel Medical) and wide-field fundus photography (California®, Optos). B-scan ultrasound parameters evaluated were position and dimensions of the implant.

Results: Twenty three eyes of twenty patients were included, 64% male. Major indication for treatment with Ozurdex® was diabetic macular edema (84%). Implant measurements varied over time: Length at Day 1 = 7.21+/-0.36mm and Final visit = 1.80+/- 0.72mm, Thickness at Day 1 = 0.78+/-0.06 and at Final visit = 0.40+/-0.14mm. Considering implant dimensions, change over time in length was more evident than in thickness. B-scan follow-up demonstrated fading of the implant's limits and lowering of the internal reflectivity. Most common location for the implants was inferior (82%). Fundus photography was able to demonstrate the implant in 79 % of the eyes evaluated.

Conclusion: Ongoing study showed progressive decrease in the implant measurements at follow-up particularly in length. Qualitative changes of fading and lowering of internal reflectivity were detected over time. Ozurdex® intravitreal implants changes observed over time can be related to drug release.

Keywords: Ocular ultrasonography, eye, intravitreal dexamethasone implant.

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(TU) TUMORS AND PATHOLOGY

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E-Poster

13. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Camile F Tonin**

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e-mail: camileftonin@uol.com.br

CEP Number: 0380/2019

5. ABSTRACT (REQUIRED):

Title: Correlation of optical tomographic patterns to histopathology of ocular surface lesions

Author and Co-authors: Tonin C, Forseto A, Allemann N.

Purpose: To correlate tomographic optical patterns obtained with anterior segment optical coherence tomography (AS-OCT) to histopathology after biopsy of ocular surface (OS) lesions, in order to establish optical diagnostic criteria that, associated with clinical evaluation, may allow increasing the preoperative diagnostic accuracy.

Methods: Patients selected at HOS with OS lesions after ophthalmologic exam including ectoscopy, optical biomicroscopy, photo-documentation, longitudinal and transverse scans (SD-OCT, Avanti RTVue, Optovue, cornea anterior module CAM-L), surgical planning, presumed diagnostic hypothesis, and the histopathology of the specimen. 21 patients included presented: nevus (6 eyes), squamous neoplasm (4 eyes), squamous cell carcinoma (2 eyes), epithelial epithelial hyperplasia (1 eye), seborrheic keratosis (1 eye), papilloma (1 eye), pyogenic granuloma (1 eye), melanoma (1 eye), pterygium (3 eyes), linfoma (1 eye).

Results: Partial analysis comparing tomographic patterns and histopathology allowed: a) identification of the involved layer of the cornea or conjunctiva (epithelial or sub-epithelial), b) correlation of the tomographic characteristics of the internal structure and histological architecture considering density, homogeneity and artifacts. Main OCT patterns: conjunctival neoplasia were epithelial thickening and hyper-reflectivity, in nevus were epithelial/sub-epithelial thickening, some of them with cystic areas, and in papilloma were homogeneous internal reflectivity similar to squamous neoplasia, a pathology from which it is difficult to differentiate. Melanoma and lymphoma have very different tomographic aspects, being melanoma a heterogeneous lesion that promotes intense posterior shading, unlike lymphoma, which presents itself as a lesion of medium reflectivity, homogeneous and well defined. Histologic analysis: Epithelial lesions: epithelial and compound nevus with the presence of proliferation of nevic cells without atypia, which may be associated with intervening cysts, squamous neoplasm, whose spectrum of abnormal growth of atypical squamous epithelial cells of the conjunctiva graded based on thickness of epithelial involvement (mild dysplasia to carcinoma in situ), well-differentiated squamous cell carcinoma, epithelial hyperplasia, papilloma and pyogenic granuloma. Sub-epithelial lesions: melanoma, pterygium and lymphoma.

Conclusion: A tomographic-histological correlation favors a preoperative diagnosis of ocular surface lesions using anterior segment tomography, postponing or even avoiding the need for incisional or exceptional biopsy. AS-OCT can be limited to artifacts inherent to internal structure, and atypical intra-lesion aspects may be indication for an excisional biopsy procedure.

Keywords: AS-OCT (anterior segment optical coherence tomography), ocular surface neoplasia.

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(TU) TUMORS AND PATHOLOGY
(UV) UVEITIS
(US) OCULAR ULTRASOUND

THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

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Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

14. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Melina Correia Morales**

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e-mail: melcmorales@hotmail.com

CEP Number: 0179/2020

5. ABSTRACT (REQUIRED):

Title: Ocular Surface Specimen Handling by Ophthalmic Surgeons - Enabling Quality in Pathology Evaluation

Author and Co-authors: Melina C Morales, Carolina P. B. Gracitelli, Mariana B B Dias, Karlos F C B Sancho, Arthur G Fernandes, Rubens N Belfort, Moacyr P Rigueiro, Norma Allemann

Purpose: To access optimal specimen handling at ocular surface biopsies in order to provide Pathology with adequate tissue presentation. Standard blank filter paper with sutures was compared to Eye Patho receptacle without sutures. Now a new group using Eye Patho is studied in order to establish which specimens should be sutured.

Methods: Cross sectional prospective study included initially 30 eyes of 29 patients with indication for ocular surface biopsy, divided into two groups: control group with routine preparation using filter paper and sutures, and Eye Patho group without sutures. Both groups were compared considering time spent in specimen handling by the surgeon, preservation status of the specimens and practicality in analyzing topography and margin orientation of the specimens by the pathologist. A third group that proposes sutures only in nodular or larger than 8mm flat specimens is under study, currently with 4 eyes enrolled.

Results: Both initial groups were paired for tumor location, clinical classification, type of biopsy and tumor size ($p > 0.05$ for all comparisons). The Eye Patho Group required shorter time in preparing the specimen compared to control group ($p < 0.05$). Forty percent of specimens got separated from the paper in Eye Patho group by the time it got to macroscopic analysis, but only 26.67% required additional information, either a drawing or written diagram, for the pathologist to identify location and margin orientation. In the control group, 100% of cases demanded further information (diagram/drawing). The third group, currently composed of 4 specimens: 3 with nodular sutured specimens and 1 flat multiple incisional biopsy, none of them loosened from the Eye Patho receptacle.

Conclusion: Time spent by the ophthalmic surgeon in the operating room for specimen handling was optimized and the process was more intuitive with Eye Patho not only for the pathologist but also for the surgeon. The only adverse event of nodular and extensive specimens loosening from the Eye Patho filter paper is expected to be solved by orientation of suturing these specific tumors, contemplated in a third undergoing group.

Keywords: Ocular; Pathology; Specimen; Handling; Surface; Biopsy; Tumor

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Imaging
Cell therapy

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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15. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Gustavo Coelho Caiado**

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e-mail: gustavocaiado@hotmail.com

CEP Number: 74120070

5. ABSTRACT (REQUIRED):

Title: Foveal avascular zone evaluation in glaucoma patients

Author and Co-authors: Gustavo Coelho Caiado, Carolina Pelegrini Barbosa Gracitelli, Sergio Henrique Teixeira, Tiago dos Santos Prata, Gilvan Vilarinho da Silva Filho, Augusto Paranhos Júnior.

Purpose: The aim of the study is to evaluate the correlation between of foveal avascular zone (FAZ) area, vascular density (VD) and ganglion cell complex (GCC) measurements with functional visual field parameters.

Methods: A Cross-sectional clinical study was carried-out at the Department of Ophthalmology and Visual Sciences of Federal University of São Paulo, in which consecutive patients with glaucoma were enrolled between April and October 2021. After inclusion, each patient underwent Octopus perimetry (M program) and OCT/OCT-A (Triton) in the same day. One masked grader performed three measurements of FAZ area. GCC thickness and FAZ central vascular density were automatically measured by OCT and OCT-A, respectively. Generalized estimating equation (GEE) were used to correlate Octopus mean deviation (MD) index, FAZ area, FAZ central vascular density, GCC thickness, Brusini's and Hodapp-Parrish-Anderson's glaucoma staging systems.

Results: Sixty-five eyes from 39 patients (62% women) were included. The mean age was 66.16 ± 7.57 years old. The mean MD, MS and sLV were 4.66 ± 5.66 dB, 23.85 ± 5.66 dB and 3.85 ± 2.26 dB, respectively. The mean FAZ area, central vascular density and GCC thickness were 413.79 ± 136.54 mm², $12.57 \pm 4.52\%$ and $55.33 \mu\text{m}$, respectively. Regarding the Hodapp classification, 19 eyes had an initial defect, 12 eyes a moderate defect, 34 eyes an advanced defect. Regarding the Brusini classification, 5 eyes were classified as stage 0, 5 eyes borderline stage, 10 eyes stage 1, 15 eyes stage 2, 14 eyes stage 3, 13 eyes 4, 5 eyes stage 5. MD was correlated with FAZ area ($p=0.007$), central vascular density ($p=0.00723$) and ganglion cell complex ($p=0.001$). FAZ area was correlated with Stage 5 of Brusini's glaucoma staging system ($p=0.000$). There were no correlations between FAZ area and Hodapp-Parrish-Anderson's classification.

Conclusion: Our findings suggest that FAZ correlates with the extent functional damage in glaucomatous eyes.

Keywords: Glaucoma, Ophthalmology, Visual Field Tests

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
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16. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Aydano Pamponet Machado**
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CEP Number: 2.568.770

5. ABSTRACT (REQUIRED):

Title: Relational Tissue Altered (RTA): evaluating structural impact of laser refractive surgery

Author and Co-authors: Aydano Machado, Marcella Salomão, Louise Esporcatte, Bernardo Lopes, Renato Ambrósio Jr.

Purpose: The objective of this work is to help the refractive surgeon by developing a predictive computational model to represent the impact of LVC on corneal structure. As well as to evaluate the result archived in comparison with residual stromal bed (RSB) and percent tissue altered (PTA), the two main usual measures related to surgical impact adopted in clinical practice.

Methods: In order to attain our main objective, we have chosen an artificial intelligence (AI) approach based on machine learning (ML) techniques to build a predictive model that represents the impact of corneal refractive surgery. The developing process was based on knowledge discovery in databases (KDD) practice. The data from 3278 eyes (1609 patients) stables after refractive surgery with minimum follow-up of 07 years were enrolled from Instituto de Olhos Renato Ambrósio, Rio de Janeiro, Brazil. This study also included a total of 105 eyes (66 patients) who have developed ectasia. Owing to the complex nature of ectasia as a complication of refractive surgery, the preoperative data of patients with post-LASIK ectasia were collected individually from several surgeons around the world.

Results: A Relational Tissue Altered (RTA) model was trained using ML algorithms and cross-validation techniques. The best model was acquired by neural networks considering corneal thickness, flap thickness, ablation depth, and age. The RTA using thickness point information had the highest performance, with an area under the ROC curve (AUC) of 0.929. Followed by RTA using central corneal thickness with 0.908, then by RSB and PTA with 0.825 and 0.800 respectively. Comparing the RTA models results with RSB and PTA, the AUC was significantly higher with a difference between areas near then 0.10 and a significance level $P < 0.01$ in all pairwise comparisons with DeLong's test. Relating both RTA models, the model that also had thinnest point information was clinically superior with a difference between AUC of 0.02 and a better specificity, although this difference is not statistically significant.

Conclusion: Our models achieved significantly better results when compared to RSB and PTA, which are the main current references in literature and medical practice to represent the impact of surgery.

Keywords: refractive surgery ; biomechanical impact ; RTA ; artificial intelligence ; machine learning

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Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
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Conclusion
Keywords
E-Poster

17. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Adriana Falcão Lyra**

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e-mail: adri_falcao@hotmail.com

CEP Number: 52041345

5. ABSTRACT (REQUIRED):

Title: EVALUATION OF HIGH-ORDER ABERRATIONS IN REGULAR CORNEAS AND THEIR RELATIONSHIP WITH EPITHELIAL REMODELING IN PATIENTS SUBMITTED TO TOPOGRAPHY-GUIDED FEMTOLASIK (CONTOURA®) IN ONE EYE AND Q-VALUE CUSTOMIZED (CUSTOM-Q®) ON THE CONTRALATERAL EYE.

Author and Co-authors: LYRA, AFV, ALVES, EM, MONTENEGRO, AAL, PARENTE, NSM, CARDOSO, MT, ALVES, LMM, MAIA, CBS, FONTES, BM, NOSE, W

Purpose: To evaluate the relationship between high-order aberrations on the corneal surface of regular corneas with the epithelial thickness on the pre and postoperative eyes after refractive surgery with the Q-value customized ablation (Custom-Q) in one eye versus topography-guided (Contoura) on the contralateral eye.

Methods: Prospective, randomized and double-blind study, that evaluated 76 eyes.

Results: 76 eyes were included in the statistical analysis, from 38 patients (19 men), with a mean age of 26.6 years. Visual acuity of 20/20 was obtained in 97% of patients in both groups. Regarding the study of the corneal epithelium in the preoperative period, 17 sectors were evaluated for its thickness with no statistical difference between the groups in the pre and postoperative period ($P > .05$). There was a statistically significant difference between the groups when we compared the total cornea RMS assessed by the Zernike map of the Galilei G6 on the pre and postoperative period in the Custom-Q group ($P < .05$).

Conclusion: The Custom-Q technique and the Contoura present different characteristics on the objective and surgical planning, which could imply a different epithelial remodeling in the postoperative period and in the amount of high-order aberrations. At 3 months postoperatively, there was no statistical difference between epithelial remodeling in the 17 quadrants assessed between the two techniques. There was a statistically significant difference between the groups when we compared the total cornea RMS assessed by the Zernike Map of the Galilei G6 on the pre and postoperative period of the Custom-Q group ($P < .05$).

Keywords: Contoura; Custom-Q; Corneal Epithelium; refractive surgery; Femto-Lasik

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THEME:

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Inflammation
Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords

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18. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Gabriel Izan Santos Botelho**

PG1

e-mail: gabrielbotelho1011@gmail.com

CEP Number: 0551/2018

5. ABSTRACT (REQUIRED):

Title: Photopic negative response in affected and asymptomatic members from Brazilian families with Leber's Hereditary Optic Neuropathy

Author and Co-authors: Gabriel I S Botelho, Solange R Salomão, Célia H Tengan, Daniel M Rocha, Paula B E Silva, Arthur G Fernandes, Paula Y Sacai, Adriana Berezovsky

Purpose: The photopic negative response (PhNR) is an electrophysiological method that provides retinal ganglion cell function assessment using full-field stimulation. The purpose of this study was to assess PhNR in affected and asymptomatic carriers from Brazilian families with LHON.

Methods: Individuals either under suspicion or previously diagnosed with LHON and their family members were invited to participate in this cross-sectional study. Genotyping for the most frequent LHON mtDNA mutations was performed. A control group of healthy subjects was included. PhNR was recorded using red (640 nm) flashes at 1 cd.s/m², on blue (470 nm) rod saturating background using a full-field stimulation do. PhNR amplitude (μV) was measured using baseline-to-trough (BT). Optical coherence tomography scans of both the retinal nerve fiber layer (RNFL) and ganglion cell complex (GCC) were measured. PhNR amplitudes among affected, carriers and controls were compared by Kruskal-Wallis test followed by post-hoc Dunn test. The associations between PhNR amplitude and OCT parameters were analyzed by Spearman rank correlation.

Results: Participants were 24 LHON affected patients (23 males, mean age=30.5 ±11.4 yrs) from 19 families with the following genotype: m.11778G>A [N=15 (62%), 14 males], m.14484T>C [N=5 (21%), all males] and m.3460G>A [4 (17%), all males] and 14 carriers [13 females, mean age: 43.2±13.3 yrs, m.11778G>A (N=11), m.3460G>A (N=2) and m.14484T>C (N=1)]. Controls were 8 females and 7 males (mean age: 32.6±11.5 yrs). PhNR amplitudes were significantly reduced (p=.0001) in LHON affected (-5.96±3.37 μV) compared to carriers (-16.53±3.40 μV) and controls (-23.91±4.83, p'<.0001) and in carriers compared to controls (p=.01). A significant negative correlation was found between PhNR amplitude and total macular ganglion cell thickness (r=-.62, p'<.05).

Conclusion: In this cohort of Brazilian families with LHON the photopic negative response was severely reduced in affected patients and mildly reduced in asymptomatic carriers suggesting possible subclinical abnormalities in the latter. These findings were similar among pathogenic mutations.

Keywords: LHON, ganglion cells, photopic negative response, mitochondrial disease

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Methods
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19. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Edilana Sá Ribeiro Campêlo**

PGI

e-mail: edilana.sa@unifesp.br

CEP Number: 52011240

5. ABSTRACT (REQUIRED):

Title: ORAL RIBOFLAVIN AND SUNLIGHT EXPOSURE IN THE TREATMENT OF KERATOCONUS IN PATIENTS WITH THIN CORNEA

Author and Co-authors: Edilana Sá Ribeiro Campêlo¹, Natália Ramalho¹, Maria Clara Magalhães¹, Lucas Alves¹, Marcela Oliveira¹, Camilla Rocha¹, Taciana Higino¹, José Alvaro P. Gomes², Bruna V. Ventura¹, Walton Nosé¹ ¹Altino Ventura Foundation ²Federal University of Sao Paulo

Purpose: To evaluate the use of oral riboflavin (vitamin B2) with sunlight exposure in the treatment of patients with progressive keratoconus and thin cornea.

Methods: This interventional study evaluated patients with progressive keratoconus and stromal thickness thinner than 400 μ m, at the Altino Ventura Foundation, in Recife, Brazil. The research protocol was approved by the FAV and UNIFESP Institutional Review Board (process number 4256901). Riboflavin plasma levels were quantified to identify vitamin deficiency, patients with B2 deficiency received supplementation of the vitamin before study enrollment. Patients with normal B2 levels were instructed to ingest 60mg/day of riboflavin and, 2 hours later, to be exposed to sunlight for 30 minutes/day without sunglasses for 3 months. All subjects underwent a complete ophthalmological examination, cornea topography, pachymetry, specular microscopy, and cornea OCT pre- and 3-months post-treatment.

Results: Thirteen patients (25 eyes, 5 females, 8 males) with the mean age of 20.5 years (SD 5.0, range, 11-29 years) were evaluated. One patient had plasma B2 level below the reference value (137 to 370 μ g/L). The corrected distance visual acuity at pre- and 3-months post-treatment were 0.12 \pm 0.26 logMAR and 0.31 \pm 0.19 logMAR, respectively (p = 0.08). Topography astigmatism varied between 6.85 \pm 3.55 D and 6.70 \pm 3.53 D, respectively, at baseline and 3 months after (p = 0.51). No significant changes from pre- and post-treatment were found in Steep K (p = 0.45), thinnest pachymetry (p = 0.93) and epithelium thickness (p = 0.23). Steep K was 54.91 \pm 5.73 D and 54.23 \pm 5.85 D, respectively, thinnest pachymetry was 406.00 \pm 37.53 μ m and 405.78 \pm 34.64 μ m, minimum epithelium thickness was 39.26 \pm 4.43 μ m and 38.00 \pm 7.02 μ m. No adverse effects were reported.

Conclusion: Topographic and pachymetric parameters remained stable 3 months after the use of oral riboflavin and sunlight exposure in patients with progressive keratoconus and thin cornea. Financial support: Altino Ventura Foundation.

Keywords: Keratoconus; Thin cornea; Cornea topography; Riboflavin

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20. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Guilherme Andrade do Nascimento Rocha**

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CEP Number: 5505

5. ABSTRACT (REQUIRED):

Title: Outcomes of a 320-degree intrastromal corneal ring segment implantation for keratoconus: Results of a 6-month follow-up

Author and Co-authors: Rocha, Guilherme, Ferrara, Paulo, Torquetti, Leonardo, Barbosa, Luciene.

Purpose: Shows that a newer long arc length intrastromal corneal ring segment is efficient and safe for keratoconus treatment.

Methods: The uncorrected (UDVA) and corrected (CDVA) visual acuities, spherical equivalent (SE), flat keratometry (K1), steep keratometry (K2), mean keratometry (Km), maximum keratometry (Kmax), and mean asphericity at 30-degree angle (Q 30o), were evaluated preoperatively and at 3-month and 6-month postoperatively. For astigmatism improvement, we analyzed the corneal tomographic vectorial astigmatism change (VAC) between preoperative and 6-month postoperatively. The mean follow-up period was 6.63 ± 0.96 months.

Results: The mean UDVA improved from 1.36 ± 0.48 logMAR preoperatively to 0.63 ± 0.42 logMAR ($p < 0.05$) and the mean CDVA from 0.51 ± 0.22 logMAR with a mean SE of -7.52 ± 4.18 diopters (D) to 0.18 ± 0.12 logMAR ($p < 0.05$) with a mean SE of -3.61 ± 3.79 D ($p < 0.05$), both 6-months postoperatively. All corneal tomographic parameters significantly improved ($p < 0.05$) between preoperative and postoperative intervals. Finally, mean vectorial corneal tomographic astigmatism significantly improved 3.09 ± 1.49 D after 6 months.

Conclusion: The present study suggests that implanting a 320-ICRS is a safe and effective procedure for treating patients with keratoconus.

Keywords: keratoconus; astigmatism; myopia; refractive surgery; cornea

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(PL) OCULOPLASTICS SURGERY

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THEME:

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Angiogenesis
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Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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21. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Gustavo Rosa Gameiro**

PGI

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CEP Number: 1322/2016

5. ABSTRACT (REQUIRED):

Title: Eyelid kinematic analysis prior and after treatment in blepharospasm and hemifacial spasm

Author and Co-authors: Gustavo R. Gameiro, Midori H. Osaki, Teissy Osaki, Denny Garcia, Antonio Augusto Cruz, Paulo Schor, Tammy H. Osaki.

Purpose: It is challenging to develop a method to objectively evaluate the eyelid movements in patients with hemifacial spasm (HFS) and blepharospasm (BSP) due to the complexity of their kinematic components. This study focuses on objectively evaluating eyelids kinematics of patients with these conditions before and after treatment.

Methods: Patients with moderate to severe disease were enrolled. Patients were followed up before and after the administration of onabotulinumtoxinA (Botox®, Allergan, USA). A high-speed camera and micro light-emitting diodes were used to register a 3-minute video of the spontaneous eyelid movements (spontaneous blinking + anomalous eyelid spasms). A custom-made software using the MATLAB Image Processing Toolbox was used to objectively evaluate the eyelid movements. Outcomes were eyelid movements frequency, mean amplitude of eyelid movements and mean maximum velocity of eyelid closing. T-student tests and paired-t test were used to compare measurements between groups.

Results: 38 patients (12 BSP and 26 HFS) were included in this study. Both the BSP and affected side (HFS) groups had decreased parameters after treatment. Frequency of eyelid movements on the affected side (HFS): 21.07 ? 13.57 vs. 12.84 ? 11.19 movements/min (p=0.002) BSP: 27.79 ? 13.94 vs. 22.15 ? 18.22 movements/min (p=0.032). The amplitude of the eyelid movements on the HFS affected side group was 4.81 ? 1.93 vs. 3.83 ? 1.85 mm (p=0.015), BSP: 5.62 ? 2.30 vs. 4.31 ? 1.74 mm (p<0.001). The maximum velocity of the eyelid movements in the affected side of HFS was 82.66 ? 37.56 vs. 61.07 ? 32.71 mm/s (p=0.005), BSP: 85.23 ? 44.19 vs. 49.06 ? 26.82 mm/s (p<0.001). No changes in the metrics of the HFS nonaffected side was observed before and after treatment. Results presented as mean ? standard deviation.

Conclusion: HFS and BSP can be objectively evaluated using a custom-mounted slow-motion video system. There are interesting and significant eyelid kinematic differences after onabotulinumtoxinA injections in both clinically affected side of HFS and in BSP patients. Our results show, not only a reduction in eyelid movements frequency, but also in amplitude and velocity after treatment, reflecting the effect of the drug in the orbicularis oculi muscle.

Keywords: Movements Disorders, Botulinum toxin, Hemifacial Spasm, Blepharospasm, Eyelid spasms

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22. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Felipe Marques de Carvalho Taguchi**

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CEP Number: 3.587.750

5. ABSTRACT (REQUIRED):

Title: Anterior and Total Corneal Astigmatism Differences in Normal and Keratoconic Corneas

Author and Co-authors: Felipe Marques de Carvalho Taguchi, Rafael Freire Kobayashi, Ibraim Viana Vieira, Wallace Chamon

Purpose: To compare measurements of anterior, posterior, and total corneal astigmatism in eyes with and without keratoconus.

Methods: Retrospective observational study based on data collected from cornea tomography (Pentacam HR). Eyes with prior surgery or keratometry flatter than 37D were excluded from this analysis. The sample was divided into eight groups according to the Topographic Keratoconus Classification (TKC). The ratio between posterior and anterior corneal radius of curvature (BFRat) was calculated. Total corneal astigmatism (TCA) was obtained by vector summation of adjusted simulated keratometry (SimK) readings for the anterior and posterior cornea. The BFRat and the difference of magnitudes and axes between anterior cornea SimK astigmatism (ACA) and TCA were compared between groups. ANOVA with post-hoc Bonferroni and Tukey tests were used for statistical analysis.

Results: The study analyzed 27,576 eyes. Mean BFRat in normal eyes was 82.4%±1.8% and decreased to as much as 78.2%±4.1% in more advanced keratoconus ($p < 0.001$). Mean difference between ACA and TCA on both J0 and J45 vector analysis was also greater in keratoconic corneas. Anterior corneal measurement diverted $>0.5D$ from TCA on J0 in 46% and $>1.0D$ on J45 in 67% of TKC 3-4 eyes. Axes difference between ACA and TCA was lesser than 5 degrees in 99.9% of the sample.

Conclusion: Estimating total corneal astigmatism from anterior corneal measurements only may lead to incorrect results in keratoconic corneas. The magnitude of this error increases with disease severity.

Keywords: Astigmatism; Cornea; Keratoconus; Scheimpflug

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Purpose
Methods
Results,
Conclusion
Keywords
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23. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Jorge Selem Haddad**

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CEP Number: 4104080

5. ABSTRACT (REQUIRED):

Title: Immediate tomographic alterations after phacoemulsification cataract surgery

Author and Co-authors: Jorge Selem Haddad MD, Marcelo Vieira Netto MD, PhD, Clainijane Mourato MD, Nathalie Dalou Daher MD, PhD, Alexandre Mine MD, Renato Ambrosio Jr. MD, PhD

Purpose: To study immediate tomographic alterations after phacoemulsification cataract surgery.

Methods: This retrospective study evaluated biometry data from 30 eyes of 30 cataract patients (mean age: 69±8.4 years) using, Pentacam OCT and Millennium phacoemulsification system. Comparative measurements for keratometry (K), cornea volume (CV) and cornea pachymeter were performed in the preoperative and immediate postoperative period using Pentacam. Intraoperative (Ultrasound [US] Elapsed ? used time, US Average ? average power used, and US Absolute ? energy effectively dissipated) obtained with intraoperative Millennium phacoemulsification system, were correlated among themselves. Specular microscopy was also studied. Shapiro-Wilk test and Mann-Whitney test were compared between pre and postoperative.

Results: There is a statistically significant increase in astigmatism ($p=0.0350$), corneal volume ($p'<0.0001$) and pachymetry ($p'<0.0001$) in the postoperative period when compared to the preoperative period. There is also a statistically significant decrease in cell count in specular microscopy ($p'<0.0001$) in the postoperative period when compared to the preoperative period. The mean differences in astigmatism, specular microscopy, corneal volume and pachymetry in the postoperative period in relation to the preoperative period were respectively 0.76 ± 1.83 D, -335.13 ± 236.21 cells, 1.33 ± 0.56 mm³ and 55.23 ± 34.70 microns.

Conclusion: There was a statistically significant effect of US Average and US Elapsed on the difference in corneal volume between the postoperative period and the preoperative period. The higher the US Average, the smaller the difference. The greater the US Absolute, the greater the difference.

Keywords: cataract, Pentacam, Diagnostic Imaging, visual impairment, surgery

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Methods
Results,
Conclusion
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24. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Louise Pellegrino Gomes Esporcatte**

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CEP Number: 4.050.934

5. ABSTRACT (REQUIRED):

Title: Risk Factors for Post-LASIK Ectasia: A Cohort from Egypt

Author and Co-authors: Louise Pellegrino Gomes Esporcatte, MD, Marcella Q. Salomão, MD, Mohamed Tarek El-Naggar, MD, Rania Serag Elkitkat, MD, PhD, Hossam El-din Abdelmonem Ziada, MD, Bernardo T. Lopes, MD PhD, Aydano P. Machado, MD, PhD, Renato Ambrósio Jr, MD, PhD.

Purpose: To report the preoperative risk factors for corneal ectasia after laser in situ keratomileusis (LASIK) in a cohort from Egypt.

Methods: A retrospective case review of 28 operated eyes from 15 patients who had LASIK surgery for myopia or myopic astigmatism. Clinical data and tomographic parameters from rotating Scheimpflug tomography were analyzed.

Results: 24 eyes of 15 patients developed post-LASIK ectasia. Four cases developed ectasia in only one eye, and two cases had unilateral surgery. The average age was 25 ± 4.84 years (range 21-40 years). Average spherical treatment was $-3,35$ D ($-5,25$ to $-0,25$ D) and average cylinder was $-1,09$ D ($-2,75$ to zero D). In seventeen cases, the flap was created using a mechanical microkeratome (average flap thickness 130 ± 12.4 μ m), and in seven cases, the flap was created using a femtosecond laser (average flap thickness 117 ± 4.88 μ m). Considering the classic risk factors, pachymetry was lower than 510 μ m in eight eyes (33%) and lower than 481 μ m in one eye (1%), age was lower than 25 in nineteen eyes (79%), and no patient was younger than 21 years. No case had myopic spherical equivalent more negative than -5.7 D, all cases had RSB (residual stromal bed) higher than 280 μ m, the percent tissue thickness altered (PTA) was higher than 40% in four eyes (16%), abnormal BAD-D (>1.6 , 50% of cases), and ARTmax (<340 , 45.83% of cases). The topometric indexes as IHD, IS, and KISA were within normal values in all patients, the Ectasia Risk Score higher than three was present in 16 eyes (66.6%), and the ectasia susceptibility score (ESS-I) showed change in 23 eyes (95%). Three eyes had no identifiable risk factors.

Conclusion: The classic currently accepted risk factors for ectasia after LASIK are not sufficient to predict every complication. Corneal tomography increases sensitivity, but some cases demonstrate the need to further characterization of corneal structure, which should be integrated to the impact from the surgical procedure to individualize ectasia risk assessment.

Keywords: LASIK, cornea ectasia, keratoconus, screening risk

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Co-authors (maximum 6)
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25. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Marcella Q Salomão**

PGI

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CEP Number: 22640-102

5. ABSTRACT (REQUIRED):

Title: Bowman's topography for improved detection of early ectasia

Author and Co-authors: Marcella Salomão, Renato Ambrosio Jr

Purpose: To evaluate whether OCT topography of the Bowman's layer and artificial intelligence (AI) can enhance the diagnosis of clinical keratoconus (KC) and mild forms of keratoconus.

Methods: Patients were divided into 3 groups. Group 1 comprised 221 normal eyes and group 2 comprised 116 keratoconus eyes. Significant inferior steepening, asymmetric astigmatism and corneal thinning on both OCT and Scheimpflug topography of the anterior surface were indicated of KC. 72 eyes with very mild localized steepening and suspicious anterior corneal surface topography on both devices were classified as mild KC (group 3). Additionally, among the KC patients, 30 patients had very asymmetric cases (VAE), where the fellow eye appeared completely innocent on corneal topography. Those were classified as VAE- NT (very asymmetric eyes with normal topography). Scheimpflug (Pentacam) and OCT (RTVue) scans were performed and analyzed. Pentacam axial curvature and surface aberrations (ray tracing) were calculated from the elevation data and main variables were noted. With OCT, the elevation of the anterior edge and interface were converted to axial curvature and aberrations (ray tracing). Curvature and surface aberrations (ray tracing) of the anterior corneal surface [air-epithelium (A-E) interface in OCT] and epithelium-Bowman's layer (E-B) interface (in OCT only) were calculated. Random forest model was used to automate the classification of the different groups. Four models were constructed: (1) Scheimpflug only, (2) OCT A-E only, (3) OCT E-B only, (4) OCT A-E and E-B combined.

Results: For normal eyes, both Scheimpflug and OCT (A-E and E-B combined) performed equally in identifying these eyes ($p=0.23$). However, OCT A-E and E-B showed that most asymmetric normal eyes were topographically similar to normal eyes and didn't warrant a separate classification based on topography alone. For identifying mild cases, OCT A-E and E-B combined, performed significantly better than Scheimpflug ($p=0.006$). For KC eyes, both Scheimpflug and OCT performed equally ($p=1.0$).

Conclusion: Topography of Bowman's layer significantly improved the detection of mild KC cases. OCT imaging of corneal layers and integration of thickness information to AI models can serve as a comprehensive and stand-alone tool for future clinical use.

Keywords: Cornea ectasia; Corneal biomechanics; Corneal tomography

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26. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Fábio Kenji Matsumoto**

PG1

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CEP Number: 04039-060

5. ABSTRACT (REQUIRED):

Title: Analysis of intraoperative pachymetry behavior using riboflavin with hydroxypropyl methylcellulose in corneal crosslinking

Author and Co-authors: Fábio Kenji Matsumoto, MD, Marcelo Tojar, MD, Luciene Barbosa de Souza, MD, PhD

Purpose: To evaluate the gain of intraoperative pachymetry measurement in patients undergoing Conventional Crosslinking using riboflavin solution with hydroxypropyl methylcellulose. And also evaluated correlation between pachymetry gain, sex, age, maximum keratometry (Kmax) and thinner pachymetry preoperatives.

Methods: This is a prospective comparative case series, conducted at the Department of Ophthalmology and Visual Sciences of the Paulista School of Medicine / UNIFESP in the sector of External Eye and Corneal Diseases. Three groups were created: riboflavin hyposmolar in thin corneas (group A), riboflavin isosmolar in thin corneas (group B), riboflavin isosmolar in non-thin corneas (group C). Thin corneas was standardized as being below 400µm epithelium-off (epi-off) and riboflavin isosmolar being 300mOsm and hyposmolar of 200 mOsm. The riboflavin with hydroxypropyl methylcellulose 0.1% was used from EyePharma. An portable caliper monitored the pachymetry gain during the procedure and the measurement was evaluated before epithelium removal (epif-off), immediately after epithelium removal, and within the following minutes after initiating the hyposmolar riboflavin instillation. During 30 minutes of UVA radiation with Opto CXL Laser® (370nm, 3mW / cm², b5.4 J / cm², distance of 05 cm), it was instilled riboflavin every 5 minutes without interruption of light. The intraoperative pachymetry measurement was standardized to perform the measurement in the thinnest region of the cornea, guided by corneal tomography, and the average of 3 consecutive automatic measurements by the device.

Results: Group A has 30 patients, group B 19 patients and group C 21 patients, to the total of 70 patients. All procedures were Conventional Crosslinking. Results in progress

Conclusion: In progress

Keywords: Keratoconus, Crosslinking, riboflavin, hydroxypropyl methylcellulose

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27. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Michelle de Lima Farah**

PG1

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CEP Number: 355896205

5. ABSTRACT (REQUIRED):

Title: OCULAR MICROINFUSION OF PIGMENT IN EYE BANK CORNEAS WITH TATTOO MACHINE

Author and Co-authors: Michelle de Lima Farah¹, Samir Arbache, Mauricio Maia, Rubens Belfort Jr

Purpose: The purpose of this study is to evaluate the efficacy of intrastromal injection of pigment using a tattoo machine in eye bank human corneas and to compare to two different methods of corneal tattoo.

Methods: Six human corneas were provided for this experimental study. The corneas were divided into 2 groups according to the method of application of the pigment. Each group consisted of 3 corneas that received intervention with pigment applications. In group 1, the pigment was applied in the corneas with the tattoo machine and in group 2, with a needle. The corneas received the injection of black ink (pupil) and brown ink (iris) ("Electric Ink" brand, with density of 1,271,350 ?g / ml). A central 4mm diameter area was delimited in the corneas with a trephine, black ink was applied inward and around it, brown ink. Corneal ultrasonic pachymetry was measured immediately before the injection and in group 1, the depth of the needling application was adjusted to be performed at 200 microns depth and with 60Hz frequency in all corneas. The "Cheyenne" tattoo machine and its cartridges with 7 needles (ANVISA Register: 802 81110015 and 80281110019) were used in the corneas in group 1, both manufactured by MT.DERM GmbH (Gustav?Krone?St.3.- DE ? 14167 - Berlim, Germany and ANVISA register 80281110016). The corneas were sent for histopathological analysis using tissue staining by Hematoxylin-Eosin. Ink diffusion area, depth reached by micropuncture and possible detectable tissue damage were evaluated

Results: The histopatological sections demonstrated that the pigment was delivered in all corneas. The quantity of pigment found on group 1 was significantly higher when compared to group 2. On both groups, no corneal perforations were observed

Conclusion: The use of tattoo machine for corneal pigment application was a safe and more effective method than micropuncture with a needle, both with the amount of pigment delivered and the speed of application.

Keywords: corneal tattoo, micropuncture

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28. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Rafael Jorge Alves de Alcântara**

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CEP Number: 4793250

5. ABSTRACT (REQUIRED):

Title: Intense Pulsed Light in the Treatment of Dry Eye and Meibomian Gland Dysfunction in Patients with Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis

Author and Co-authors: Rafael Jorge Alves de Alcântara, Flavio Eduardo Hirai, Myrna Serapião dos Santos, Telma Pereira Barreiro, Tais Hitomi Wakamatsu, José Álvaro Pereira Gomes

Purpose: Primary objective: to evaluate the efficacy of Intense Pulsed Light (IPL) in the treatment of dry eye disease (DED) and Meibomian gland dysfunction (MGD) in patients with Stevens-Johnson (SJS) and toxic epidermal necrolysis (TEN). Secondary objective: evaluate ocular surface characteristics, DED and MGD in this group of patients.

Methods: Prospective interventional study. 25 patients treated with LPI. Inclusion criteria: patients with SJS or TEN and ocular involvement in the chronic phase, over 18 years old, evidence of MGD and DED, consent/ability to abstain from other medications for dry eye/DGM during the time between screening visit and end of study and no change in topical or anti-inflammatory drugs for systemic use in the previous 60 days and during the study. Exclusion criteria: pregnant or breastfeeding women, epilepsy, immunosuppression, arrhythmias, eye surgery in the last 6 months, active eye infection or history of herpetic keratitis, psychiatric disorders that can interfere with full cooperation or with the subjective description of symptoms, use of photosensitizing drugs, tattoo, pigmented lesions or keloid in the area to be treated. The survey consists of 5 visits. The patients will be submitted to 3 IPL treatment sessions at D0, 2 weeks, and 4 weeks. An assessment protocol at the pre-treatment visit, 4 weeks, 8 weeks and 12 weeks consisting of: OSDI, IDRA® (SBM SISTEMI, Italy): tear meniscus height, lipid layer, NIBUT, Conjunctival hyperemia, Schirmer 1, BUT with Fluorescein, Corneal staining with fluorescein, Conjunctival staining with lissamine green, Meibomian glands and eyelids evaluation (MES and MQS), Meibomyography, Level of MMP-9 InflamaDry® (Quidel Corporation, USA).

Results: Until now, 8 of 25 patients underwent 3 IPL sessions and no adverse effects were observed. They will still be evaluated at 8 and 12 weeks, but it is expected an improvement in signs and symptoms DED and MGD through the parameters that will be analyzed.

Conclusion: Improved DED and MGD signs and symptoms may be achieved in SJS and TEN patients and sustained for at least 8 weeks after 3 IPL sessions.

Keywords: Intense pulsed light; Dry eye disease; Meibomian gland disease; Stevens-Johnson syndrome

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

(CO) CORNEA AND EXTERNAL DISEASE

3. **THEME: (REQUIRED)**
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THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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29. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **albert wilson santos machado silva**

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CEP Number: 0884/2018

5. ABSTRACT (REQUIRED):

Title: Characterization of inflammatory mediators in the tear film, conjunctival epithelium and corneal epithelium in keratoconus patients.

Author and Co-authors: Albert Silva, Luciene Barbosa de Sousa, Niels Olsen, Marcos Antonio Cenedeze, Meire Ioshie Hiyane, Lauro Augusto de Oliveira.

Purpose: To investigate inflammatory mediators in the tear film, conjunctival epithelium and corneal epithelium in keratoconus patients.

Methods: This is an observational cross-sectional study involving 61 individuals (31 keratoconus patients who underwent corneal crosslinking and 30 patients who underwent photorefractive keratectomy as a control group). Lacrimal samples were collected by washing and were analyzed by ELISA (IL-5, IL-6 and IgA). Conjunctival epithelium was collected using impression cytology and will be analyzed by immunofluorescence and confocal microscopy looking for specific markers as IL-5, IL-6 and IgA. Gene expression of IL-5, IL-6 and eotaxin in the corneal epithelium obtained by manual keratectomy from both groups was analyzed by real time-PCR

Results: Preliminary results using a broad inflammatory bioplex assay demonstrated higher tear concentration of IL-5 and IL-6 in keratoconus patients compared to control. Both IL-5 and IL-6 were markedly expressed in the cornea epithelium from keratoconus patients while compared to the control group (IL-5 was 50% higher and IL-6 was 20% higher, respectively). Immunohistochemical and confocal analysis are still lacking but will be processed soon.

Conclusion: Our preliminary data suggests that inflammatory activity seems to be involved in the pathogenesis of keratoconus. Increased tear film cytokines were also overexpressed in the corneal epithelium of keratoconus patients.

Keywords: inflammatory biomarkers, tear film, keratoconus

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(RE) RETINA AND VITREOUS

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Abstract should contain:

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30. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Mariana Batista Goncalves**

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CEP Number: 4142081

5. ABSTRACT (REQUIRED):

Title: Mathematical Model for Degradation and Drug Release from an Intravitreal Biodegradable Implant

Author and Co-authors: J. A. Ferreira, M. B. Gonçalves, E. Gudiño, L. H. Lima, M. Maia and C. M. Oishi

Purpose: To develop a model for drug delivery from a poly (lactico-glycolic acid) (PLGA) biodegradable intravitreal implant.

Methods: In this study, the drug release and the degradation process of a biodegradable intravitreal implant were analyzed from a mathematical viewpoint. Two different clinical situations were considered: non-vitreotomized and vitreotomized eyes. In the former situation, we assumed that the vitreous humor was replaced by a saline solution or by silicone oil. In the intravitreal cavity, the intravitreal liquid enters the implant by non-Fickian diffusion, causing the degradation of the PLGA based implant. Then, the drug in the implant dissolved and diffused out of the polymeric matrix. The transport of the drug in the vitreous cavity and retina was modelled by Fickian diffusion and convection generated by the flow of the vitreous humor. We analyzed the drug concentration in the vitreous and the retina considering the commercialized intravitreal implant Ozurdex®. The numerical simulations in this study were performed without considering the movement of the dexamethasone implant in the vitreous cavity.

Results: In vitreotomized eyes, we observed a steep increase in the mean concentration of drug in the vitreous and in the retina during the first period (approximately 20 days), followed by a slow increase period (approximately 10 days). The drug concentration started to drop after 30 days. In comparison with non-vitreotomized eyes, the drug concentration in vitreotomized eyes with saline solution was similar, but there was less accumulation of drug in both the vitreous and retina. Conversely, the drug concentration in a vitreotomized eye with silicone oil was qualitatively and quantitatively different from that in a non-vitreotomized eye.

Conclusion: In this study, we present a mathematical model for drug delivery from an intravitreal implant commercially available for the treatment of macular edema. From the numerical experiments we conclude the following: 1) In vitreotomized eyes filled with saline solution we observe similar qualitative drug behavior and lower concentration when compared to nonvitreotomized eyes, 2) In vitreotomized eyes filled with silicone oil the drug behavior differs qualitatively and quantitatively from nonvitreotomized eyes.

Keywords: Macular edema; dexamethasone implant

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(CO) CORNEA AND EXTERNAL DISEASE

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Imaging
Cell therapy

FORMAT:

Abstract should contain:

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Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

31. FIRST (PRESENTING) AUTHOR (REQUIRED):

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e-mail: murilobp@gmail.com

CEP Number: 1449/2018

5. ABSTRACT (REQUIRED):

Title: Macromolecular changes in the extracellular matrix of human corneas with keratoconus and after crosslinking with açai (Euterpe oleracea) extract: an ex vivo and in vitro study

Author and Co-authors: Murilo B Peres, Larissa R da Rosa, Priscila C Critovam, Renan P Cavalheiro, Yara M C S Michelacci, Mauro S Q Campos

Purpose: To analyze changes in the composition of the extracellular matrix of keratoconus corneal(KC) stroma, compared to normal corneas(NC). To study the effects in vitro effects of açai extract.

Methods: 12 KC from penetrating corneal transplantation and 8 NC from eye bank were selected. We performed macromolecule extraction, Western blotting(WB), protein dosing, ELISA and immunofluorescence. The proteoglycans (PGs), decorin(DC) and lumican(LC), keratan sulfate(KS) glycosaminoglycan, metalloproteases MMP2, MMP9 and MMP13 and cathepsins B and L were analyzed. To analyze the action of açai extract, type I collagen discs were incubated overnight with different concentrations of açai extract, and alternatively with 30% ethanol açai extract solution in BSS, and BSS for control. After washing and incubation with collagenase, we measured the disc weight variation at different times. NC and KC keratocytes were cultured to assess the cell viability (MTT assay) to açai extract in various concentrations (control, 2%, 4%, 8%) and exposure time (30 min, 1h, 2h)

Results: DC in KC has a higher molecular weight. No differences were observed in LC and KS in both. MMP13 was seen in KC and absent in NC. MMP2, MMP9, Cathepsin B and L were not detected in both. The average of macromolecules extracted per mg of wet corneal tissue in the NC and KC respectively was $4,093 \pm 2.38 \mu\text{g}$ and $1.53 \pm 1.35 (p=0.02)$ for protein, 0.1 ± 0.03 and $0.08 \pm 0.06 (p=0.33)$ for DC, 0.1 ± 0.03 and 0.08 ± 0.05 for LC ($p=0.3$), $3.18 \pm 1.86 \mu\text{g}$ and $2.5 \pm 1.34 \mu\text{g}$ for KS ($p=0.39$). The average PGs extracted per ug of protein in the NC and KC respectively were 0.03 ± 0.01 and $0.07 \pm 0.05 (p=0.03)$ for DC, 0.03 ± 0.01 and 0.08 ± 0.05 for LC ($p=0.00$), $1.24 \pm 1.16 \mu\text{g}$ and $2.51 \pm 2.02 \mu\text{g}$ for KS ($p=0.09$). In immunofluorescence PGs are located in stroma, with no differences in NC and KC. Collagen discs incubated with higher concentrations of açai extract became more resistant to collagenase action. The MTT assay results indicate that, in general, keratocytes are more sensitive to the açai extract in the concentration of 8% for 2h, mainly the keratoconus keratocytes when compared to control ($p=0,04$).

Conclusion: The presence of DC, LC and KS in the stroma of NC and KC was demonstrated both by quantitative (ELISA and protein dosing) and qualitative analysis (western blotting and immunofluorescence). The KC decorin is more glycosylated than that of normal (WB). There was statistically less protein extraction in KC. DC, LC and KS showed no statistical differences between KC and NC when measured by mg of wet tissue, but DC and LC showed statistically lower concentration in NC when measured by mg of extracted proteins, showing that these PGs are preserved in KC. MMP13 was detected by western blotting only in KC. In vitro treatment with açai extract increased collagen resistance to collagenase enzyme digestion, showing crosslinking. Keratocytes are more sensitive to the açai extract on concentration above 4%.

Keywords: cornea, proteoglycans, cross-linking corneal, keratoconus, elisa, western blotting, açai, Euterpe oleracea

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(EP) EPIDEMIOLOGY

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THEME:

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Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

32. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **MARCELA COLUSSI CYPEL**

Post-doc

e-mail: macycel@gmail.com

CEP Number: 05464-010

5. ABSTRACT (REQUIRED):

Title: REGIONAL INEQUALITIES IN PREVALENCE OF SEVERE VISUAL IMPAIRMENT AND BLINDNESS IN OLDER BRAZILIAN ADULTS

Author and Co-authors: Marcela C Cypel, Adriana Berezovsky, Arthur G Fernandes, Marcia H Mitsuhiro, Sung S Watanabe, Nivea Nunes Ferraz, Jacob M Cohen, Marcos J Cohen, Rubens Belfort Jr, Solange R Salomão

Purpose: To compare prevalence of severe visual impairment and blindness obtained from population-based studies in two Brazilian distinct geo-socio-demographic areas, São Paulo and Parintins.

Methods: Data from two population-based studies including adults 50 years and older from low-income areas of São Paulo city (São Paulo Eye Study ? SPES, 2005) and from Parintins (Brazilian Amazon Region Eye Survey ? BARES, 2015) were aggregated. The same exam protocol was performed in both studies including measurement of presenting visual acuity (PVA) from each eye and a comprehensive ophthalmic testing. Prevalence of severe visual impairment - SVI (PVA 20/200 to 20/400 in better-seeing eye) and blindness (PVA worse than 20/400 in the better-seeing eye) from both studies were compared. Associations between outcomes and co-variables were evaluated through multiple logistic regressions. P values ?0.05 were considered statistically significant.

Results: A database including 5318 participants (3677 from SPES and 1641 from BARES) was built. Prevalence of blindness and severe visual impairment was statistically higher in BARES [3.44 ? 95% Confidence Interval (CI): 2.55-4.33, 1.72 ? 95% CI: 1.09-2.35, respectively] than SPES [0.77 ? 95% CI: 0.48-1.05, 0.74 ? 95% CI: 0.46-1.02 respectively] regardless the 10-year interval between the two studies. SVI and blindness were associated with BARES study [OR=2.27, 95%CI:1.30-3.95, p=0.004 for SVI and OR:4.07, 95%CI:2.51-6.60, p<0.001 for blindness] and older age [OR=10.93, 95%CI:4.20-28.45, p<0.001 for SVI and OR=17.96, 95%CI:8.75-36.83, p<0.001 for blindness] while higher education level was a protective factor [OR=0.21, 95%CI:0.05-0.95, p=0.042 for SVI and OR=0.21, 95%CI:0.05-0.91, p=0.037 for blindness].

Conclusion: Prevalence of severe visual impairment and blindness were substantially higher in Parintins compared to a previous study in the low-income area of São Paulo city performed 10 years earlier. These results reinforce the limited access to eye care services in remote areas and emphasize the need of actions to improve eye health prioritizing underprivileged populations.

Keywords: Public Health, Longevity, Epidemiology, Vision impairment, Ophthalmology

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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(LA) LABORATORY

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THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

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Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
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33. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Lydianne Lumack do Monte Agra**

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e-mail: ly.agra@gmail.com

CEP Number: 49025220

5. ABSTRACT (REQUIRED):

Title: QUANTITATIVE ASSESSMENT OF PARTICLES RELEASE WITH SILICONIZED AND SILICONE OIL-FREE SYRINGES USING MICROFLOW IMAGING MICROSCOPY

Author and Co-authors: Lydianne Lumack do Monte Agra, Natasha Ferreira Santos da Cruz, Vaida Linkuviene, John F. Carpenter, Michel Eid Farah, Gustavo Barreto Melo, Maurício Maia

Purpose: Particle release has been observed by ophthalmologists who perform intravitreal injections. This study aimed to quantitatively assess the particle release after agitation of different models of syringes commonly used in intravitreal injections.

Methods: Four syringes models were assessed and all were studied with buffer and three different drugs: Bevacizumab, Aflibercept, and Ziv-Aflibercept. Two conditions were analyzed: with and without agitation. Counting, concentration, morphology and size distribution of particles were assessed by flow imaging microscopy.

Results: The average particle count released after agitation was higher than in the no agitation group in the BD Ultra-Fine syringe. For SR, differences were observed between the two studied conditions for particles greater than 10 and 25µm. For the other types of syringe there were no significant differences in means.

Conclusion: Flicking syringes in order to remove air bubbles is an important factor that enhance particles release into human vitreous.

Keywords: Intravitreal injection; syringe; particle release; silicone oil.

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Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

34. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Renato Galao Leca**

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CEP Number: 4.396.957

5. ABSTRACT (REQUIRED):

Title: Panel of tear and serum biomarkers in ophthalmologic disorders

Author and Co-authors: Renato G Leça , Fernando Luiz Afonso Fonseca , Ana Luisa Hofling-Lima

Purpose: The purpose of this research is to study plasmatic and lacrimal biomarkers in various ophthalmologic disorders , creating a panel to better understand their pathophysiological aspects.

Methods: Blood and tears (this one by Schirmer's tape) will be collected from 30 patients of each of the following ophthalmic conditions: keratoconus, dry eye disease, glaucoma, atopic conjunctivitis, diabetic retinopathy, age-related macular degeneration, cataract, uveitis, and myopia, in addition to 60 volunteers as controls, from the Ophthalmology outpatient clinics of the Faculdade de Medicina do ABC, and evaluated the markers TNAI α , ultrasensitive CRP, Nrf2, interleukins 1,2,6 and 10 and the antioxidant enzymes catalase, superoxide dismutase and glutathione-peroxidase , all by gene expression, 25 (OH) Vitamin D3, by the electrochemiluminescence method, and lutein by the HPLC method. All exams will be performed by the clinical analysis laboratory of the Faculdade de Medicina do ABC

Results: We have already obtained 25(OH) vitamin D3 results in a group of 36 control volunteers, where the serum mean was 29.69 ng / ml and the tear mean exceeded 100 ng / ml, and in a group of 76 eyes with keratoconus of 44 individuals, similar in age to the control group, where mean plasma vitamin D3 was 21.92 ng/ml and mean tear was 66.76 ng/ml. We observed that the o vitamin D3 tear levels was significantly higher than the plasma levels (p '<0.001) in both groups, we also observed that the serum levels of vitamin D3 in the control group was significantly higher (P '<0.05) than in the group with keratoconus, as was tear levels of vitamin D3 , much higher (p '<0.0001) than in the group with keratoconus

Conclusion: We concluded that the mean of 25(OH) vitamin D3 was significantly higher (0.001) in tears than in plasma in control volunteers, as well as in the group of patients with keratoconus (p'<0.001) and mainly higher in tears (p'<0.0001) and in plasma (p'<0.05) in the control group compared to the group with keratoconus. We must deepen the studies to understand why tear levels are significantly higher than plasma levels in the 2 groups studied , and also why plasma levels and especially tear levels are significantly lower in the keratoconus group compared to the control group

Keywords: Keratoconus, , Vitamin D, tear, biomarkers,

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

(RE) RETINA AND VITREOUS

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ANGIOGENESIS

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35. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Nadyr Antonia Damasceno**

Post-doc

e-mail: nadyrdamasceno@yahoo.com

CEP Number: 20550030

5. ABSTRACT (REQUIRED):

Title: Intravitreal Injections of Ziv-aflibercept in Diabetic Macular Edema with no Previous anti-VEGF therapy: A Double-Masked Randomized Clinical Trial.

Author and Co-authors: Nadyr Damasceno¹, Amanda de Oliveira¹, Renata Bertazzoli, Eduardo Damasceno^{1,2}, Mauricio Maia¹, Michel Eid Farah¹ 1 Department of Ophthalmology, Federal University of São Paulo, São Paulo, Brazil 2 Department of Ophthalmology, Federal Fluminense University

Purpose: To compare the safety and efficacy of PRN intravitreal injections of ZIV-aflibercept versus aflibercept to treat diabetic macular edema in a 52-week follow-up.

Methods: This is a Prospective, interventionist, single-center, double-masked, randomized, 52-week, clinical trial (CAAE: 27225819.1.0000.8098). Patients have been recruited from July 2021 to September 2022. The first 40 consecutive patients who meet eligibility will be randomly divided into two groups: Group 1 (20 patients treated with ziv-aflibercept) and Group 2 (20 patients treated with aflibercept). Only one eye (worse BCVA) per patient will participate. Patient eligibility comprises adult patients with type 1 or 2 diabetes mellitus, BCVA of 20/25 to 20/320 (ETDRS chart) secondary to center-involving DME (CMT of 275 microns or greater in the study eye). Key exclusion criteria include retinal laser in the last 6 months, prior use of antiangiogenic drugs or intraocular corticosteroids, creatinine >2 mg/dl, glycosylated hemoglobin (HbA1c) >11%, uncontrolled hypertension, prior myocardial infarction, or cerebrovascular accident. Safety parameters will be evaluated by multifocal and full-field electroretinogram and systemic or ocular complications.

Results: Main Outcomes: Noninferiority of the ziv-aflibercept to aflibercept in change BCVA and CMT.

Conclusion: Besides the great number of diabetic patients, uncontrolled diabetic in the public health system of Brazil has been our leading limitation at the beginning of our study. From July to September 2021, the eligibility was HbA1c < 10%, however, no patient in 73 diabetic patients met this criterion. Ngugen et al (RISE and RIDE) excluded patients with HbA1c >12%. Moreover, the post hoc analysis of VISTA and VIVID studies by Singh and cols showed that mean gain BCVA did not rely on baseline HbA1c (4.5% to <14.7%) in patients who received intravitreal aflibercept at week 52. The current study was supported by Pro-Infusion.

Keywords: Ziv-aflibercept, aflibercept, Safety, Efficacy, Long term Follow-up

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THEME:

Infeccion
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Angiogenesis
Imaging
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FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

36. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Alex Treiger Grupenmacher**

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CEP Number: 990022081

5. ABSTRACT (REQUIRED):

Title: Development of a new antiangiogenic drug derived from chemically modified heparinomimetics

Author and Co-authors: Alex Treiger Grupenmacher M.D, Bianca O. Augusto, Vinicius Kniggendorf M.D, Diego Lisboa Araujo M.D, Felipe Muralha, M.D Juliana L. Dreyfuss, Pharm D. Advisor: Ph.D, Caio V. S. Regatieri M.D, P PhD

Purpose: To synthesize and characterize 6-dessulfated heparin in vitro with regard to its safety to endothelial and RPE tissues through cytotoxicity assays, cell proliferation, tube formation and antiangiogenic effect.

Methods: Modification of heparin into 6-dessulfated heparin was achieved through acidification of sodic heparin, addition on piridin salt, solubilization in DMSO + 10% methanol and N resulfation. The chemically modified heparin was then tested, in different concentrations (control, 0.001, 0.01, 0.1 mg/mL) for citotoxicity and cell proliferation with rabbit endothelial aortic cells (REAC) and RPE cells (ARPE-19) in a MTT experiment and cell count after paraformaldehyde mounting with Incell analyzer. Tube formation was tested through Matrigel plating with REAC cells and analysed with ImageJ software.

Results: In the toxicity experiment, none of the 6-dessulfated heparin concentrations showed citotoxicity towards both RAEC and ARPE-19 cell mounts. 0.01 and 0.001 mg/dL doses showed statistically significant reduction in RAEC cell proliferation. None of the concentrations inhibited ARPE-19 proliferation. Tube formation was significantly reduced in the 0.01 and 0.001 mg/dL concentration when compared to control group.

Conclusion: 6-dessulfated heparin showed RPE cell safety in all concentrations, as well as viability of RPE and endothelial cell mounts. Angiogenic proliferation has also showed dose-dependent inhibition. Combined, these results of safety and efficacy of our modified heparin in vitro were the basis for the longitudinal progression of the study to in vivo experiments using a choroidal neovascularization model in rats. Chemically modified heparins are possibly an alternative approach to treat diseases with neovascular background, such as AMD and Diabetes, which open new possibilities to surpass the treatment burden we face today.

Keywords: antiangiogenic, angiogenesis, choroidal neovascularization, heparin, modified heparin

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Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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37. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 0854/2019

5. ABSTRACT (REQUIRED):

Title: Intra-Arterial Chemotherapy for the treatment of retinoblastoma eyes: review of 586 surgeries

Author and Co-authors: Luiz Teixeira, Jose Roberto Fonseca, Carla Renata Macedo, Monique Mangeon, Bruna Morales Advisor: Professor Juliana M Ferraz Sallum

Purpose: To analyze technical aspects, adverse events, and efficacy of intra-arterial chemotherapy (IAC) surgery procedure for retinoblastoma eyes.

Methods: Prospective interventional study approved by the institutional review board. All patients treated with IAC in a single institution (Pediatric Oncology Institute, Federal University of São Paulo) between 2011 and 2017 were analyzed. Technical aspects of the procedure, intraoperative adverse events and efficacy of drug delivery were reviewed.

Results: A total of 586 surgeries of IAC in 142 eyes were performed with a mean of 4 procedures per eye (range 1-13 procedures). The mean patient age at first IAC was 26 months (range 6-119 months). All procedures (100%) were done by catheterizing the carotid artery from a femoral access point. Drug delivery to the eye was made using selective catheterization of the ophthalmic artery ostium (OA) in 469 surgeries (80.1%), selective catheterization of the middle meningeal artery (MMA) in 90 surgeries (15.4%) and balloon-assisted occlusion of the internal carotid artery in 27 surgeries (4.5%). Injection of one drug (Melphalan (M)), was used in 97 (17%) procedures and combinations of two or three drugs (Melphalan (M), Topotecan (T) and Carboplatin (C)) in 489 (83%) procedures. Technical success rate was of 97.1% (565/598). Unsuccess occurred by the combination of ophthalmic artery spasm and absent vascular communication between the MMA and the lacrimal gland artery. Procedural adverse events consisted of nine cases (1.6%) of transient vascular complications at the femoral artery (important vascular spasm, partial occlusion, or necessity of vascular suture), two cases (0,35%) of temporal skin vasculitis with ulceration and 67 cases (11,9%) of cardio-respiratory reactions. All patients are alive with no metastatic disease, extra-ocular extension, or secondary leukemia. No neurological complications were reported. No eye was enucleated by a complication related to the IAC.

Conclusion: The use of IAC surgery for retinoblastoma treatment showed successfully results with minimal technical unsuccess and adverse events. Most of the surgeries were effective 97.1% with a globe rate preservation of 84.5%.

Keywords: Retinoblastoma, chemotherapy, Intra-arterial

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Purpose
Methods
Results,
Conclusion
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38. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Mariana Matioli da Palma**

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CEP Number: 11910071

5. ABSTRACT (REQUIRED):

Title: Characterizing ophthalmic findings in patients with Alagille syndrome

Author and Co-authors: Mariana Matioli da Palma, Mark E. Pennesi, Ricardo Casaroli-Marano, Juliana Maria Ferraz Sallum

Purpose: The purpose of this study is to expand the phenotypic and genotypic spectrum, mainly ophthalmic findings, of Alagille syndrome.

Methods: This is a retrospective, observational, multicenter study performed following the Declaration of Helsinki. We systematically reviewed systemic and ophthalmologic data extracted from medical records, multimodal retinal imaging, visual fields, electrophysiological assessments, and molecular genetic findings. The study population was comprised of 23 patients from 21 families.

Results: JAG1 pathogenic variants were identified in 16 individuals, of those, 6 were novel. Most of the mutations found introduce premature stop codons. Cardiovascular abnormalities were found in 83% (19/23) of the patients. Among those, cardiovascular murmur was the most frequent cardiovascular finding presented in 74% (14/19). Hepatobiliary issues and musculoskeletal anomalies were presented in 61% (14/23) of the patients. Dysmorphic facies were present in 16 patients, with a broad forehead being the most frequent feature. Ocular symptoms were found in 91%, with peripheral vision loss being the most frequent complaint (73%). Nyctalopia was reported in 48% (11/23) and photophobia in 35% (8/23). Median Snellen visual acuity was 20/25. Anterior segment abnormalities were presented in 74% (17/23) of the patients, of those, posterior embryotoxon was the most frequent finding. Posterior segment abnormalities were presented in 96% (22/23). Abnormalities of the optic disc were found in 52% (12/23), and peripheral retinal abnormalities were the most frequent ocular finding, found in 96% (22/23). Among 17 patients that underwent electroretinography 14 presented a pattern of rod-cone dysfunction, 2 had isolated rod dysfunction, and the youngest patient that underwent electroretinography presented with normal rod and cone responses.

Conclusion: Peripheral chorioretinal changes were more frequent than posterior embryotoxon, the classic asymptomatic ocular feature of Alagille syndrome. Posterior changes in the periphery were better seen with wide-field fundus autofluorescence showing a well-demarcated hypoautofluorescent periphery. We suggested the presence of peripheral chorioretinal atrophy may help in diagnosing this ultra-rare multisystem syndrome.

Keywords: Alagille syndrome, retinal dystrophies, cholestasis

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FORMAT:

Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

39. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **ERIKA SAYURI YASAKI**

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CEP Number: 1191/2018

5. ABSTRACT (REQUIRED):

Title: CERKL related inherited retinal dystrophies in a Brazilian population

Author and Co-authors: Yasaki ES, Salles MV, Motta FL and Sallum JMF

Purpose: To describe a case series of 24 patients from 24 unrelated families diagnosed with inherited retinal dystrophy (IRD) related to in CERKL gene from a Brazilian outpatient clinic

Methods: We retrospectively reviewed 1181 medical records of Brazilian patients with IRD who are assisted at Instituto de Genética Ocular in Brazil between January 2006 and September 2021 and selected 24 patients with molecular diagnosis of an inherited retinal dystrophy related to CERKL gene. Data of clinical and molecular findings are analyzed for phenotype-genotype correlation

Results: We found 15 different variants described in CERKL gene and the homozygous c.769C>T variant was the most common molecular finding in this cohort which was found in 8 out of 24 individuals

Conclusion: Our data found that the homozygous variant c.769C>T was the most common molecular diagnosis among CERKL related IRD in this cohort

Keywords: inherited retinal dystrophy, CERKL gene, macular dystrophy, rod cone dystrophy, retinitis pigmentosa.

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Abstract should contain:

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Purpose
Methods
Results,
Conclusion
Keywords
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40. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Karine - Koller**

PG1

e-mail: karinekkoller@gmail.com

CEP Number: 1308030

5. ABSTRACT (REQUIRED):

Title: Serum vitamin D levels in patients with autoimmune uveitis and its possible relationship with disease severity

Author and Co-authors: KOLLER, Karine FERNANDES ZAMORA, Yuslay TEIXEIRA Fonseca Matos, KIMBLE COIMBRA, Cicero Galli CASAROLI-MARANO, Ricardo Pedro MUCCIOLI, Cristina

Purpose: To evaluate serum vitamin D levels in patients with autoimmune uveitis (AIU) and its possible relationship with disease severity.

Methods: This descriptive, cross-sectional study evaluated patients of both sexes, aged over 18 years, with a diagnosis of AIU (protocol number 3.273.214/2019). The diagnosis and classification of uveitis were based on the Standardization of Uveitis Nomenclature (SUN). Severity of uveitis were identified, considering clinical findings indicators of severity, and serum 25-hydroxyvitamin D [25(OH)D] levels were evaluated and correlated.

Results: In this group of 67 patients (29.9% men and 70.1% women), 83.5% (n = 56) showed a lower serum 25(OH)D level. There was a statistically significant association between vitamin D status and uveitis severity (p=0.01), as evidenced by the Spearman test (rho= -0.31, p=0.04).

Conclusion: This study showed that patients with moderate to severe AIU had significantly lower vitamin D levels than patients with mild AIU, suggesting that low vitamin D levels may play a role in AIU pathogenesis and severity. This finding suggests a need to monitor serum vitamin D levels and consider supplementation in the presence of deficiency to avoid a worse prognosis of uveitis.

Keywords: ocular immunity, autoimmune uveitis, vitamin D, 25-hydroxyvitamin D, immunomodulation

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Results,
Conclusion
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E-Poster

41. FIRST (PRESENTING) AUTHOR (REQUIRED):

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PGI

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CEP Number: Sem aprov

5. ABSTRACT (REQUIRED):

Title: Ocular Inflammation following COVID-19 Vaccination. Is there any reasonable explanation?

Author and Co-authors: Carlos Eduardo de Souza, Heloisa Nascimento and Cristina Muccioli

Purpose: Analysis of case reports related to ocular inflammation following COVID 19 vaccination and discussion of possible triggering mechanisms.

Methods: This observational study describes three patients with different sites of ocular inflammation after COVID 19 vaccination from April to June 2021 at Uveitis Sector of Ophthalmology Department at Sao Paulo Federal University (UNIFESP).

Results: Results Patients were diagnosed with scleritis (case 1), Vogt Koyanagi Harada Disease (VKH) (case 2) and Optic Neuritis (case 3).

Conclusion: Facing the current pandemic scenario, different types of vaccine have been created in order to provide lasting immunity against infection. CoronaVac is an inactivated SARS-COV2 vaccine developed by Sinovac Life Sciences (Beijing, China) and it was developed by propagating the SARS-CoV-2 CN2 strain inside Vero Cells and inactivating it with B-propiolactone In this series report, three different sites of ocular inflammation were described following the second dose of CoronaVac - Scleritis, VKH and Optic Neuritis, all of them with unremarkable past medical history. The mechanisms by which vaccines could induce an anomalous autoimmune response are generally extrapolated from the same concepts as those attributed to infectious agents. Although it is difficult to determine causality, our cases raise the possibility of inactivated SARS-COV2 vaccination triggering?or even causing?VKH disease. This report of vaccine-induced VKH can enlighten possible causative mechanisms involved in VKH pathogenesis. Sir. Stewart Duke-Elder, in 1966, had already emphasized that the etiology of numerous obscure uveitis may be secondary to virus infections. The possibility of identifying which Sars-CoV-2 viral particles?possible used in the vaccines, as the structural surface glycoprotein antigen?may trigger uveitis is an important path for scientific research.

Keywords: Covid-19, Vaccine, Coronavac, Uveitis

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42. FIRST (PRESENTING) AUTHOR (REQUIRED):

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R1

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CEP Number: 04042-070

5. ABSTRACT (REQUIRED):

Title: Chronic Myeloid Leukemia Presenting as Neovascular Glaucoma and Multiple Retinal White Centered Hemorrhages

Author and Co-authors: Huang, Carolina Ferreira, Fowler, Flávio de Ávila, Azevedo, Alexandre Bortoloti

Purpose: To report an uncommon presentation of chronic myeloid leukemia (CML) as Neovascular glaucoma with hyphema and Roth's spots. Case of a patient with chronic myeloid leukemia diagnosed after the complaint of low visual acuity due to retinopathy in both eyes.

Methods: Review of medical record.

Results: A 65 year old patient with past medical history of diabetes mellitus presented to the ophthalmologic ER with sudden loss of visual acuity and pain in the right eye. He had no spontaneous systemic complaints. When inquired referred asthenia, night sweats and weight loss for the past 8 months. In his ophthalmologic exam he had a visual acuity of counting fingers at 1m in the OD and 20/20 in the OS. Intraocular pressure at presentation was 35 mmHg in OD with hyphema and corneal edema. Fundus examination revealed intraretinal hemorrhages as well as multiple Roth's spots in both eyes. His blood count showed a leukocytosis of 495.248 with a left shift and 4% of abnormal cells. This patient was immediately admitted to the ICU to perform cytoreduction with hydroxyurea and leukapheresis, bcr/abl test in peripheral blood and myelogram, whilst controlling the IOP with acetazolamide, timolol and brimonidine. The results of the myelogram suggested chronic myeloproliferative neoplasia and the bcr/abl test was positive, thus confirming the diagnosis of chronic myeloid leukemia. After 2 months of follow up and treatment, the patient remained with low visual acuity (hand motion), high IOP (35mmHg) and hyphema in the OD. In this scenario it was programmed to perform cyclophotocoagulation and an anterior chamber washout due to the diagnosis of neovascular glaucoma.

Conclusion: Despite not being usual, myeloproliferative disorders should be among the differential diagnosis not only of retinopathies presenting with hemorrhages and Roth's spots, but also of neovascular glaucoma. The complete ophthalmologic exam as well as early investigation are fundamental to a proper diagnosis, which leads to prompt intervention and, therefore, to a better prognosis. Also, the distinction between a diabetic retinopathy and those caused by leukostasis should be precise as one could mimic the others' fundus findings.

Keywords: Chronic Myeloid Leukemia, Neovascular Glaucoma, Hyphema, Roth's spots

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THEME:

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Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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43. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Diego Lisboa Araújo**

Fellow

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CEP Number: 705404101

5. ABSTRACT (REQUIRED):

Title: Efficacy of new anti-angiogenic drugs derived from heparinomimetics for neovascularization of choroid in animal model

Author and Co-authors: Diego Lisboa Araujo, Alex Treiger Grupenmacher, Bruna Fetter, Bianca Oliveira Augusto, Vinicius Kniggendorf, Juliana Luporini Dreyfuss, Caio Vinicius Saito Regatieri.

Purpose: Choroidal neovascularization lead to severe visual impairment and affect the quality of life worldwide. Many drugs are currently being studied as potential targets, and chemically modified heparins (mHEP) have shown promising anti-angiogenic proprieties. This study aims to test the efficacy of a mHEP as an antiangiogenic factor in vivo using a model of laser induced choroidal neovascularization in rats, as well as to compare its effect to bevacizumab.

Methods: A mHEP developed in the Molecular Biology Division of Unifesp previously underwent in-vitro testing such as cell proliferation, cell viability, migration and adhesion assays which showed no toxicity and potential therapeutic action. Zucker male pigmented rats were divided into 4 different groups: (1) control group (placebo), (2) bevacizumab alone, and (3 and 4) bevacizumab + two different concentrations of a mHEP. Choroidal neovascularization was induced in the animal with the use of diode green laser causing Bruch's membrane thermal rupture. The rats were then injected. Animals were euthanized and the eyes removed and fixed in formaldehyde. An "eye-cup" model of choroid was created and anti-vegf immunofluorescence applied to the specimens. Visualization in fluorescence microscopy of the choroidal neovascularization networks was performed and measured using ImageJ software.

Results: Area measure analyses showed statistical difference between the control group and bevacizumab alone ($p = 0,0371$) and also compared to the two concentrations of bevacizumab + mHEP groups ($5,0\mu\text{g/mL}$ and $0,5\mu\text{g/mL}$? $p < 0,001$). Furthermore, we found statistical association between bevacizumab alone compared to both concentrations of the modified heparins ($5,0\mu\text{g/mL}$ - $p = 0,0011$, $0,5\mu\text{g/mL}$? $p = 0,001$). However, no difference between bevacizumab+ $0,5$ mHEP x bevacizumab+ 5 mg/mL was found.

Conclusion: mHEP is a novel class of anti-angiogenic drugs which has shown promising results both in vitro and in vivo. Further investigation might comprise extensive toxicity tests in larger animal models, as well as developing studies between distinct mHEP and with other anti-angiogenic drugs.

Keywords: choroidal neovascularization; angiogenesis; modified heparins; antiangiogenic.

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44. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Guilherme Havir Bufarah**

R3

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CEP Number: 5015000

5. ABSTRACT (REQUIRED):

Title: COMPARISON OF THE USE OF ANALGESIC DRUGS IN PANRETINAL PHOTOCOAGULATION ON PATIENTS WITH DIABETIC RETINOPATHY

Author and Co-authors: Guilherme Bufarah, Franklin Oda, Felipe Muralha, Alex Grupenmacher, Lucas Zago Advisor: Nilva Moraes

Purpose: Panretinal Photocoagulation (PRP) is one of the main therapeutic modalities for diabetic retinopathy, reducing evolution to severe forms of the disease, as proven by studies such as the DRS in 1979 and ETDRS in 1989. The most common side effect of PRP is pain and discomfort during and after the procedure. Pain often delays patient treatment by ending sessions shortly, requiring further procedures to complete marks throughout the retina, and in some cases, leading to treatment abandonment. Aiming to reduce the pain and thus increase adherence and shorten treatment duration, multiple drugs have been tested and are routinely used in clinical practice due to their analgesic effects. Among them, Ibuprofen, Dipyron, Fluorometholone and Ketorolac stand out. The main purpose of the study is to increase knowledge about the use of topical and systemic analgesic drugs in the laser panphotocoagulation procedure for diabetic retinopathy, aiming at offering a better treatment for these patients.

Methods: The patients will be randomized in 4 groups: Ibuprofen 400mg oral, Metamizole 500mg oral, Fluorometolone 0,1% topical and Ketorolac 0,5% topical. Every patient will have two exposures, and in both they will take one pill and use one eyedrop. In one of the exposures they will use the analgesic drug and a placebo (eye drop or pill placebo) and in the other exposure, both the pill and eyedrop are going to be a placebo. Neither the patient or the doctor knows which drug the patient is taking, or if the exposure is a "treatment" or "placebo" one. Each session is going to be made in one of the patient's eye, using the same laser, with similar spot size, potency, number of spots, and same quadrants. After the procedure the patient will inform in the Visual Analog Scale the pain during the procedure, going from 0-10.

Results: The study is currently in progress, by now there are 81 patients enrolled in it.

Conclusion: Although studies have shown efficacy of some analgesic drugs, they were comprised of a small population, didn't compare different drugs and didn't use some medications widely available in our daily practice. We hope that the drugs in the study present a relevant analgesic effect, possibly making their use a standard procedure for pain reduction in patients undergoing PRP.

Keywords: Panphotocoagulation, Diabetic Retinopathy, Analgesic Drugs

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45. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **KLAUS ANTON TYRRASCH**

R2

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CEP Number: 1191/2020

5. ABSTRACT (REQUIRED):

Title: Evaluation of Retinopathy of Prematurity Treatment in a Tertiary Care Service in Sao Paulo.

Author and Co-authors: Klaus Anton Tyrrasch, MD, Zaira F. M. Nicolau, MD, Nikoly Tigani Fares, MD, Nilva S. B. Moraes, MD.

Purpose: The main purpose of the study was to evaluate the frequency of patients with retinopathy of prematurity diagnosis who required therapeutic intervention and which modalities were performed, with the secondary objective to assess the effectiveness of the treatment of ROP by evaluating post-treatment retinal findings, visual acuity, need for retreatment and complications.

Methods: A longitudinal retrospective study was performed by evaluating the medical records of patients with previous diagnosis of retinopathy of prematurity which underwent ophthalmologic examination at Hospital São Paulo between 2015 and 2019, assessing the disease severity grading and the presence of plus disease or not. The therapeutic interventions and these post-treatment results were evaluated. Patients which were not submitted to ophthalmologic examination or which did not have retinopathy of prematurity diagnosis were excluded of the research. The established significance value was $P < 0.05$. The software used for analysis was SPSS Statistic version 22.0.

Results: In progress.

Conclusion: In progress.

Keywords: Retinopathy of Prematurity; Retina; Vitreous

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46. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Lucas Denadai**

Fellow

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CEP Number:

5. ABSTRACT (REQUIRED):

Title: Pain control during panretinal photocoagulation for diabetic retinopathy

Author and Co-authors: Lucas Denadai[1], Vania Mozetic[2], Veronica H Yamada[3], Rachel Riera[4], R Andrew Moore[5] [1] Universidade Federal de São Paulo, Sao Paulo, Brazil [2] Instituto Dante Pazzanese de Cardiologia, Sao Paulo, Brazil [3] Sao Paulo, Brazil [4] Cochrane Brazil

Purpose: This is a protocol for a Cochrane Review (intervention). The objectives are as follows: To assess the effects (benefits and harms) of different interventions that are aimed at controlling pain associated with pan-retinal photocoagulation in people with severe non-proliferative diabetic retinopathy and proliferative diabetic retinopathy.

Methods: We will consider randomised controlled trials (RCTs) irrespective of language, publication status (published, unpublished, published only as abstract or ongoing) or publication date. We will consider participants aged 18 or over, who are receiving pan-retinal photocoagulation for the treatment of severe non-proliferative diabetic retinopathy and proliferative diabetic retinopathy. We will include RCTs comparing any medical intervention (pharmacological and non-pharmacological) aimed to control pain in people receiving PRP for severe non-proliferative diabetic retinopathy and proliferative diabetic retinopathy. Known examples in the literature include different substances used systemically or locally for the treatment of pain (e.g. corticosteroids, opioids, non-steroidal anti-inflammatory drugs, oral analgesics, antidepressants, anticonvulsants, topical anaesthesia and regional anaesthesia).

Results: In progress

Conclusion: In progress

Keywords: Pain; Photocoagulation; Diabetic Retinopathy; Diabetes; Retina

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Abstract should contain:

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Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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47. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Luciana - Arrais**

Fellow

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CEP Number: 4025013

5. ABSTRACT (REQUIRED):

Title: SURGICAL MANAGEMENT OF DIABETIC RETINOPATHY COMPLICATIONS: AN OVERVIEW IN A PUBLIC HOSPITAL IN SÃO PAULO

Author and Co-authors: Luciana Arrais, Murilo Ubukata Polizelli, Natasha Ferreira Santos da Cruz, Fernando Korn Malerbi, Octaviano Magalhães

Purpose: To review preoperative conditions, indications, surgical technique employed and anatomical and functional results after vitreoretinal surgery, in a large number of patients with complications due to diabetic retinopathy in a public hospital of high complexity in vitreoretinal surgery in São Paulo.

Methods: Retrospective, non-comparative analytical study of vitreoretinal surgeries performed between January 2017 and December 2019 in patients with diabetes mellitus who evolved with ocular complications resulting from this disease. The study will be carried out at the Escola Paulista de Medicina, and the collection of information such as demographic data, primary indication for surgery, ocular history, complications and surgical outcomes will be evaluated by consulting the electronic medical record. Cases had a complete ophthalmic evaluation before and after surgery and were followed-up for at least 6 months

Results: In progress

Conclusion: Our study expect to find that complications of diabetic retinopathy are an important cause of vitreoretinal surgery in diabetic patients. Due to the difficulty in accessing the public health service, we believe that patients are referred late, reaching more severe stages of retinopathy in the preoperative. Therefore they may have a greater number of surgical complications, reoperations requirement and worse anatomical and visual outcomes.

Keywords: Diabetic retinopathy (DR); retina surgery; vitrectomy; vitreous haemorrhage (VH); retinal detachment; fibrovascular proliferation;

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Methods
Results,
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48. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Murilo Ubukata Polizelli**
Fellow
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CEP Number: 4336812

5. ABSTRACT (REQUIRED):

Title: Effects of phosphodiesterase type 5 inhibitors on choroid and ocular vasculature: a literature review

Author and Co-authors: Murilo Ubukata Polizelli, Natasha Ferreira Santos da Cruz, Laís Maia Cezar, Emmerson B. Cardoso, Fernando Penha, Michel Eid Farah, Eduardo B. Rodrigues and Eduardo A. Novais

Purpose: To provide information on the effects of phosphodiesterase type 5 (PDE5) inhibitors on choroidal vessels and central serous chorioretinopathy (CSC) and possible implications for development of exudative age-related macular degeneration (AMD).

Methods: Two independent investigators conducted a qualitative review of PubMed to identify studies on the choroidal effect of PDE5 inhibitors in June 2019. The search used key words that included PDE5 inhibitors, sildenafil, tadalafil, vardenafil, choroid, choroidal flow, choroidal vessels, choroidal thickness, CSC, AMD or a combination. Only studies which assessed choroidal findings were included.

Results: Patients with AMD, who have decreased choroidal perfusion, may manifest more severely diminished choroidal ability to deliver oxygen and other metabolites to the retina, leading to growth of neovascular tissue. As a result of this engorgement of the choroidal vasculature, some patients may have leakage across the retinal pigment epithelium (RPE) and accumulation of subretinal fluid, resulting in CSC. Transient visual symptoms, i.e., changes in color perception and increased light sensitivity, are well-known adverse effects, but there have been rare reports of vision-threatening ocular complications in users of PDE5 inhibitors, such as nonarteritic anterior ischemic optic neuropathy and cilioretinal artery occlusion.

Conclusion: The choroid is a vascular tissue analogous in many respects to the corpus cavernosum, and PDE5 inhibitors may increase the choroidal thickness and perfusion. While it is intuitively obvious that thickness of the choroid alone does not guarantee better choriocapillaris oxygenation, it is a reasonable step towards ameliorating ischemia. These drugs have numerous physiologic effects on the choroid related to blood flow, such as clinical consequences in CSC and AMD.

Keywords: Choroidal thickness, Enhanced depth imaging, Optical coherence tomography, PDE5 inhibitors

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Methods
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49. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **TULIO LOYOLA FIGUEIREDO**

R2

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CEP Number: 355338207

5. ABSTRACT (REQUIRED):

Title: Retinopathy of Prematurity at Hospital São Paulo: a Epidemiological Evaluation of the Maternal Profile.

Author and Co-authors: Tulio Loyola Figueiredo, MD, Julia Harumi Iwakura, MD, Nikolý Tigani Fares, MD, Nilva S. B. Moraes, MD, Rita C. C Balda, MD. Advisor: Nikolý Tigani Fares, MD

Purpose: The present study aims to evaluate the influence of the maternal profile in a population of patients diagnosed with retinopathy of prematurity, including factors related to drug use, infectious diseases and comorbidities such as hypertension and diabetes. In this way, it will be possible to carry out an epidemiological analysis of the link between the maternal profile and the Retinopathy of Prematurity in one of the main public quaternary services in São Paulo and, providing data in order to improve the prevention and therapeutic management of the disease.

Methods: A retrospective study with the analysis of medical records of patients with retinopathy of prematurity, seen at the maternity ward of Hospital São Paulo in the last 10 years, with evaluation of clinical information regarding maternal comorbidities, such as diabetes mellitus, arterial hypertension, drug use, such as alcohol, tobacco, and others, and infectious disease, such as HIV, Syphilis, hepatitis B. It was analyzed data from mothers of patients with retinopathy of prematurity. The newborns with gestational age (GA) less than or equal to 32 weeks and / or birth weight (BW) less than 1.500 g will be included were selected to the study. Newborns who died before being submitted to fundus examination for the diagnosis of retinopathy of prematurity (ROP) were excluded.

Results: In progress.

Conclusion: In progress.

Keywords: Maternal profile; Retinopathy of Prematurity; Epidemiology

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E-Poster

50. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Vinicius Oliveira Pesquero**

R1

e-mail: viniciuspesquero@gmail.com

CEP Number: 40402004

5. ABSTRACT (REQUIRED):

Title: NASAL RETINA ARTERIOLAR MICRO-OCCLUSIONS RELATED TO FACTOR V LEIDEN MUTATION: A CASE REPORT

Author and Co-authors: PESQUERO VO, MAIA EM, MEIRELLES RL, MAIA M

Purpose: The aim of this study is to report a case of bilateral occlusion of retinal arteriolar branches related to factor V Leiden

Methods: A case report of a sixty-one-year-old male patient who presented a bilateral occlusion of arteriolar branches of the nasal retina, associated with the presence of Factor V Leiden mutation in heterozygosis.

Results: A previously asymptomatic man, presented a sudden reduction in visual acuity. Investigation led to the finding of the Factor V Leiden mutation. After performing anticoagulant therapy and retinal photocoagulation with argon laser the the patient had resolution of the condition with improvement in visual acuity.

Conclusion: Retinal arterial occlusion is an important cause of sudden visual impairment and the differential diagnosis of thrombophilia is important, especially considering the Factor V Leiden mutation as a potential etiology.

Keywords: Factor V Leiden; Retinal artery occlusion; Retina

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51. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Vinicius Ferreira Kniggendorf**

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CEP Number: 572612071

5. ABSTRACT (REQUIRED):

Title: Prospection of new anti-angiogenic drugs based on chemically modified heparins

Author and Co-authors: Vinicius Kniggendorf, Thatiane Russo, Maria Eduarda P. Sousa, Juliana Dreyfuss, Caio Regatieri

Purpose: Angiogenesis is the formation of new blood vessels from preexisting vasculature. Pathologic angiogenesis in the eye lead to severe visual impairment and affect the quality of life. The search for emerging therapies to treat neovascularization pointed chemically modified heparins (mHep) as good target, since in vitro studies demonstrated anti-angiogenic, anti-proliferative, anti-adhesive and anti-migratory effects on endothelial cells and no effects on ARPE-19 retinal cells viability. The purpose of this study is investigate the anti-angiogenic effect of chemically modified heparins (mHep) in vivo using a model of laser induced choroidal neovascularization in rats.

Methods: N-desulfated Re-N-acetylated (N-DRN) with no anti-coagulant or hemorrhagic effects was the mHEP used in vivo study. Choroidal neovascularization was induced in rats (28 eyes) with laser (532nm Green Argon Laser). Four lesions, located at the 3, 6, 9 and 12 o'clock meridians centered on the optic nerve, were created using a power of 150 mW, spot size of 100 um and duration of 100 ms. Immediately after the laser, the rats were injected with N-DRN using a microsyringe. They were assigned to experimental groups according to the dose: 100 ng/ml, 1000 ng/ml and balanced salt solution (control). Euthanasia was perform 14 days after laser, eyes were enucleated and prepared for immunofluorescence with anti-Von Willebrand factor and anti-Goat (Alexa 488).After confocal microscope analysis, the neovascular membrane was measured with ImageJ.

Results: The mean neovascular membrane area was 70.532.264 unit of length (ul) in control group, 56.667.680ul in group 100ng/ml and 58.776.730ul in group 1000ng/ml. The area analysis demonstrated a significant difference between groups, the mean difference in control versus 100ng/ml was 13.864.584ul (p=0.006), while control and 1000ng/ml was 11.755.534ul (p=0.031). The perimeter was also analyzed, the mean difference was 84560ul in control vs 100ng/ml (p=0.035), while control vs 1000ng/ml difference was 77748ul (p=0.07). No statistical difference was observed in neovascular membrane density (p=0.83)

Conclusion: In vivo studies, using choroidal neovascularization models, demonstrated that N-desulfated Re-N-acetylated mHEP is a potencial drug to treat ocular angiogenesis.

Keywords: Angiogenesis, new therapies, modified heparins

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Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

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THEME:

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Methods
Results,
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Keywords
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52. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Andressa Castelo Branco Araújo Bernal Franco**

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CEP Number: 8.020.043

5. ABSTRACT (REQUIRED):

Title: Evaluation of the effects of crosslinking thin corneas on the corneal endothelium

Author and Co-authors: Andressa Franco, Sousa LB, Matsumoto FK, Wakamatsu TH, Rodrigues P, Höfling-Lima AL, Torres-Netto EA, Hafezi

Purpose: To evaluate the effect of crosslinking in thin corneas protocol and its safety on the corneal endothelium through quantitative measures.

Methods: This is a surgical intervention and prospective study. Thirty patients will be evaluated in this study carried out in the Corneal Division of Federal University of Sao Paulo in patients with progressive keratoconus and thin corneas (stromal thickness $>200 \mu\text{m}$ - $<370 \mu\text{m}$) submitted to crosslinking. After surgical procedure, ophthalmologic examination will be done on the first, seventh postoperative days, and on the first, third, sixth and twelfth months. In addition, corneal tomography, confocal and specular microscopy, anterior segment optical coherence tomography will be carried out to collect information about endothelial cell count and morphometry, and evaluation of pachymetry.

Results: the study is scheduled to start in november of 2021

Conclusion: in progress.

Keywords: keratoconus, corneal crosslinking, thin corneas

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Results,
Conclusion
Keywords

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53. FIRST (PRESENTING) AUTHOR (REQUIRED):

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5. ABSTRACT (REQUIRED):

Title: Development of a prime editing strategy to treat mutations in the Crumbs homologue-1 (CRB1) gene

Author and Co-authors: Bruna L. da Costa, Yi-Ting Tsai, Alexander A. Sousa, Yao Li, Thiago Cabral, Rubens Belfort Jr, David R. Liu, Stephen H. Tsang, Peter M.J. Quinn

Purpose: Mutations in Crumbs homologue-1 (CRB1) gene cause chronic and disabling autosomal recessive retinal dystrophies, including Leber congenital amaurosis 8 (LCA8) and retinitis pigmentosa 12 (RP12). Currently, there are approximately 80,000 CRB1 patients worldwide and there is no available treatment to date. The mouse and human retina contain three major CRB1 isoforms, CRB1-A, CRB1-B and CRB1-C. CRB1-A and CRB1-B have predominately cell-type specific expression making the choice of gene augmentation strategy currently unclear. Gene editing with prime editing (PE), that is capable of installing all types of edits, including transitions, transversions, small deletions and insertions, may be a viable alternative for the amelioration of CRB1 associated retinal degenerations. In this study, we tested the efficacy of PE for the correction of CRB1 mutations in patient induced pluripotent stem cell (iPSC) lines.

Methods: To begin optimizing PE for correction of CRB1 mutations, 30 combinations of pegRNA and nicking sgRNA design were tested per mutation on the corresponding CRB1 patient iPSC lines using nucleofection or Stem Cell lipofectamine. Combinations showing efficient editing were taken forward for further optimization. Editing efficiency of different PE designs was evaluated by NGS or Sanger sequencing followed by ICE analysis.

Results: Based on our analysis of the CRB1 LOVD database and our cohort of CRB1 patient iPSC lines we chose to initially develop prime editing for p.(Cys948Tyr) (Most prevalent CRB1 mutation) and p.(Gly1103Arg) (8th most prevalent CRB1 mutation) mutations. We found that CRB1 patient iPSC lines were amenable to prime editing. With editing efficiencies as high as 72% dependent on the combination of pegRNA (primer binding site (PBS) and reverse transcription template (RTT) length) and nicking sgRNA for a particular mutation.

Conclusion: Prime editing is amenable for the correction of CRB1 patient mutations and achieves high editing efficiencies dependent on optimization of the pegRNA and the nicking site used. Together this work provides a platform for the testing of CRB1 therapeutic editing in CRB1 patient-derived iPSC.

Keywords: CRB1 mutations, Prime editing, Patient-derived iPSC

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Purpose
Methods
Results,
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54. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Bruna Ferrazo Marianelli**
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CEP Number: 0000.5505

5. ABSTRACT (REQUIRED):

Title: Ocular and Neurological Findings in a cohort of Brazilian patients with Spinocerebellar Ataxias.

Author and Co-authors: Bruna Ferrazo Marianelli, Flávio Moura Rezende Filho, Mariana Vallim Salles, José Luiz Pedrosa, Orlando G. Barsottini, Juliana Maria Ferraz Sallum.

Purpose: The main goal was to describe the ocular findings of Brazilian patients diagnosed with spinocerebellar ataxias (SCAs) variants. The secondary objective was to review the literature regarding the molecular mechanisms of the retinal degeneration in SCA.

Methods: We enrolled 73 patients with clinically established and molecularly confirmed SCAs (11 were SCA2, 42 were SCA3 and 20 were SCA7 patients), evaluated from 2013 up to 2017. Literature review on molecular mechanisms of the retinal degeneration in SCA was made.

Results: Spinocerebellar ataxia type 7 is an autosomal dominant neurodegenerative disorder resulting from CAG trinucleotide expansions in the ATXN7 gene. The expanded gene codifies a protein rich in polyglutamine residues, ataxin 7, which accumulates ubiquitously in the central and peripheral nervous system. This mutated protein causes cell death in neurons of the retina, brain, cerebellum, spinal cord and peripheral nerves. In animal models, ataxin-7 possibly interacts with CRX, a nuclear transcription factor predominantly expressed in photoreceptor cells with an important role as promoter of many photoreceptors genes. Mutations in CRX gene are associated with cone-rod dystrophy, and the CRX transcription dysregulation caused by ataxin-7 could play a role in the pathogenesis of SCA7 retinal degeneration. Other disturbances in transcriptional pathways involved in the maintenance of mature photoreceptors that may contribute to SCA7-R include down-regulation of NRL (neural retina leucine zipper protein) and Nr2E3 (Nuclear Receptor Subfamily 2, Group E, Member 3) and re-activation of OPTX2, STAT3 and HES5, which inhibit of the differentiation of precursors neurons in mature cones and rods.

Conclusion: SCAs are a heterogenous group of autosomal dominant inherited neurodegenerative diseases. The ocular phenotype varies among the different subtypes of the disease. SCA7 comprises a degenerative retinopathy characterized by a cone-rod dystrophy phenotype.

Keywords: spinocerebellar ataxias, retinal degeneration, optical coherence tomography

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THEME:

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Abstract should contain:

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Co-authors (maximum 6)
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Conclusion
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5. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 9416020

5. ABSTRACT (REQUIRED):

Title: Liquid biopsy for uveal melanoma patients: New Tool for Melanoma therapy and follow-up.

Author and Co-authors: Carmen Luz Pessuti, Deise Fialho Costa, Kleber S. Ribeiro, Mohamed Abdouh³, Thupten Tsering, Heloisa Nascimento, Alessandra G. Commodaro, Allexya Affonso Antunes Marcos, Ana Claudia Torrecilhas, Rubens N. Belfort, Rubens Belfort Jr and Julia Valdemarin Bu

Purpose: Uveal melanoma (UM) is the most common intraocular malignant tumor in adults and is associated with a high mortality rate due to metastatic disease. Unfortunately, no adequate biomarkers identified to monitor metastasis. Extracellular vesicles (EVs) have been extensively studied as a liquid biopsy analyte to monitor disease in cancer patients. The aim of this study was to determine the proteomic profile of EVs isolated from aqueous humor (AH), vitreous humor (VH) and plasma from patients with UM, and to compare their features to those purified from cancer-free control patients.

Methods: AH, VH and plasma were collected from 7 patients with UM after enucleation, AH and plasma were collected from 7 cancer-free patients with cataract (CAT, control group). EVs were isolated using the membrane-based affinity binding column method. Nanoparticle tracking analysis (NTA) was performed to determine the size and concentration of EVs. EV markers were assessed by immunoblotting, and the EV proteome was characterized by mass spectrometry.

Results: EVs size distribution and concentration were determined using NTA. EVs specific markers was validated by the presence of exosomal markers, CD63 and TSG101 by immunoblotting. Mean EV concentration was higher in all analytes of UM patients compared to those in the cataract group. In the UM cohort, the mean concentration of EVs was significantly lower in AH and plasma than in VH. In contrast, the mean size and size distribution of EVs was invariably identical in all analyzed analytes and in both studied groups (UM vs. CAT). Mass spectrometry analyses from the different analytes from UM patients showed the presence of EV markers, and shared proteins suggesting that circulating UM EVs are identical to in situ shed EVs. Interestingly, the recovered protein cargo contained factors involved in cell proliferation, cell survival, oncogenesis, cell invasion and metastatic niche organization.

Conclusion: EVs isolated from AH, VH, and plasma from patients with UM showed consistent profiles and support the use of blood to monitor UM patients as a non-invasive liquid biopsy. This is the first proteomic comparative study of different liquid biopsy analytes in this patient population. Other studies are needed to understand the function and role of EVs in the pathogenesis of UM.

Keywords: Uveal melanoma, Liquid biopsy, Proteomic analysis, Aqueous Humor, Vitreous Humor, Plasma, Extracellular vesicles

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FORMAT:

Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
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56. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Mateus Inácio Lemes Resende**

Fellow

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CEP Number: 4.889.900

5. ABSTRACT (REQUIRED):

Title: EVALUATION OF ADHERENCE TO TOPICAL CHEMOTHERAPY TREATMENT OF OCULAR SURFACE SQUAMOUS NEOPLASMS

Author and Co-authors: Resende MIL Fernandes AG Belfort RN Morales MC

Purpose: The ocular surface squamous neoplasms (OSSN) are the most common non-pigmented malignant tumors of the ocular surface and can be treated by topical ocular chemotherapy with eye drops. The main drops used for this treatment modality are 5-Fluoracil 1%, Mitomycin 0.02-0.04% or Interferon- α 2b. Some patients, however, do not adhere to the treatment indicated perhaps due to financial difficulties, lack of understanding of the seriousness of the case, medication side effects or even the carelessness of caregivers. Therefore, the purpose of this study is to investigate the patients' adherence to treatment of OSSN and factors associated with it.

Methods: : Patients newly diagnosed with OSSN at the Ocular Oncology division from the Department of Ophthalmology and Visual Sciences UNIFESP were invited to participate in the study. Participants were required to answer the "Morisky Medication Adherence Questionnaire (MMAS-8)" on the first visit after 2 weeks the treatment was recommended. In addition, it was collected data on possible risk factors associated with non-adherence, such as sex, age, race, sun exposure, smoking status, systemic diseases, and contact with oil, and financial distress.

Results: The study is in progress, by this moment 17 patients evaluated (58,8% male and the mean age 64,2). The mean Morisky score was 6.35 +/- 1.75 (median 7.0), ranging from 3.5 to 8.0. According to the classification criteria, 7 participants (41.2%) were classified as non-adherent to the treatment. When comparing non-adherents to adherents participants, it was noticed a higher frequency of males (71.3% vs 50.0%), mixed race (71.3% vs 30.0%), systemic disease (42.9% vs 20.0%) and financial distress (57.1% vs 20.0%), these differences however, were not statistically significant ($p > 0.005$).

Conclusion: The result indicates a need to improve the adherence to treatment of patients with indication of topical ocular chemotherapy with eye drops. This may explain the low success rate of topical chemotherapy when compared to literature abroad. The study is in progress and we aim to increase the sample size to be able to identify factor associated with the non-adherence in order to improve this scenario in our service to effectively treat these neoplasms.

Keywords: Chemotherapy, Ophthalmology, Oncology, Adherence, Conjunctival, Squamous

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57. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Mirella Millena Carmo Andrade**

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CEP Number: Waiting

5. ABSTRACT (REQUIRED):

Title: Efficacy and safety of bovine L-hydro pericardium on primary pterygium treatment.

Author and Co-authors: Mirella Millena Carmo de Andrade, Júlia Brandão de Paiva Teixeira Custódio, Luciene Barbosa de Sousa

Purpose: To evaluate the safety and efficacy of the bovine L-Hydro pericardium with 150µm thickness in the treatment of the primary pterygium

Methods: Clinical trial comparing subgroups of patients developed at the Department of Cornea and External Diseases, where 30 patients will be selected for surgical treatment of primary pterygium. The study was submitted for approval by Federal University of São Paulo Research Ethics Committee. An informed consent form will be obtained from all participants. Those patients will be randomized to treatment with conjunctival autotransplantation or bovine pericardium membrane with 150µm thickness. Will be accepted patients of both sexes, aged 18 years and over, with primary pterygium. Will be excluded patients with relapsed pterygium, symblepharon, history of ocular surface surgery. After topical anesthesia, superficial corneal dissection will be performed to remove the pterygium head. The pterygium body will receive subconjunctival injection of 2% lidocaine. Meticulous resection of the tissue will be performed leaving the sclera exposed. Then pericardium graft or conjunctival tissue, depending on the randomization, will be placed on the nude area of sclera and sutured with nylon 10-0 anchored to the episclera in two points near the limbus. The follow-up visits will be at 1st, 7th, 15th day after the procedure, and monthly until the eighth month. After surgery, patients will use ciprofloxacin plus prednisolone acetate eye drops. Post-operative complication, as external body sensation, hyperemia, pain, granuloma formation will be evaluated as well reepithelialization time, and recurrence.

Results: In progress.

Conclusion: In progress.

Keywords: Pterygium; Bovine L-Hydro pericardium

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58. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Olivia Araujo Zin**

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CEP Number: 4508968

5. ABSTRACT (REQUIRED):

Title: Novel Mutation in CRYBB3 Causing Pediatric Cataract and Microphthalmia

Author and Co-authors: Olivia A. Zin, Luiza M. Neves, Fabiana L. Motta, Dafne D. G. Horovitz, Leticia Guida, Leonardo H. F. Gomes, Daniela P. Cunha, Ana Paula S. Rodrigues, Andrea A. Zin, Juliana M. F. Sallum and Zilton F. M. Vasconcelos

Purpose: We aimed to determine the genetic cause of pediatric cataract related to microphthalmia in three members of a family with an autosomal dominant pattern of inheritance of pediatric cataract and microphthalmia phenotype using next-generation sequencing.

Methods: Clinical ophthalmological and genetic-dysmorphological evaluation were performed in three autosomal dominant family members with pediatric cataract and microphthalmia, as well as one unaffected family member. Peripheral blood was collected from all participating family members and next-generation sequencing was performed.

Results: Next-generation sequencing revealed a novel missense variant c.467G>A/p.Gly156Glu in CRYBB3 in all family members with childhood cataract. No previous descriptions of it were found in ClinVar, HGMD or Cat-Map. Not only is p.Gly156 highly conserved among several species, the variant c.467G>A/p.Gly156Glu in CRYBB3 segregates accordingly in family members. The variant in the same codon c.466G>A (p.Gly156Arg) of CRYBB3, a consolidated gene associated with pediatric cataract, has been described in other ethnic groups, such as Chinese and Turkish families. In addition, c.467G>A/p.Gly156Glu is located in a well-established functional domain (beta/gamma crystallin α Greek key α) that is also absent from consulted controls. The variant's pathogenicity is also supported by 11 of the 12 predictors, except PrimateAI. Considering the aforementioned, the variant c.467G>A/p.Gly156Glu in CRYBB3 is classified as likely pathogenic by ACMG criteria.

Conclusion: Timely pediatric cataract surgical treatment is efficient and does not depend on molecular diagnosis. Nonetheless, the latter is important since it may provide knowledge toward the development of new therapeutic possibilities. Once the causative mechanism of the cataract is identified, the degenerative progressive damage could be delayed and surgical treatment avoided. Therefore, we believe that our finding can contribute to better understand the role of the CRYBB3 protein in inherited childhood cataract associated with microphthalmia.

Keywords: ocular genetics, genotype, phenotype, pediatric cataract, congenital cataract, microphthalmia

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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(RE) RETINA AND VITREOUS

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THEME:

Infeccion
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Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

59. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 4.228.442

5. ABSTRACT (REQUIRED):

Title: Diagnostic accuracy of detecting Diabetic Retinopathy by using DART an artificial intelligence screening tool: Validation study

Author and Co-authors: Adriana L. Gois 1, Maurício Maia2, Camila Ventura3 1. DINTER ? FAV / UNIFESP from the Department of Ophthalmology, Altino Ventura Foundation, Recife, PE, Brazil and the Department of Ophthalmology and Visual Sciences, Paulista School of Medicine, Federal

Purpose: To validate the use of Artificial Intelligence (DART) software for screening Diabetic Retinopathy (DR) by analyzing retinal photographs.

Methods: Retinal images of 245 eyes from 144 patients were screened and graded by DART and by three retinal specialists, independently, using the International Clinical Diabetic Retinopathy severity scale. Kappa's agreement coefficient was the method used for the statistical analysis of the rating of the DART and the retina specialist. The sensitivity and specificity of grading were assessed and validated against the ophthalmologists' grading.

Results: DR was detected by the ophthalmologists in 52 patients and by the software in 92 patients. DART showed 100 percent sensitivity and 47,8 percent specificity for the detecting of DR. The agreement on DR grading between DART and the three retina specialist had one moderate and two strong kappa, 0.456, 0.628 and 0.644, respectively.

Conclusion: The DART showed high sensitivity for the detection of DR and can be an initial tool for DR screening. However, this is an ongoing study, a larger sample is needed to confirm the findings.

Keywords: Diabetic Retinopathy Screening, Artificial Intelligence

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60. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Aline Lutz de Araujo**

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CEP Number: 1.571.558

5. ABSTRACT (REQUIRED):

Title: Utility Index and Vision-Related Quality Of Life in Patients Awaiting Ophthalmological Care

Author and Co-authors: Aline Lutz de Araujo, Taís de Campos Moreira, Bruna Stella Zanotto, Ana Paula Beck da Silva Etges, Karen Ruschel, Rodolfo Souza da Silva, Paulo Schor, Carisi Anne Polanczyk

Purpose: To ascertain vision-related quality of life and health utility in patients awaiting access to specialist eye care by using the National Eye Institute's Visual Function Questionnaire (NEI VFQ-25).

Methods: Patients referred by their primary care providers for ophthalmological care completed the 25-item Visual Function Questionnaire (VFQ-25) before their first ophthalmological visit. From the patients' responses, we calculated the utility index (VFQ-UI). We then analyzed the correlation between the utility index and waiting time, and compared the index across demographic subgroups stratified by age, sex, and setting of care (state capital vs. other municipalities).

Results: 536 individuals participated in the study (mean age 52.9±16.6 years, 68.8% women). The mean VFQ-25 score was 70.9 ± 14.6. The median utility index VFQ-UI was 0.85 (interquartile range [IQR] 0.70-0.92, minimum 0.40, maximum 0.97). Utility correlated weakly and nonsignificantly with waiting time (-0.05, P = 0.24). It did not vary across age groups (P = 0.85) or care settings (P = 0.77). Utility was significantly lower for women (0.84, IQR 0.70-0.92) than men (0.87, IQR 0.73-0.93, P = 0.03), but the magnitude of this difference was small (Cohen's d = 0.13).

Conclusion: Patients awaiting access to ophthalmology care had a utility index of 0.85, on a scale of 0 to 1. The index was consistent across age groups and type of municipality. While access to specialty care is problematic in Brazil, utility measurements during waiting time can provide insight into patients' perspectives and support health economics analyses

Keywords: health utility, quality of life, health economics, healthcare systems

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E-Poster

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5. ABSTRACT (REQUIRED):

Title: Corneal transplantation: evolving trends and the impact of the COVID-19 pandemic

Author and Co-authors: Forseto AS, Pereira NC, Ribeiro AC, Almeida MC, Figueras-Roca M, Casaroli-Marano RP, Mehta JS, Hofling-Lima AL

Purpose: To analyze evolving trends of surgical techniques and indications of corneal transplantation (CT) at a Brazilian tertiary hospital and the impact of the COVID-19 pandemic on CT in Brazil.

Methods: Data of all patients who underwent CT at the Hospital Oftalmológico de Sorocaba (HOS) from the January 1, 2012 to the April 31, 2021 were analyzed. Trends in surgical techniques and indications were analyzed from January 1 of 2012 to December 31 of 2019. To evaluate the impact of COVID-19 pandemic on CT, baseline pre-pandemic data (from January 1, 2019, to March 31, 2020) were compared to two COVID-19 pandemic time-frames: elective CT suspension period (between April 1, 2020, and September 31, 2020) and after elective CT resumption (between October 1, 2020, and April 30, 2021). National and state CT numbers were also obtained.

Results: A total of 16,250 CTs was performed from January 1, 2012 to December 31, 2019. Keratoconus related CT statistically dropped from 41.7% among all CTs in 2012 to 25.5% in 2019 ($p < 0.0001$). A statistically significant decreasing trend was observed for PK ($p < 0.0001$) and ALK ($p < 0.0001$), while EK showed a statistically significant increasing trend ($p < 0.0001$). Among EKs, Descemet's membrane endothelial keratoplasty (DMEK) increased statistically significantly from 12.8% in 2012 to 74.4% in 2019 ($p < 0.0001$). During the COVID-19 pandemic, despite elective CT resumption after the moratorium, the monthly CT rates did not return to baseline neither at HOS (-14.7%), São Paulo state (-19.1%), nor in Brazil (-30.1%). The waiting list increased significantly regionally ($p < 0.001$) and nationally ($p < 0.001$). Among optical CTs performed at HOS after resuming elective CTS, the proportion of EKs declined from 38.2% to 30.0% ($p < 0.001$), while PKs increased from 33.2% to 39.5% ($p < 0.001$) when comparing to pre-pandemic data.

Conclusion: The present study shows relevant evolving trends in indications and preferred CT techniques in a tertiary hospital in Brazil with a marked EK increase over time. The COVID-19 pandemic caused dramatic short- and long-term impact on CT locally, regionally, and nationally. An estimated increment on monthly CT rates of approximately 34% in São Paulo state, and 91% in Brazil, is required for the CT waiting list to get back to pre-pandemic numbers over the next two years.

Keywords: keratoplasty, lamellar keratoplasty, eye bank, COVID-19

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(TU) TUMORS AND PATHOLOGY

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Imaging
Cell therapy

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Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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62. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Allexya Affonso Antunes Marcos**

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CEP Number: 895/2018

5. ABSTRACT (REQUIRED):

Title: Meibomian gland dysfunction in patients with xeroderma pigmentosum: case series report.

Author and Co-authors: Allexya Affonso Antunes Marcos, Rossen Mihaylov Hazarbossanov, Arthur Gustavo Fernandes, Melina Correa Morales, José Álvaro Pereira Gomes, Denise de Freitas, Rubens Belfort Neto.

Purpose: Determine if patients with Xeroderma Pigmentosum (XP) have meibomian gland dysfunction (MGD).

Methods: To assess the presence of MGD and the meniscus height measurement, non-contact meibography and meniscus tear height were performed using the Oculus Keratograph® 5M (Inc., Arlington, WA, USA). To evaluate the possible associations of MGD, clinical characteristics, Schirmer test, previous ocular history, Ocular Surface Disease Index© (OSDI) questionnaire, and the Dry Eye Questionnaire-5 (DEQ-5) were assessed.

Results: Twenty-seven patients were included in this study. The mean age was 30.0 years (ranging from 8-65), 74.1% were female, 74.1% were fair-skinned, and 59.3% had not undergone previous treatment for eye cancer. MGD was observed in 56.0% of the right eye and 60.0% of the left eye. These percentages were 18.2% and 28.6% for the upper eyelid and 37.8% and 31.4% for the lower eyelid, respectively, for the right and left eyes. Seventeen patients had a positive OSDI, and 19 patients had a positive DEQ5. The mean meniscus height measurement in the right eye was $0,33 \pm 0,18$ and $0,35 \pm 0,22$ for the left eye for a normal of average 0.215 mm. Regarding Schirmer's findings, 78.6% of patients had average values in both eyes. Risk factors were female patients, fair-skinned, older age, previous treatment for eye cancer, and lower eyelid involvement.

Conclusion: Our sample showed up to 60% MGD with clinical repercussions. This is the first time this finding has been reported in the literature to the best of our knowledge.

Keywords: Xeroderma Pigmentosum; Eye; Dry Eye Syndrome; Meibomian Gland Dysfunction; Case Report.

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(RE) RETINA AND VITREOUS

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THEME:

Infeccion
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Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

63. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 29057600

5. ABSTRACT (REQUIRED):

Title: RETINAL NERVE FIBER AND GANGLION CELL RETINAL LAYER CHANGES ON OPTICAL COHERENCE TOMOGRAPHY AFTER RIPE TREATMENT FOR TUBERCULOSIS

Author and Co-authors: Brunella Maria Pavan Taffner, Flávia de Azevedo Fowler, Luiz Guilherme Ito da Cruz, Carolynne Cardoso Nawa, Marcia Telma Savioli, Denise Silva Rodrigues, Rubens Belfort Jr., Octaviano Magalhães

Purpose: To observe alterations in the retinal nerve fiber layer (RNFL) and ganglion cell layer (GCL) secondary to rifampicin, isoniazid, pyrimethamine, ethambutol (RIPE) treatment, and analyze the relation between ethambutol dose/weight ratio and GCL thickness in patients with tuberculosis.

Methods: Patients undergoing treatment for TB with RIPE were recruited from the TB service of the Federal University of São Paulo from March 2019 to December 2020. All patients provided a medical history that included a description of their daily habits, past medical history, medication use, and history of color blindness. After clinical evaluation, OCT Triton (Topcon, Tokyo, Japan) were performed monthly during and after treatment.

Results: Twenty-five patients were included. Significant decreases occurred: lower (P=0.0101), lower-nasal (P=0.0211), and upper (P=0.0418) GCL in month 2 compared to month 1. Every 1-mg increase in the ethambutol dose/weight caused all GCL sector decreases post treatment: lower, 1.87 microns (P=0.001), lower-nasal, 1.58 microns (P=0.001), upper-nasal, 1.64 microns (P=0.001), upper, 2.18 microns (P=0.001), upper-temporal, 1.15 microns (P=0.001), and lower-temporal, 0.96 micron (P=0.010). RNFL quadrants decreased post-treatment: inferior (P=0.0001), nasal (P=0.0041), superior (P<0.0001), and temporal (P<0.0001).

Conclusion: The GCL decreased significantly in month 2 and RNFL after RIPE treatment. The ethambutol dose/weight ratio was inversely proportional to the GCL thickness after treatment.

Keywords: retina, optical coherence tomography, campimetry, tuberculosis, toxicity.

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64. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Cristina . Cagliari**

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CEP Number: 33328

5. ABSTRACT (REQUIRED):

Title: Scleral Contact Lenses in Healthy Eyes: Could we improve visual acting? A Pilot Study.

Author and Co-authors: Cristina Cagliari, Paulo Schor, Emanuela Gonçalves, Mariana Lima de Souza, Felipe Berg

Purpose: Assessment of visual performance of healthy eyes during scleral contact lens use.

Methods: In the present pilot study, 7 participants were recruited. All of them manifested an ophthalmologic exam within the normal range, including a visual acuity of 0.0 logMar in the Snellen table and J1 in the Jaeger score with or without correction. Patients with alterations in physical examination and corneal topography were excluded. The contact lenses used were supplied by Mediphacos. Participants are attending 4 meetings in different situations to take the tests: A)First meeting: Uncorrected and corrected visual acuity, Dynamic refraction, Corneal topography, Anterior and posterior biomicroscopy, Adaptation of the scleral contact lens, according to the adaptation protocol established by the Department of Ophthalmology and Visual Sciences of EPM, Custom lens order for each participant. B)Second Meeting: participants will pick up their lenses and will be re-evaluated to confirm the good fit and visual acuity promoted by them. At the same meeting, reading speed tests (MNREAD-P) will be carried out without their lenses, but with the appropriate correction of ametropia. C)Third and fourth meeting: after approximately 30 and 60 days of LCE use, will be submitted to new reading tests and also the reading of 2 texts developed and used in the speech therapy sector at the UNIFESP. In the 3rd meeting it will be applied to volunteers without the use of their contact lenses and in the 4th with the use of them. CLDEQ-8 questionnaire will be applied at the end of the fourth meeting.

Results: in progress

Conclusion: in progress

Keywords: scleral contact lenses, cornea, refraction, reading speed

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65. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Dante Akira Kondo Kuroiwa**

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5. ABSTRACT (REQUIRED):

Title: Scleral buckle in a university referral center

Author and Co-authors: Dante Akira Kondo Kuroiwa MD Luciana Arrais MD Zaira Fernanda Martinho Nicolau MD Lucas Zago Ribeiro MD

Purpose: This study aims to evaluate visual and anatomical outcomes of macula-off rhegmatogenous retinal detachment (RRD) successfully repaired with scleral buckle (SB) at a single university referral center.

Methods: This study was a prospective case series. We included patients with the diagnosis of macula-off RRD that underwent successful surgical repair with SB at Federal University of São Paulo. Presented characteristics including visual acuity before and 3 months after the surgery, extension of the RRD, number and location of retinal tear, surgical technique characteristics were recorded in an Excel table of statistical analysis later. 3 months postoperative optical coherence tomography (OCT), OCT angiography and microperimetry were performed. Patients were excluded from the study if they had previous retinal surgery, history of trauma, endophthalmitis or uveitis.

Results: We included so far 7 patients with the diagnosis of RRD that underwent successful surgical repair with SB at Federal University of São Paulo. We are performing statistical analysis of the data including epidemiology, visual and anatomical outcomes, and surgical intervention characteristics.

Conclusion: We expect to correlate epidemiological data found in these patients with surgical technique performed, anatomical and functional outcomes at 3 months postoperative, at a single university referral center.

Keywords: scleral buckle, retinal detachment, optical coherence tomography, microperimetry

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66. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 18048050

5. ABSTRACT (REQUIRED):

Title: Artificial Intelligence Mapping of Structure to Function in Glaucoma

Author and Co-authors: Eduardo B. Mariottoni, Shounak Datta, David Dov, Alessandro A. Jammal, Samuel I. Berchuck, Ivan M. Tavares, Lawrence Carin, and Felipe A. Medeiros

Purpose: To develop an artificial intelligence (AI)-based structure-function (SF) map relating retinal nerve fiber layer (RNFL) damage on spectral domain optical coherence tomography (SDOCT) to functional loss on standard automated perimetry (SAP).

Methods: The study included 26,499 pairs of SAP and SDOCT from 15,173 eyes of 8878 patients with glaucoma or suspected of having the disease extracted from the Duke Glaucoma Registry. The data set was randomly divided at the patient level in training and test sets. A convolutional neural network (CNN) was initially trained and validated to predict the 52 sensitivity threshold points of the 24-2 SAP from the 768 RNFL thickness points of the SDOCT peripapillary scan. Simulated localized RNFL defects of varied locations and depths were created by modifying the normal average peripapillary RNFL profile. The simulated profiles were then fed to the previously trained CNN, and the topographic SF relationships between structural defects and SAP functional losses were investigated.

Results: The CNN predictions had an average correlation coefficient of 0.60 ($P < 0.001$) with the measured values from SAP and a mean absolute error of 4.25 dB. Simulated RNFL defects led to well-defined arcuate or paracentral visual field losses in the opposite hemifield, which varied according to the location and depth of the simulations.

Conclusion: A CNN was capable of predicting SAP sensitivity thresholds from SDOCT RNFL thickness measurements and generate an SF map from simulated defects. Translational Relevance: AI-based SF map improves the understanding of how SDOCT losses translate into detectable SAP damage.

Keywords: Glaucoma, visual field, SDOCT, deep learning, artificial intelligence

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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(RS) REFRACTIVE SURGERY

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THEME:

Infeccion
Inflammation
Angiogenesis
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Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
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67. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 52060165

5. ABSTRACT (REQUIRED):

Title: TIME AS A DETERMINING FUNCTION IN THE INDICATION AND EVOLUTION OF EYE SURGERY: LASIK EVALUATION FOR REDUCTION OF HYPERMETROPIA AND INDUCTION OF MYOPIA AS A TREATMENT FOR PRESBYOPIA

Author and Co-authors: PAULO SCHOR ERMANO DE MELO ALVES BIANCA ARRUDA MANCHESTER DE QUEIROGA

Purpose: Analyze the importance of temporality in the decision of the patient who undergoes LASIK to correct presbyopia and how the results achieved modify the individual's relationship with the passage of time

Methods: Qualitative research whose main objective is to listen to the patient through semi-structured interviews, with open questions and encouraging them to report their experience without interruption or induction. We selected previously presbyopic individuals, or presbyopic individuals with associated hyperopia, some satisfied with the procedure, others still adapting and some who, even after a long time, are still not fully adapted, some of them having undergone retreatment - early or late, and others without that need. All interviews were recorded and transcribed. After transcription, the data was manually coded using the ATLAS.ti Qualitative Data Analysis Software. A detailed analysis of the patient's voice of the lived experience is underway, with the aim of proving the raised hypotheses.

Results: We interviewed, between 11/22/2019 and 05/02/2020, 17 patients between 48 and 60 years old, 14 over 50. There were a total of 9 women and 8 men, 8 in-person interviews and 9 by video. Preliminary results suggest that presbyopia is strongly associated with aging, glasses are seen as symbols of disability and are extremely uncomfortable and addictive. Interviews during the pandemic also highlighted hygiene as one of the reasons for the surgery. Aesthetics stood out mainly in the female gender. The adaptation difficulty is much greater at night and in the first month. The fear of surgery is disproportionate to the real risk, as the eyes are seen as something sacred, as reported in some mythological tales. The satisfaction or not with the procedure is related to the different types of personality, analyzed through the main traits described in the literature.

Conclusion: Temporality is a key factor in the decision to undergo a surgical procedure for presbyopia. The independence of glasses in middle age is liberating, generating well-being, improving self-esteem and delaying the feeling of aging. Sacrifice is fully acceptable in most people, but the individual's main personality trait must be taken into account when indicating surgery, and should be avoided in those where neuroticism is predominant

Keywords: LASIK, presbyopia, hyperopia, hypermetropia, temporality, aging, monovision, glasses

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED): Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

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THEME:

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FORMAT:

Abstract should contain:

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Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords

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68. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 2.287.094

5. ABSTRACT (REQUIRED):

Title: Meibomian Health Score: A simple grading system for isotretinoin induced meibography alterations

Author and Co-authors: Fabio Mendonca Xavier Andrade, MD Flavio Hirai, PhD Tais Hitomi Wakamatsu, PhD Rebecca Ignacio Subira Medina, MD Denise de Freitas, PhD

Purpose: To develop a simple, subjective and reliable grading scale for isotretinoin induced meibography alterations.

Methods: After analyzing meibography images from systemic isotretinoin users, a grading scale was proposed and titled "Meibography Health Score". The score ranged from 1 to 3 with decreasing gland's reflectivity and identifiable limits. Eleven medical professionals were asked to grade ten meibography images using the proposed scales and were divided into three categories: (A) ophthalmologists experienced with meibography, (B) ophthalmologists not experienced with meibography and (C) radiologists. Kappa statistic was calculated to test inter-rater reliability.

Results: General kappa was approximately 0.64. Group A, B and C kappa scores were 0.78, 0.59 and 0.90, respectively. Grade 2 had the lowest kappa results (A, B and C: 0.62 / 0.35 / 0.82) and grade 3 the highest (A, B and C: 0.78 / 0.90 / 1.0). Group C showed the highest kappa results and group B the lowest.

Conclusion: The Meibomian Health Score showed good inter-rater reliability results, especially in more severe cases.

Keywords: isotretinoin ? meibography ? meibomian gland dysfunction

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(RE) RETINA AND VITREOUS

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69. FIRST (PRESENTING) AUTHOR (REQUIRED):

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R3

e-mail: oda.epm@gmail.com

CEP Number: NA

5. ABSTRACT (REQUIRED):

Title: Subfoveal choroidal thickness in pediatric patients with inflammatory bowel disease

Author and Co-authors: Franklin Kuraoka Od, Guilherme Havir Bufarah, Nilva Simeren Bueno de Moraes Amborgini

Purpose: Inflammatory bowel diseases (IBD), mainly divided into Chron's disease (CD) and Ulcerative colitis (UC), are chronic lifelong conditions that represent an important cause of burden on the life of pediatric population with complications that range from growth limitation and nutritional deficits to school absence and depression. Prevalence data in the Brazilian population is scarce, yet epidemiology studies have demonstrated rising incidences of pediatric IBD (especially CD) over the last decades in different continents. Considered systemic diseases, IBD primarily present with gastrointestinal symptoms, but extraintestinal manifestations are well established, including peripheral arthritis, aphthous stomatitis and uveitis. The purpose of the present study is to compare the subfoveal choroidal thickness in pediatric patients with IBD in remission and during active disease.

Methods: 24 eyes from 12 patients with IBD of the pediatric gastroenterology of the Paulista Medical School (EPM) / Federal University of São Paulo (UNIFESP) underwent a full ophthalmological evaluation including visual acuity, intraocular pressure, anterior biomicroscopy and binocular indirect funduscopy and fundus biomicroscopy. 3 eyes were excluded from the study because of segmentation errors in the OCT. 10 participants without disease were selected for control group. Fundus eye photography and optical coherence tomography (OCT) and optical coherence tomography angiography (OCTA) were performed with Topcon Triton swept source OCT. Automated measurement of the foveal choroidal thickness was taken using the Topcon DRI Triton OCT-1 software. Patients were classified between active disease or in remission according to clinical features, fecal calprotectin levels and colonoscopy results.

Results: Participants had a mean age of 13.66 years and included 9 males (75%) and 3 females (25%). 8 participants (66.66%) had Crohn's Disease diagnosis, 3 (25%) had Ulcerative Colitis and 1 patient (8.33%) still had undetermined IBD. 8 of the participants (66.66%) had the disease in remission and 4 patients (33.33%) presented active intestinal disease.

Conclusion: Still in progress. Subfoveal choroidal thickness measurements of patients without disease are still being taken.

Keywords: Pediatric inflammatory bowel disease; Choroidal thickness; Retina; Optic coherence tomography

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Co-authors (maximum 6)
Purpose
Methods
Results,
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70. FIRST (PRESENTING) AUTHOR (REQUIRED):

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Fellow

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CEP Number: 18048130

5. ABSTRACT (REQUIRED):

Title: Visual pathway function assessed by electrophysiology in Fabry's disease: a case report

Author and Co-authors: Glaiielli P S M Assis, Sung S Watanabe, Daniel M Rocha, Paula Y Sacai, Solange R Salomão, Adriana Berezovsky

Purpose: Fabry disease (FD) is a multiorgan X-linked condition characterized by a deficiency of the lysosomal enzyme alpha-galactosidase A, resulting in a progressive deposit of sphingolipids. Affected patients can present cornea verticillate, vessel tortuosity and cataract. Retinal hyperreflective foci (HRF) was recently described as a biomarker of FD. Our purpose was to report electrophysiological findings in a FD case with HRF.

Methods: A 41-year-old male diagnosed with FD, complaining of progressive bilateral visual acuity decrease, restriction on visual fields and nyctalopia was referred to the Clinical Electrophysiology of Vision Laboratory at UNIFESP for assessment. Previous history of three brain strokes and renal failure with severe blood hypertension was noted. Visual acuity was 20/125 in the right eye (RE) and 20/200 in the left eye (LE). Electrophysiological tests included transient pattern-reversal (PR-VEP) and flash visually evoked potentials (FVEP), full-field electroretinogram (ff-ERG) and multifocal electroretinograms (mfERG). Multimodal assessment including retinography, retinal fluorescein angiography, fundus autofluorescence and optical coherence tomography (OCT) were performed.

Results: Scotopic ff-ERG was preserved in RE and delayed in LE. Delayed photopic ff-ERG response was observed and suggests cone system dysfunction in both eyes. Macular function with mfERG was reduced bilaterally, more severely in LE. Reduced and delayed PR-VEP responses and reduced amplitude of FVEP were found in both eyes. Vascular tortuosity in retinography and fluorescein angiography were detected in both eyes. Fundus autofluorescence was unremarkable bilaterally. HRF was observed in OCT within the inner retinal layers (ganglion cell layer, inner plexiform layer, inner nuclear layer, outer plexiform layer) possibly correlated with FD. Reduced peripapillary nerve fiber layers and macular ganglion cell thickness were also noted in LE.

Conclusion: HRF is the new finding related to FD and our results suggest retinal dysfunction related with retinal deposits. Our patient presented structural and functional abnormalities of ganglion cells and these results may be a feature of FD.

Keywords: Electrophysiology; Fabry disease; retinal hyperreflective foci

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THEME:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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71. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Guilherme - Niciunovas**

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CEP Number: 4001130

5. ABSTRACT (REQUIRED):

Title: Self-sealing ocular trauma with car fragment: a case report.

Author and Co-authors: Guilherme Niciunovas, Guilherme Havir Bufarah, Licia Matieli.

Purpose: To report an uncommon and unexpected mechanism of trauma from the very beginning of it to its conclusion and proper treatment. We performed ultrasound imaging along with tomography and took a set of photographs to capture the pathway of the metallic foreign body and the tissues it injured from diverse angles and using different techniques.

Methods: A 30-year-old man presented to our emergency room on 10 September 2021 at 1:30pm, with the chief complaint of trauma to his right eye by an unknown car fragment occurring at approximately 11a.m. We collected the complete anamnesis, performed the necessary complementary exams and scheduled the patient surgery in our retina care center.

Results: In our study, we found out that the foreign body was capable of perforating the cornea in a self-sealing fashion, ciliary body, lens and vitreo space where it stopped and remained still. We were able to document the complete pathway of the lesion and later on, we performed successful surgery (vitrectomy and phacoemulsification) to treat the condition.

Conclusion: Eye trauma is a leading cause of vision loss and disability worldwide. Our study is aimed to increase awareness and report through unique imaging techniques the pathway of an otherwise considered harmless foreign body in its way through the eye tissues, posing a great potential of infection, vision loss, quality of life impairment and adverse economical impacts

Keywords: self-sealing trauma, foreign body, traumatic cataract, vitreoretinal surgery, ultrasound, tomography

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(RE) RETINA AND VITREOUS

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Abstract should contain:

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Methods
Results,
Conclusion
Keywords
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72. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **HELEN NAZARETH VELOSO DOS SANTOS**

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CEP Number: 0698/2020

5. ABSTRACT (REQUIRED):

Title: Detection of diabetic macular edema and prediction of OCT measures from color fundus photographs using deep learning

Author and Co-authors: Helen Nazareth Veloso dos Santos, Luis Filipe Nakayama, Fernando Korn Malerbi, Caio Vinicius Saito Regatieri

Purpose: To develop a deep learning algorithm using optical coherence tomography (OCT) data to identify diabetic macular edema and correlate measures of macular thickening from color fundus photographs (CFP)

Methods: Retrospective analysis on 3 dataset of CFPs and its respective OCT macular scans of patients with diabetes type 1 or 2. The dataset will be collected from the Retina Department of São Paulo Hospital/Federal University of São Paulo (São Paulo, SP, Brazil) UPO (Paulista Unit of Ophthalmology, São Paulo, SP, Brazil) and IPEPO (Instituto da Visão) from January 2018 to January 2021. A total of at least 3000 matching images are estimated. First, the CFP and the OCT scans for each patient will be completely anonymized. Then, the quality assessment of the CFPs and OCT scans will be evaluated by 2 retinal specialists. Images with low quality will be excluded. In order to detect the presence of clinically significant macular thickening (MT), the images will be separated into 2 groups according to the thickness of the central subfield thickness (CST): up to 250um (subjects with normal MT) and more than 400um (reference value used by the National Institute of Health and Care Excellence ? NICE- in the United Kingdom to point out cases of severe macular edema submitted to treatment with ranibizumab). A deep learning model, specifically a deep convolutional neural network (DCNN), trained by a transfer-learning cascade will be employed. The dataset will be used as follows: 60% for training, 20% for testing and 20% for validation. The area under the receiver operator characteristic curve and the 95% confidence intervals will be used to assess the performance of the deep learning algorithm.

Results: In progress.

Conclusion: In progress.

Keywords: diabetic macular edema, deep learning, artificial intelligence, public health ophthalmology

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Results,
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73. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **IZABELA NEGRAO FROTA DE ALMEIDA**

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CEP Number: 66063060

5. ABSTRACT (REQUIRED):

Title: A COMPARISON OF VASCULAR PARAMETERS AND ENDOTHELIN 1 MEASUREMENTS BETWEEN PATIENTS WITH LOW AND HIGH-TENSION OPTIC DISC HEMORRHAGES

Author and Co-authors: Izabela N F Almeida, Elise Taniguchi, Cecília Victoria Agapito Tito, Diego Torres Dias, Michele Ushida, Syril Dorairaj, Robert Ritch, Sérgio H. Teixeira, Cristiane Kayser, Augusto Paranhos Jr, Carolina P B Gracitelli, Tiago Santos Prata.

Purpose: To compare vascular function-related parameters, as assessed by endothelin-1 (ET-1) blood levels measurements, Laser Doppler Imaging (LDI) of distal phalanx, and nailfold capillaroscopy (NC), between open-angle glaucoma (OAG) patients with low (LTDH) and high-tension optic disc hemorrhages (HTDH).

Methods: In this prospective study, we examined consecutive OAG patients for the presence of optic disc hemorrhage (DH). Patients were classified LTDH if presenting an IOP < 16 mmHg at the time of DH detection. Those with an IOP ≥ 16 mmHg were classified as HTDH. Clinical and ocular data from the time of DH detection were collected and compared between patients with LTDH and HTDH. In addition, ET-1 blood concentration, LDI (before and after 1, 10 and 20 minutes after cold stimulation) and NC findings were evaluated.

Results: Thirty-three patients were included (mean age, 62±13 years). Mean IOP was 12±2 in the LTDH group and 19±3 in the HTDH group (p<0.01). There was no significant difference in demographic and ocular parameters between groups. Regarding ET-1 blood level, it was 65% higher in the LTDH group (2.27±1.46) compared to the HTDH (1.37±0.57, p=0.03). In addition, there was a significant negative correlation between ET-1 blood concentration and IOP at the time of DH detection (patients with DH in the low teens presented higher ET-1 levels, r=-0.45, p=0.02). Blood flow measurement values in LTDH patients were lower than those observed in patients with HTDH 10 minutes after cold stimulus (233±109 vs 382±55, p<0.01), which persisted lower at 20 minutes (249±116 vs 397±47, p<0.01). Although NC abnormalities were documented in over 80% of the cases in both groups, their prevalence did not differ significantly (p=0.73).

Conclusion: Patients developing DH with lower IOPs have higher ET-1 blood levels and more peripheral vascular dysfunction (than those with higher IOPs), as estimated by LDI. These findings suggest that distinct underlying mechanisms maybe involved in patients developing DH with different IOP ranges.

Keywords: Open angle glaucoma; disk hemorrhage; vascular evaluation; nailfold capillaroscopy; Laser Doppler Imaging; Endothelin - 1

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(CO) CORNEA AND EXTERNAL DISEASE

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(TR) TRAUMA
(TU) TUMORS AND PATHOLOGY
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THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

74. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **José Arthur Pinto Milhomens Filho**

R4

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CEP Number: 0094/2020

5. ABSTRACT (REQUIRED):

Title: Evaluation of keratoconus detection from elevation, topography and pachymetry raw data using machine learning

Author and Co-authors: Jose Arthur Pinto Milhomens Filho, Alexandru Lavric, Ali Al-Timemy, Zaid Alyasseri, Siamak Yousefi, Rossen M. Hazarbassanov

Purpose: To assess the performance of machine learning algorithms in detecting keratoconus (KCN) from corneal parameters in a tomography dataset, such as elevation, topography, and pachymetry.

Methods: We developed numerous machine learning models to detect keratoconus from corneal parameters. Elevation, topography, and pachymetry dataset were obtained from 5881 eyes of 2800 patients in Brazil using a high-resolution rotating Scheimpflug camera system for anterior segment analysis (Pentacam® HR ? Oculus, Optikgeräte GmbH). The accuracy of models was computed using each dataset of elevation, topography, and pachymetry parameters separately. 10-fold cross-validation of the area under the receiver operating characteristic curve (AUC) was used to evaluate the accuracy of different models. Thus, 3 independent datasets were created. Each of them was evaluated, and performance evaluation related to KCN detection was observed.

Results: A total of 1726 eyes were normal, and 4155 eyes were diagnosed as KCN. Figure 1 presents the distribution of the anterior cornea curvature radius (ACCR) of the cornea parameter versus the mean radius of cornea curvature (MRCC) in the 7 to 9 mm area parameter of normal versus KCN eyes. The cubic support vector machine (SVM) outperformed all other machine learning classifiers with an AUC of 1 for detecting KCN using elevation parameters only (Figure 2, ROC on left and confusion matrix on the right panel). The highest accuracy of classifiers for detecting KCN using pachymetry only and topography only parameters were 96.6% and 95.2%, respectively.

Conclusion: The results suggest that the cubic support vector machine (SVM) using elevation parameters provide the highest accuracy in detecting normal from KCN cases. This algorithm might be of help for detecting KCN patients in ophthalmological clinical sets.

Keywords: machine learning; keratoconus; corneal tomography

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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Results,
Conclusion
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75. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Julia de Lima Farah**

PGO

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CEP Number: REB190413

5. ABSTRACT (REQUIRED):

Title: Splint Study: PNEUMATIC RETINOPEXY BEFORE VITRECTOMY FOR MACULA OFF RETINAL DETACHMENT

Author and Co-authors: JULIA FARAH, EDUARDO B. RODRIGUES, RAJAN NIRWAN, NATALIA FIGUEIREDO, GEOFF WILLIAMS, AMIN KHERANI

Purpose: To assess if pneumatic retinopexy and face down positioning before a vitrectomy in patients with macula off rhegmatogenous retinal detachment facilitates surgical technique.

Methods: Prospective randomized trial between 2019 and 2022 Inclusion criteria: patients over 18 years old with macula off retinal detachment with 10 days or less of central vision loss. After being enrolled in the study, vitrectomy was scheduled as per standard of care. Patients were randomized in 2 groups: group I adjuvant pneumatic (intravitreal gas injection) prior to vitrectomy and face down positioning and group II standard of care head posturing prior to vitrectomy. Surgeons answered a questionnaire 1) if gas bubble made the surgery easier, harder or no different 2) if gas bubble turned the macula off RD into a macula on RD 3) if perfluorcarbon liquid for endodrainage was used 4) if any complication was encountered. Functional outcomes will be measured at 3, 6 and 12 months post-operatively with best corrected visual acuity and assessment of metamorphopsia.

Results: Seventeen patients were enrolled in the study: Nine patients in group I and eight patients in group II. From 9 patients included in group I, 6 had easier surgical technique due to the pre-operative gas bubble injection, 7 had macula on retinal detachment at the time of the surgery, and 4 did not need to use perfluorcarbon liquid for endodrainage (compared to all participants from group II that needed perfluorcarbon liquid). No complications were encountered. Group I (n=9) Level of Difficulty (surgeon impression): Pneumatic made surgery easier, n: 6 Pneumatic made surgery no different, n: 3 Pneumatic made surgery harder, n: 0 Macula on or off at the time of surgery: Pneumatic turned macula on, n: 7 Pneumatic did not change the status (macula off), n: 2 No need for Perfluorcarbon liquid: 4

Conclusion: This study shows that pre-operative pneumatic (intravitreal gas injection) is safe, facilitates surgical technique, optimizes retinal reattachment and reduces the need of perfluorcarbon liquid, consequently reducing the cost of vitrectomy. Future perspectives are to compare functional outcomes between the groups with a greater number of patients.

Keywords: Pneumatic retinopexy, rhegmatogenous retinal detachment, pars plana vitrectomy

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76. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Lidia Guedes Bezerra**

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CEP Number: 4355653

5. ABSTRACT (REQUIRED):

Title: QUALITY OF LIFE IN PATIENTS ENUCLEATED DUE TO UVEAL MELANOMA.

Author and Co-authors: Bezerra, LG, Fernandes, AG, Morales, MC, Belfort, RN

Purpose: Understanding the psychological and social welfare aspects of patients post treatment can be helpful to establish new support services. The purpose of this study was to investigate the quality of life (QOL) of patients enucleated due to uveal melanoma.

Methods: Cross-sectional study performed at the Ocular Oncology division from the Federal University of Sao Paulo (UNIFESP). Patients with history of enucleation due to uveal melanoma between 2018 and 2020 were invited to answer the questionnaires NEI-VFQ 25 (National Eye Institute Visual Function Questionnaire) and HADS (Hospital Anxiety and Depression Scale). The results were analyzed in terms of sex, age, time since surgery and use of prosthesis.

Results: 30 patients (60% female) with mean age 53.66 ± 13.42 years old were selected. Most participants (60.0%) had at least 6 months since surgery and 76.7% were prosthesis users. The overall QOL assessed by VFQ-25 was 69.2%, ranging from 24.9% to 94.2%. None of the co-variables were statistically associated to the overall QOL. Patients in use of prosthesis showed a QOL on Social Functioning 28% higher than those without prosthesis ($p=0.033$), a QOL on General Health 29% higher than those without prosthesis ($p=0.021$), and a QOL on Dependency 34% higher than those without prosthesis ($p=0.012$). When evaluating HADS questionnaire, only two female participants, one with surgery time less than 6 months and without use of prosthesis, and other with surgery time more than 6 months and use of prosthesis, were classified as having anxiety and depression.

Conclusion: Over the last 25 years, 18 papers have addressed this issue, using 26 different scales, interviews, and questionnaires. In our study, we found a good quality of life of the evaluated patients and that better results were associated with prosthesis use which provides, in addition to an adequate aesthetic result, greater functionality.

Keywords: quality of life, questionnaire, uveal melanoma

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THEME:

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Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
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E-Poster

77. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Lucas Zago Ribeiro**

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CEP Number: 0790/2021

5. ABSTRACT (REQUIRED):

Title: Automated machine learning model for fundus Image classification by health-care professionals with no coding experience

Author and Co-authors: Lucas Zago Ribeiro, Luis F. Nakayama, Fernando Malerbi, Caio V. Regatieri

Purpose: We aimed to assess the feasibility of machine learning (ML) algorithm design to predict normality, screening of diabetic retinopathy, and laterality of fundus images.

Methods: We used a public consolidated diabetic retinopathy dataset (Messidor-2) containing 1,744 diabetic ICDR graded fundus images (NRDR 1,279, RDR 465) , and our own UNIFESP Brazilian dataset containing 5,857 general (1,069 diabetic graded, NRDR 875, RDR 194) fundus images. The algorithm were created using Google AutoML Vision platform, by single ophthalmologist with no coding experience. Images were allocated to the training, validation, and test datasets (80%, 10%, and 10%, respectively).

Results: Performance were high from binary classification tasks using 5,857 images from UNIFESP dataset, in such as grading laterality (AUC 0.989, recall 96.93%, precision 96.93%), and normality (AUC 0.893, recall 80.89%, precision 80.89%). The comparison of performance using different referable diabetic retinopathy datasets was: ICDR Messidor-2 dataset (AUC 0.906, recall 86.78%, precision 86.78%), ICDR UNIFESP dataset (AUC 0.97, recall 90.57%, precision 90.57%), and from Scottish UNIFESP (AUC 0.994, recall 95,28%, precision 95,28%).

Conclusion: In conclusion, the development of ML models for the prediction of binary grades on fundus images by ophthalmologists without coding experience is feasible, and comparable with the accuracy of traditional machine learning algorithms. The comparison of similar size public, and UNIFESP dataset, showed similar results but higher using our datasets, specially using Scottish classification for diabetic retinopathy. Funding: Google Cloud Research Credits Grant

Keywords: diabetic retinopathy; machine learning; autumn;

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Cell therapy

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Abstract should contain:

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Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
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78. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Luiz Filipe Adami Lucatto**

PG1

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CEP Number: 4643566

5. ABSTRACT (REQUIRED):

Title: Use of surgical videos on social media among retina surgeons: results of a vitreoretinal specialist survey

Author and Co-authors: Luiz Filipe Lucatto, Gabriel Barbosa, Juliana Prazeres, Emmerson Badaró, Ricardo Guerra, Luiz Lima, Eduardo Rodrigues

Purpose: To assess and interpret how vitreoretinal surgeons use surgical videos available on social media as complementary learning tools to improve, review, or update their abilities, considering their different expertise levels.

Methods: In this cross-sectional survey, an online survey was sent to vitreoretinal specialists and fellows.

Results: This survey included 258 participants of whom 53.88% had been in practice for more than 10 years (senior surgeons), 29.07% between 4 and 10 years (young surgeons), and 17.05% for less than 3 years (surgeons in training). Retinal surgical videos on social media were used by 98.84% of the participants (95% confidence interval, 97.52%- 100%). The most common source of access to videos was YouTube (91%), and the group of surgeons with fewer than 3 years' experience watched more videos on YouTube compared to senior surgeons. Watching surgical videos on social media was the preferred method when preparing for a procedure for 49.80% of participants versus 26.27% who preferred to "consult colleagues," and 18.82% who preferred to seek information in scientific articles. The "image quality" (88%) and presence of "surgical tips and tricks" (85%) were the characteristics of the videos valued most by participants.

Conclusion: The use of surgical videos may be effective in acquiring strategic skills, such as decision-making, surgical planning, and situational awareness. Its application as a teaching aid was used by retina surgeons regardless of their level of expertise, despite being relatively more valuable to surgeons in training or with fewer than 10 years' experience.

Keywords: Surgical Learning; Social Media; E-learning; Vitreoretinal Surgery

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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Purpose
Methods
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79. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Mariana Chiba Ikeda**

R3

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CEP Number: 11.540.089

5. ABSTRACT (REQUIRED):

Title: Eye Tracker Reading Patterns in Glaucoma Patients versus Controls Patients

Author and Co-authors: Ikeda, MC, Nakamura VPL, Bando AH, Hamada KU, Messias AMV, Teixeira SH, Prata TS, Paranhos A, Gracitelli CPB

Purpose: To evaluate reading performance patterns (through saccades, fixation and visual field) in glaucoma patients versus control using the eye tracker. In addition, to determine the influence of cognitive level and contrast sensitivity in reading performance in glaucoma patients.

Methods: This is a prospective case control study including 40 glaucoma patients and 19 control patients. All patients agreed to the Free Prior Informed Consent Form. Demographic and systemic information was obtained. Ophthalmologic examination was performed on each subject. All patients had at least 0.5 logMAR visual acuity (VA) on the left eye. Glaucoma was defined with at least two repeatable Standard Automated Perimetry (SAP Humphrey®). Cognition was assessed through MoCA® (Montreal Cognitive Assessment). Contrast sensitivity was tested through Freiburg Visual Acuity & Contrast Test®. Eye Tracker data were extracted using the Tobii Studio® appurtenance software. For each patient, 3 parameters were evaluated: 1. reading duration (total time of fixation/characters), 2. Fixation (fixation/characters), 3. Mean fixation duration (total time of fixation/number of fixation). Participants went through a reading performance test based on the iPad application of the Minnesota Low Vision Reading Test (MNRead pt®), translated and validated in Portuguese on the left eye. Luminance of the room and screen parameters were controlled.

Results: Mean age in glaucoma and control subjects was 62.72 ±15.25 years and 58.84 ±10.03 years, respectively. Average SAP mean deviation (MD) of the glaucoma patients were -10.77±8.55 dB. Average VA of glaucoma and control subjects were 0.18±0.16 LogMAR and 0.05± 0.09 LogMAR, respectively. Eye tracker analysis is being processed.

Conclusion: Studies upon improving quality of life in patients living with glaucoma should be highlighted, since it is one of the number one causes of visual impairment worldwide. Improving contrast, line spacing and font size while reading are being analysed in this study to do so.

Keywords: Glaucoma, reading, eye tracker

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80. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Marina Roizenblatt**

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e-mail: maroizenb@gmail.com

CEP Number: 0464/2017

5. ABSTRACT (REQUIRED):

Title: Effect of chronic cocaine use on fine motor coordination tested during ophthalmic vitreoretinal simulated performance

Author and Co-authors: Marina Roizenblatt, Thiago Marques Fidalgo, Murilo Polizelli, Natasha Ferreira Santos da Cruz, Arnaldo Roizenblatt, Kim Jiramongkolchai, Peter Louis Gehlbach, Michel Eid Farah, Rubens Belfort Jr., Mauricio Maia.

Purpose: To numerically quantify the degree of fine motor deficits among chronic cocaine users (CCUs).

Methods: We conducted a case-control study using the Eyesi simulator to assess the surgical performance of 24 chronic cocaine users (CCUs) and 24 sex-/age-matched controls to numerically quantify ophthalmic microsurgical simulator performance and fine motor deficiencies. The inclusion criteria were no exposure to illicit drugs other than cocaine, marijuana, or alcohol within the previous month and no health conditions that could impact manual task performance. The outcomes included surgical scores (0-100, worst-best) and task completion time (minutes). Fisher's exact test, analysis of variance, Mann-Whitney U test, and Kruskal-Wallis test followed by Dunn-Bonferroni post-hoc were conducted for statistical analysis.

Results: The Eyesi scores were lower among CCUs compared to controls for bimanual tasks (4.50 ± 14.30 vs. 18.46 ± 26.64 , $p = 0.012$), for exercises demanding upper and lower limb coordination (both hands and two foot pedals, respectively) (74.13 ± 35.01 vs. 85.21 ± 24.1 , $p = 0.045$), and in the overall score for all three tasks (27.38 ± 15.06 vs. 39.5 ± 18.66 , $p = 0.021$). CCUs took longer to complete tasks when performing exercises demanding upper and lower limb coordination compared to controls (1.26 ± 0.38 vs. 1.02 ± 0.44 min, $p = 0.006$). Individuals who used cocaine during the previous month had an independent lower bimanual score compared to controls (1.42 ± 4.91 vs. 18.46 ± 26.64 , $p = 0.018$). No differences in performance among the CCUs were attributable to sporadic cannabis or alcohol use.

Conclusion: Chronic use of cocaine negatively impacted fine dexterity as measured by bimanual tasks or maneuvers that required simultaneous coordination of the upper and lower limbs. This was most notable among individuals who used cocaine during the 1-month period before the simulation.

Keywords: Chronic cocaine users, Hand-dexterity, Microsurgery

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(TU) TUMORS AND PATHOLOGY

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81. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Matheus Senna Pereira Ogata**

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CEP Number: 4889900

5. ABSTRACT (REQUIRED):

Title: Ocular Metastases Profile in a Tertiary Hospital in Sao Paulo

Author and Co-authors: Ogata MSP, Fernandes AG, Morales MC, Neto RB

Purpose: Ocular metastases are the most common intraocular tumors in adults and might be the first sign of disseminated disease. Data regarding the occurrence of these tumors in the Brazilian population is scarce. Also, many hospitals in Brazil do not have a Ocular Oncology service to take care of these patients. The current study aimed to profile the aspects of ocular metastases referred to a tertiary hospital in São Paulo.

Methods: Retrospective study with data collected from the medical records from patients referred to the Ocular Oncology Division from the Federal University of São Paulo. Data was collected from medical records from June 2015 to June 2021. Age, sex, primary tumor site, previous knowledge of the systemic diagnosis, laterality, initial visual acuity (VA), local or systemic treatment and mean follow-up were obtained.

Results: A total of 24 cases were referred to the ocular oncology division due to a suspected metastase diagnose, among those patients 11 were confirmed (45.83%). Mean age was 54.09±18.56, a higher prevalence in women (72.73%), the majority (90.91%) of the patients already knew the systemic diagnose. Breast cancer (63.64%) was the most common primary site, followed by Lung cancer (27.27%). Both eyes were affected in 63.64% of the cases and all patients had choroidal metastases and the mean initial VA was 0.89±1.05 logMAR. When indicated, radiotherapy and Bevacizumab were the options to treat complications (mainly serous retinal detachment)

Conclusion: Considering the amount of new patients absorbed by the Ocular Oncology, frequency of ocular metastases was relatively low. However, data collected by the study is comparable to what is currently known in other literature.

Keywords: Ocular Oncology, Metastases, Tumors

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3. **THEME: (REQUIRED)**
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(TR) TRAUMA
(TU) TUMORS AND PATHOLOGY
(UV) UVEITIS
(US) OCULAR ULTRASOUND

THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

82. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Pablo Felipe Rodrigues**

PG1

e-mail: pablo.felipe@unifesp.com.br

CEP Number: 15403018

5. ABSTRACT (REQUIRED):

Title: Changes in vision-related quality of life in individuals with symmetrical tomography keratoconus submitted to intrastromal corneal ring implantation.

Author and Co-authors: Pablo Rodrigues, Denise de Freitas, Mauro Campos, Walton Nosé

Purpose: Questionnaires for assessing the quality of life deal with health concepts. Most definitions of visual impairment focus only on the state of the eye with better vision, but this approach may underestimate the influence of the eye with a poorer vision on vision-related quality of life (VRQoL). The primary purpose is to evaluate the quality of life-related in patients with symmetrical keratoconus to a change of visual acuity.

Methods: In this cohort study, an ophthalmologist assessed vision, anterior and posterior segment of eyes with keratoconus. Individuals are aged 16-35 years and symmetrical tomography for keratoconus (moderate and severe) completed a functional vision questionnaire (National Eye Institute Visual Function Questionnaire 25 [NEI-VFQ-39]). Each scoring range is 0 (worst possible score to 100 best). Mediphacos (Belo Horizonte, Brazil) sent two different surgical nomograms per patient for an intracorneal ring (ICR) from all cases. All surgeries were performed by femtosecond laser iFS 60Hz (Johnson & Johnson, USA) in both eyes bilaterally on the same day between 2020 and 2021 in São Paulo. After 6 months, 30 patients completed VFQ-39 again, and we analyzed the changes in vision-related quality of life comparatively with corneal analyses by 60 surgeries.

Results: The study sample consisted of 60 eyes of 30 patients. The mean corrected visual acuity improved from 0.41 LogMAR preoperatively (SD \pm 0.17) to 0.23 LogMAR (SD \pm 0.14) postoperatively. The mean spherical equivalent varied from -7.24 (SD \pm 3.47) preoperatively to -4.13 (SD \pm 2.41) postoperatively. The mean K1 was 48.86D (SD \pm 3.13), K2 was 53.75D (SD \pm 2.97), and Kmax 59.06D (SD \pm 4.01) to 45.70 (SD \pm 2.90), 48.54D (SD \pm 2.98) and 54.38D (SD \pm 3.46) postoperatively. The previous general vision was 44.8 (IC 95%, dependency score 61.4, distance vision 42.01, mental health 43.9, and ocular pain 57.5 to 73.79, 78.01, 72.01, 61.81 and 79.74, respectively).

Conclusion: Patients with keratoconus have increased psychological symptoms and lower levels of QoL and showed improvement in psychosocial criteria associated with corneal remodeling and decreased visual dependence after surgeries. Deteriorations in QOL should be kept in mind when managing these patients.

Keywords: Keratoconus, intracorneal ring, vision-related quality of life

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(RE) RETINA AND VITREOUS

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THEME:

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FORMAT:

Abstract should contain:

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Purpose
Methods
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E-Poster

83. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Paulo Alberto Cervi Rosa**
Fellow
e-mail: paulopacr@hotmail.com
CEP Number: 05061-450

5. ABSTRACT (REQUIRED):

Title: Evaluation of a patient with choroidal neovascularization through retinal multimodal imaging

Author and Co-authors: Paulo Alberto Cervi Rosa, MD Eduardo Dib, MD, PhD

Purpose: To show the importance of multimodal retinal imaging in the diagnosis and follow-up of a patient with choroidal neovascularization.

Methods: A 38-year-old female patient born and raised in Istanbul complained about sudden and painless vision loss in her right eye for the past 4 months, associated with metamorphopsia. She denied previous medical and ophthalmologic history. She had 20/160 visual acuity in the right eye. The anterior segment exam was normal and she had a subretinal lesion in the macular area of the right eye. The left eye exam was normal.

Results: She had an ancillary evaluation through multimodal retinal imaging, that showed a hyperreflective subretinal lesion associated with subretinal fluid in the macular area of the right eye. Hyperautofluorescent lesions nasal to the optic disk of the left eye were identified. Serous exams and serologies were within normal limits. The diagnosis of choroidal neovascularization secondary to inflammatory cause (such as punctate inner choroidopathy) was made and the patient was treated with monthly intravitreal injections for three months. The patient reported improvement of her symptoms and her visual acuity is 20/30.

Conclusion: Multimodal retinal imaging was fundamental on identifying lesions of the left eye and thus on the etiologic investigation of this case. Also, it was possible to verify the morphological and functional improvement of the patient during the course of treatment, specially through the use of optic coherence tomography and microperimetry.

Keywords: multimodal imaging ; white dot syndromes ; choroidal neovascularization

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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(GL) GLAUCOMA

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Abstract should contain:

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Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

84. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Priscilla Fernandes Nogueira**

PGO

e-mail: prinog@hotmail.com

CEP Number: 1023/2020

5. ABSTRACT (REQUIRED):

Title: Randomized Clinical Trial: Effects of Ramelteon Replacement on Sleep Quality of Patients with Advanced Glaucoma

Author and Co-authors: Priscilla Fernandes Nogueira Monica Levy Andersen Carolina Pelegrini Barbosa Gracitelli Augusto Paranhos Jr.

Purpose: The present study aims to analyze the effects of oral administration of ramelteon in patients with advanced glaucoma. We will examine if there is an improvement in the sleep pattern of these patients evaluated by polysomnography, actigraphy, melatonin dosage and questionnaires of sleep quality.

Methods: A prospective, randomized and parallel, therapeutic-type clinical study will be realized. This study will be performed at the Glaucoma Division and Department of Psychobiology at the Federal University of São Paulo - UNIFESP/EPM. Patients who will be included in this study have the diagnosis of primary open-angle glaucoma in follow-up Glaucoma Division at the Federal University of São Paulo - UNIFESP/ EPM. The study will take 64 patients, 32 for the ramelteon group and 32 for the placebo group. The age range of volunteers will be over 40 years old and under 80 years old. All volunteers will undergo a complete ophthalmologic evaluation (including clinical history, biomicroscopy, visual acuity with best correction, gonioscopy, IOP measurement using Goldmann applanation tonometry, funduscopy using 78 diopter lens and Humphrey automated perimetry 24-2 SITA-Standardt, and answer a sleep quality questionnaire. Every participant will receive the medication or placebo for a period of 30 days, during which they will all be evaluated with an actigraphy, polysomnography and blood dosage of melatonin, exam on day 0 and after on day 30, then discontinuing the use of the medication.

Results: For this present study, 8 patients were recruited in which the initial exams have already been performed and are waiting to release the polysomnography exam.

Conclusion: Some previous studies have indicated that patients with advanced glaucoma have sleep disorders, and probably the use of this medication can improve the sleep pattern in these patients.

Keywords: Glaucoma, melatonin, ramelteon, sleep disorders.

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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(CA) CATARACT

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Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
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E-Poster

85. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Raphael de Faria Schumann**

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e-mail: rschumann0101@gmail.com

CEP Number: 0388/2019

5. ABSTRACT (REQUIRED):

Title: Value-based Health Care Analysis in Ophthalmology

Author and Co-authors: Raphael Schumann Advisor: Prof. Dr. Paulo Schor

Purpose: In the present study, we aim to analyze the quality of the treatment cycle of patients undergoing facectomy at Hospital São Paulo and at IPEPO - Instituto da Visão.

Methods: 250 patients undergoing facectomy surgery (and who have been scheduled only for this procedure) will be randomly selected at the Ophthalmology Department of Hospital São Paulo and at IPEPO - Instituto da Visão. Data will be collected regarding the patient's experience related to the quality of medical care and clinical and surgical outcomes.

Results: The mean age was 70,32 years with a hospital NPS of 85. 68% of the patients achieved best visual acuity 20/40 or best and 80% an improvement on visual acuity after undergoing facectomy. Post operative complications were found in 16,03% of patientes ans 25,95% had some ocular comorbidity. The mean time of surgery was 41 minutes.

Conclusion: Further analysis is necessary so that we can have a better understanding of the impact of the clinical outcomes in patient's opinion regarding their journey during the treatment cycle and to study the relationship between these two indicators.

Keywords: vbhc outcomes cataract measures valu-based health care

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(CO) CORNEA AND EXTERNAL DISEASE

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86. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **renato correa souza de oliveira**

PG1

e-mail: renatocso@gmail.com

CEP Number: 1170/2020

5. ABSTRACT (REQUIRED):

Title: Topography, tomography, and aberrometric evaluation of the cornea in the pediatric population

Author and Co-authors: Renato Souza Oliveira^{1,2}, Mauro Campos² ¹? Instituto Brasileiro de Oftalmologia - RJ ²? Universidade Federal de São Paulo

Purpose: In this study, a minimum of 100 patients between 6 and 18 years old will be recruited and divided into 5 groups, as mentioned below. A group of patients with keratoconus, or ocular allergy, or astigmatism higher than 2 diopters, or Down's Syndrome. Another group of 20 patients with no ocular abnormality will be the control group. The main purpose of this study is to compare topographic, and aberrometric parameters provided by three multifunctional devices (the NIDEK OPD-Scan III, the Pentacam HR, and the Carl Zeiss Vision i.Profiler Plus) among these groups. A secondary purpose is to assess the repeatability and agreement of these three devices in those groups. A third objective is to evaluate the agreement between the autorefractometry function of the NIDEK OPD-Scan III based on scanning retinoscopy principle, and the Carl Zeiss Vision i.Profiler Plus, a wavefront aberrometer, compared with a noncycloplegic subjective refraction.

Methods: This is a cross-sectional study. All patients will be scanned by the three devices mentioned above. The same operator will obtain three consecutive scans in each device on the same day. Corneal topography values of the anterior and posterior cornea and wavefront aberration parameters will be compared among these three devices in each of the groups. Statistical analyses will be performed using Stata/SE Statistical Software, Release 14.0, 2015 (Stata Corp, College Station, Texas, USA). Frequency tables will be used for descriptive analysis. The differences on measurements among groups will be evaluated by the Kruskal-Wallis test followed by post-hoc analysis of Dunn. The reproducibility between equipment will be evaluated qualitatively using Bland-Altman graphs and quantitatively by Intraclass correlation tests. P values ≤ 0.05 will be considered statistically significant. The spherical equivalent refraction and cross-cylinder difference for the manifest refraction and the autorefractometry provided by the devices will be compared using Bland-Altman limits of agreement and 95th percentile analysis

Results: At the moment, we have examined a total of 95 patients. Statistical analyses will start as soon as we reach the number of patients required.

Conclusion: it is not possible yet

Keywords: keratoconus, corneal topography, corneal tomography, corneal aberrometry

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Purpose
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Conclusion
Keywords
E-Poster

87. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Rosangela Demetrio**

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e-mail: rosangela.demetrio@unifesp.br

CEP Number: 1.480.825

5. ABSTRACT (REQUIRED):

Title: PROFILE OF STRICTO SENSU GRADUATES IN OPHTHALMOLOGY AND UNIFESP VISUAL SCIENCES

Author and Co-authors: Rosangela Demetrio, Caio Vinicius Saito Regatieri. Denise de Freitas

Purpose: Draw a profile of the Graduate Program in Ophthalmology and Visual Sciences at Escola Paulista de Medicina / Universidade Federal de São Paulo, by mapping the areas of expertise in research of alumni. Define the area of greatest scientific production for each alumni.

Methods: Obtain authorizations for access to information The study meets the standards of ethics in research with human beings, obtaining approval from the Research Ethics Committee of the Federal University of São Paulo (UNIFESP), under opinion No. 1,480,825. Specify study participants Graduates of the Graduate Program in Ophthalmology and Visual Sciences at Escola Paulista de Medicina / UNIFESP, all students trained in the Academic Master's, Academic Doctorate and Post-Doctorate courses were selected. The population to be investigated is 523 graduates, being 174 individuals graduated in the Academic Master's Degree, 334 graduated in the Academic Doctorate and 15 in the Post-Doctorate. Research steps Some important steps in this research can be considered: 1. specification of the population to be researched (step 1), 2. search for existing data in the PPG database (step 2), 3. search for titles published by the graduate, as the first author (step 3), 4. identification of the research line to which they refer, using the descriptors (step 4), 5. analysis of the collected data (step 5) and the 6. description of the results (step 6).

Results: We have no results yet

Conclusion: The conclusion of this study will point out which is the line of research of the Graduate Program in Ophthalmology and Visual Sciences at Unifesp (PPG) that most contributes to science, through the scientific production of its graduates, thus defining a profile of the PPG. The result will also be a general database with all the publications of these graduates, their descriptors and lines of research to which they refer, among other data.

Keywords: Graduate; Alumni; Profile

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(RE) RETINA AND VITREOUS

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Keywords
E-Poster

88. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Vitor Dias Gomes Barrios Marin**

R1

e-mail: vitordiasgomesbm@gmail.com

CEP Number: 04039-031

5. ABSTRACT (REQUIRED):

Title: WEIGHT-ADJUSTED CAFFEINE AND β -BLOCKER EXPOSURE IN NOVICE VERSUS SENIOR RETINAL SURGEONS: A SIMULATED PERFORMANCE STUDY

Author and Co-authors: Marina Roizenblatt, MD Kim Jiramongkolchai, MD Vitor Dias Gomes Barrios Marin MD Mitchell D Wolf MD Peter L Gehlbach MD PhD Michel Eid Farah MD Rubens Belfort Jr, MD, PHD Mauricio Maia MD

Purpose: to study surgical simulated performance in novice vs senior retinal surgeons taking propranolol and caffeine.

Methods: a 3-year, self-controlled study assessed changes in surgical performance on the Eyesi simulator after the following exposures: day 1: placebo, 2.5 mg/kg caffeine (low C), 5 mg/kg caffeine (high C), and 0.6 mg/kg propranolol (P-post-C), day 2: placebo, 0.2 mg/kg propranolol (low P), 0.6 mg/kg propranolol (high P), and 5 mg/kg caffeine.

Results: Groups were formed based on surgical practice time: novices (less than 2 years, n=15) vs senior (longer than 10 years, n=11). In novices, low C negatively impacted total (557 vs 617, P=0.009) and tremor scores (55 vs 75, P=0.009), compared to low P. P-post-C was related to performance improvement but remained inferior compared to low P for total (570 vs 617, P=0.004) and tremor scores (50 vs 75, P=0.03). In seniors, there was no difference in total score even after high C vs high P, but the tremor score deteriorated after low C vs low P (8 vs 37, P=0.01) and after P-post-C vs high P (17 vs 38, P=0.01).

Conclusion: external exposures changed overall performance of novice surgeons but affected only the tremor rate in seniors.

Keywords: Retinal surgery, surgical simulated performance, tremor rate, novice versus senior

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(TU) TUMORS AND PATHOLOGY

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89. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **VIVIANE KELY COSTA GUEDES**

Fellow

e-mail: VIVIANE.GUEDES@HOTMAIL.COM

CEP Number: 4355635

5. ABSTRACT (REQUIRED):

Title: Choroidal pseudomelanoma in the Ocular Oncology division from UNIFESP

Author and Co-authors: Guedes VKC, Fernandes A, Morales MC, Belfort RN

Purpose: Choroidal melanoma is the most common primary intraocular tumour in adults, but many suspicious clinical findings of choroidal lesions may mimic it. The objective of this study is to evaluate the frequency and epidemiological, clinical, and imaging profile of lesions that simulate choroidal melanoma referred to the Ocular Oncology division of UNIFESP.

Methods: This is a retrospective review study of medical records of suspected choroidal melanoma lesions from 2014 to 2020 in a national reference service in ocular oncology. Demographic data (age, sex), clinical data (precedence of neoplasms, ophthalmological alterations) and exams (ultrasound parameters) were evaluated. Patients who lost follow-up and whose diagnosis was not possible to elucidate were excluded from the analysis.

Results: A total of 104 patients (mean age: 65.57 ± 13.18 , median 66, 49.04% female) referred to the Ocular Oncology Sector with suspected choroidal melanoma were included in the present study. Of these, 32 (30.77%) were classified as pseudomelanoma, while 72 (69.23%) had a confirmed diagnosis of choroidal melanoma. It is noticed that cases of pseudomelanoma manifest in older individuals ($p < 0.001$), have smaller lesions in height ($p < 0.001$), anterior posterior diameter ($p = 0.008$) and lateral diameter ($p = 0.003$) on ultrasound and are associated with greater frequencies of vitreous hemorrhage ($p = 0.014$) and lower mass ($p = 0.001$) and retinal detachment ($p < 0.001$) frequencies. The main diagnosis of pseudomelanoma cases were nevus (40.63%), subretinal haemorrhage (18.75%), and choroidal neovascular membrane (18.75%).

Conclusion: Almost 1/3 of referred cases with choroidal melanoma suspicion were pseudomelanomas, which demonstrates that there is still a considerable path to improve the general ophthalmologist's ability to clinically discriminate melanoma from other conditions that simulate it. The usage of diagnostic tools such as ocular ultrasound may help in the differential diagnosis.

Keywords: Epidemiology, Ophthalmology, Choroidal melanoma, Mistaken diagnosis, public health, Vision

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Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

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THEME:

Infeccion
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Angiogenesis
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Cell therapy

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Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

90. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Zaira Fernanda Martinho Nicolau**

Fellow

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CEP Number: 0725/2021

5. ABSTRACT (REQUIRED):

Title: Posterior segment hemorrhage in Chronic Myeloid Leukemia

Author and Co-authors: Zaira Fernanda Martinho Nicolau , Nilva Simeren Bueno de Moraes.

Purpose: The purpose of this report is to describe a patient with chronic myeloid leukemia with multiple layers hemorrhages who underwent single Nd:YAG laser membranotomy.

Methods: Observational case report.

Results: A 22-year-old male patient, Brazilian, was admitted to our service with visual worsening in both eyes for one month. He also referred episodes of fever, chills and petechiae in the lower limbs two months ago and lost of 30 kg in 4 months. He had no significant past medical history. On examination, he had corrected visual acuity (VA) of counting fingers at 2 meters in the right eye (OR) and 20/160 in the left eye (OS), normal anterior segment and intraocular pressure of 12 mmHg in both eyes. His OR had a dense preretinal hemorrhage in the macula, subretinal hemorrhages and retinal hemorrhages with a pale center. The OS had preretinal macular hemorrhage, subretinal hemorrhage and hard exudates. Optical coherence tomography (OCT) depicts a subinternal limiting membrane hemorrhage. Bone marrow aspiration revealed hypercellularity with granulocytic hyperplasia and immunophenotyping suggestive of chronic myeloproliferative disease. Genetic evaluation identified Philadelphia chromosome. Nd:Yag laser membranotomy was done in the inferior margin of the anterior surface of the premacular hemorrhage in the OR and observation in the OS. 1 month after the procedure, the VA was 20/40 in the OR and 20/80 in the OS. There was reabsorption of almost all of the bleeding in both eyes, but there was macular deposits in the OS. VA maintained and funduscopy improved in the 3-month follow up. He's been followed with hematologist and in use of imatinib mesylate, with no systemic complaints.

Conclusion: Chronic myeloid leukemia has an incidence of 1-2 cases per 100,000 adults and represents 15% of newly diagnosed adult leukemia cases. It is a disorder that alters retinal and choroidal vasculature integrity. This can cause neovascularization, hemorrhages and neoplastic infiltration in the posterior segment. Up to 50% of newly diagnosed patients may have ocular involvement. These have worse survival rates compared to patients without ocular manifestations. Management options include observation, Nd:YAG laser membranotomy and pars plana vitrectomy. Nd:YAG laser is a relatively safe and effective method.

Keywords: Chronic Myeloid Leukemia, preretinal hemorrhage, Nd:YAG laser.

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FORMAT:

Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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91. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Luisa Salles de Moura Mendonça**

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CEP Number: NEEC 7745

5. ABSTRACT (REQUIRED):

Title: Model-to-Data Approach for Deep Learning in Optical Coherence Tomography Intraretinal Fluid Segmentation

Author and Co-authors: Nihaal Mehta; Cecilia S. Lee; Luísa S. M. Mendonça (Presenter); Khadija Raza; Phillip X. Braun; Jay S. Duker, Nadia K. Waheed, Aaron Y. Lee

Purpose: Amid an explosion of interest in deep learning (DL) in medicine, including within ophthalmology, concerns regarding data privacy, security, and sharing are of increasing importance. A model-to-data approach, in which the model itself is transferred rather than data, can circumvent many of these challenges. The purpose of this study was to determine whether a model-to-data DL approach (ie, validation of the algorithm without any data transfer) could be applied in ophthalmology.

Methods: This single-center cross-sectional study included patients with active exudative age-related macular degeneration undergoing optical coherence tomography (OCT) at the New England Eye Center (NEEC) from August 1, 2018, to February 28, 2019. A deep-learning model was trained in recognizing intraretinal fluid (IRF) on OCT B-scans using a model-to-data approach. 400 OCT B-scans from 58 patients were selected for the training set. An additional 70 scans from 70 patients that were not included in the training set were selected for the test set. The model-to-data approach was taken by freezing the model parameters from a prior study for IRF segmentation and transferring the model parameters, retraining code, data pre-processing, and code for reevaluation from the University of Washington to the NEEC, where researchers executed the retraining of the model.

Results: The model was trained (learning curve Dice coefficient, >80%) using 400 OCT B-scans from 128 participants (69 female [54%] and 59 male [46%], mean [SD] age, 77.5 [9.1] years). In comparing the model with manual human grading of IRF pockets, no statistically significant difference in Dice coefficients or intersection over union scores was found ($P > .05$).

Conclusion: A model-to-data approach to deep learning applied in ophthalmology avoided many of the traditional hurdles in large-scale deep learning, including data sharing, security, and privacy concerns. Although the clinical relevance of these results is limited at this time, this proof-of-concept study suggests that such a paradigm should be further examined in larger-scale, multicenter studies.

Keywords: deep-learning, optical coherence tomography, model-to-data

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Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

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Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

92. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 2088/08

5. ABSTRACT (REQUIRED):

Title: Ten-year follow-up of corneal cross-linking and refractive surface ablation in patients with asymmetric corneal topography

Author and Co-authors: Bernardo Kaplan Moscovici Paulo Schor Mauro Campos

Purpose: Compare the safety and efficacy of wavefront-guided PRK combined or not with CXL for refractive correction in patients with bilateral asymmetric corneal topography.

Methods: Prospective randomized clinical trial. Sixteen patients (32 eyes) were enrolled in this study. CXL with subsequent PRK after 6 months was performed in one eye (study group), and PRK alone was performed in contralateral eyes (control group). Patients were followed for 10 years. We analyzed visual outcomes, Scheimpflug tomography and corneal haze evaluation.

Results: Overall, control eyes showed better results than eyes in the study group. Mean CDVA was 0.044 (SD, 0.073) in the control group and 0.1 (SD, 0.21) in the study group, mean sphere was 0.21 (SD, 0.6) D in the control group and 0.87 (SD, 2.3) D in the study group, and mean SE was 0.35 (SD, 0.65) D in the control group and 0.62 (SD, 2.32) D in the study group. In one patient, a steepening of 2.5 D and a thinning of 17 μ m occurred in the control eye (PRK alone). Two patients in the study group presented corneal haze.

Conclusion: Non-simultaneous CXL and PRK procedures yielded good refractive results, but worse than those obtained with PRK alone. Although one patient in the control group developed corneal ectasia, the study group had a higher rate of loss vision lines, indicating less safety.

Keywords: refractive surgery, Photorefractive Keratectomy; Lasers, Excimer, corneal stroma, cornea, corneal topography

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THEME:

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Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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93. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Victoria - Sakamoto**

R3

e-mail: victoria.ksakamoto@gmail.com

CEP Number: 65923717

5. ABSTRACT (REQUIRED):

Title: To evaluate the application of the red reflex test in newborns treated at the Congenital Cataract Outpatient Clinic of the Federal University of São Paulo

Author and Co-authors: Victoria Sakamoto Ana Paula Silverio Rodrigues

Purpose: A congenital cataract is a lens opacity presented at birth or developed until three months old that can lead to total or partial blindness if not diagnosed or treated early. It is considered one of the leading preventable causes of childhood blindness. The Red Reflex Test (RRT) is a screening eye evaluation that can early detect anomalies that may compromise the vision, such as congenital cataracts. This study objective evaluates the performance of mandatory visual screening in children treated at the Congenital Cataract division of the Department of Ophthalmology and Visual Sciences of EPM - Unifesp and verifies if different types of congenital cataracts can falsify the Red Reflex Test (RRT).

Methods: We performed a complete analysis of the medical records of all children from 0 to 1 year old, referred to the Congenital Cataract Outpatient Clinic of the Federal University of São Paulo, with the diagnosis of congenital cataract. The study was conducted between February 2012 and July 2021. The following information was collected: RRT and cataract classification based on the slit lamp exam. The RRT was analyzed for its execution and written report in the referral. All patients underwent a new RRT and a complete eye examination. We used the chi-square test to perform a univariate analysis (CI 95% and p-value '<' 0.05).

Results: In progress

Conclusion: In progress

Keywords: Congenital cataract; red reflex test

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THEME:

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Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

94. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Frederico do Carmo Novaes**

R1

e-mail: fred.novaes@gmail.com

CEP Number: 4516001

5. ABSTRACT (REQUIRED):

Title: Cylindrocarpon fungal keratitis: first Brazilian case report

Author and Co-authors: Novaes, Frederico do Carmo, Silva, Ludmila Nascimento Pinto, Franco, Andressa Castelo Branco Araújo Bernal, Kase, Camila

Purpose: To report the first case in Brazil of Cylindrocarpon infectious keratitis.

Methods: Review of patient medical records.

Results: 36 years old female patient from Sao Paulo/Brazil presented to the ophthalmologic emergency room complaining of red eye and ocular itchiness in the right eye for 7 days and a white corneal lesion in the same eye for 1 day. In the ophthalmologic exam, she had a visual acuity of hand motion and low intraocular pressure in the right eye. Anterior biomicroscopy showed central corneal thinning, spontaneous Seidel, and a ring-shaped corneal infiltrate. The fundus exam was impossible due to corneal opacity. The patient was initially managed with smear and culture of corneal ulcer. Due to corneal perforation, cyanoacrylate glue was performed. It was prescribed Moxifloxacin 0.5% every hour, oral Acyclovir 2g/day and oral Doxycycline 100mg twice a day. Confocal microscopy showed hyphae, suggestive of a filamentous fungal etiology. Amphotericin B 0.15% eyedrops hourly and oral Ketoconazole 400mg/day was initiated. After 2 weeks, Cylindrocarpon spp. was isolated in corneal culture. Due to no response of clinical management, a therapeutic penetrating keratoplasty was performed.

Conclusion: Cylindrocarpon spp. is a saprophytic filamentous fungus found in soil and plants. It can be transmitted through contaminated water, plant debris and soil. There are only 8 keratitis reports due to Cylindrocarpon in the literature and no records in Brazil

Keywords: keratitis, fungus, cylindrocarpon, cornea, ulcer

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Abstract should contain:

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Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

95. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Guilherme Macedo Souza**

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e-mail: gmacedo4@gmail.com

CEP Number: 0451/2021

5. ABSTRACT (REQUIRED):

Title: Neisseria keratoconjunctivitis: retrospective analysis of cases in tertiary care

Author and Co-authors: Guilherme Macedo Souza, Klaus Anton Tyrrasch, Ana Luisa Hofling-Lima, Denise de Freitas

Purpose: To analyze the cases of Neisseria keratoconjunctivitis identified at Sao Paulo Hospital.

Methods: Observational, descriptive, and retrospective study. All cases of hyperacute conjunctivitis were from the Eye Emergency Service between 2016 and 2020. Cases were identified as gram-negative diplococci and/or Neisseria spp. from the conjunctival secretion or corneal scraping. Epidemiological aspects, clinical presentation, serologies, needing surgical intervention, and outcomes were collected from the medical records and analyzed. The institution's Research Ethics Committee approved the study.

Results: Among 382 bacterial conjunctivitis identified, 108 were gram-negative diplococci and/or Neisseria spp. Twenty one percent of the patients presented corneal compromise and 9,3% corneal perforation. Eight cases were gonococcal ophthalmia neonatorum and none of them evolved with keratitis - these patient's mean age was 14.1 days old. The average age of the other 100 cases was 23,71 years old, 30% of the patients were under 18 years old, and 61% were male. Furthermore, it was observed increase of the number of cases over time during the analyzed period.

Conclusion: Neisseria keratoconjunctivitis must be seen as a public health issue as it affects economically active populations and possibly leads to functional (visual) impairment. The increasing number of cases over time is a concern that medical and public authorities must face.

Keywords: Gonococcal keratoconjunctivitis, keratitis, hyperacute conjunctivitis, ophthalmia neonatorum.

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Purpose
Methods
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Keywords
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96. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Talita Trevizani Rocchetti**

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CEP Number: 1.423.852

5. ABSTRACT (REQUIRED):

Title: Evaluation of Rose Bengal Mediated Photodynamic Therapy for Inhibition of Bacterial, Rapid Growing Mycobacteria, Fungi and Parasites

Author and Co-authors: Talita Trevizani Rocchetti¹, Wirley Alves de Mendonca Júnior¹, Larissa Fagundes¹, Jarbas Caiado de Castro Neto², Denise de Freitas¹, Viviane Peracini Sant'Ana, Maria Cecilia Zorat Yu¹, Ana Luisa Hofling-Lima¹ 1- Ophthalmology Departament, Universidade Fed

Purpose: The purpose of this study was to evaluate the in vitro efficacy of rose bengal mediated photodynamic therapy for inhibition of bacteria, Rapid Growing Mycobacteria, Fungi and Parasites

Methods: Twelve corneal clinical isolates: Staphylococcus aureus, Staphylococcus epidermidis, Pseudomonas aeruginosa, Moraxella spp., Fusarium solani, Purpureocillium lilacinum, Candida parapsilosis, Scedosporum spp., Curvularia geniculata, Mycobacterium chelonae, Mycobacterium abscessus and Acanthamoeba spp. were used in the experiments. Microorganisms were grown and incubated at specific conditions and prepared in suspension to concentrations adjusts. Tested in triplicate, groups included: Group I, control, no treatment, Group II, microorganism suspension treated with 0.1% rose bengal and exposed to the dark for 30min, Group III, microorganism suspension exposed with a 7.15 mW/cm² custom-made green LED source for 30 minutes (12.87 J/cm²) and Group IV, microorganism suspension treated with 0.1% rose bengal and exposed with a 7.15 mW/cm² custom-made green LED source for 30 minutes (12.87 J/cm²). Final work concentration was 104 cells per mL. Plates were incubated at specific conditions and photographed after growth.

Results: Complete growth inhibition of all bacteria, Rapid Growing Mycobacteria, Fusarium solani, Purpureocillium lilacinum and Candida parapsilosis were demonstrated. Acanthamoeba spp. showed an 85% decrease in cell viability after treatment with 0.1% rose bengal under green LED irradiation for 30 minutes. S. aureus and S. epidermidis treated with 0.1% rose bengal and exposed to the dark also showed complete growth inhibition. Scedosporum spp., Curvularia geniculata growths were not inhibited after treatment with 0.1% rose bengal under green LED irradiation for 30 minutes.

Conclusion: Rose bengal mediated photodynamic therapy demonstrated an expressive inhibition to 10 of 12 microorganisms tested. Clinical treatment may offer an alternate adjunct therapy for eye infection.

Keywords: Rose Bengal Mediated Photodynamic Therapy, Bacterial, Rapid Growing Mycobacteria, Fungi, Parasites

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97. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Fernanda Machado Bezerra Linhares**

PG1

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CEP Number: 60813-565

5. ABSTRACT (REQUIRED):

Title: Candida species in fungal keratitis: drug susceptibility and molecular characterization

Author and Co-authors: Fernanda Machado Bezerra Linhares, Ana Luisa Hofling-Lima, Talita Trevizani Rocchetti, Soraia Lopes Lima, Analy Salles de Azevedo Melo, Daniel Wagner de Castro Lima Santos, Maria Cecília Zorat Yu, Lauro Augusto de Oliveira

Purpose: To describe clinical aspects, molecular characterization, biofilm formation and antifungal susceptibility profile of Candida keratitis in a referral cornea center in Brazil

Methods: Thirteen Candida isolates obtained from 13 eyes of 13 patients diagnosed with Candida keratitis in our service, from October 2012 through October 2017, were retrieved from the microbiology laboratory at São Paulo Federal University and grown in pure culture. Identification was performed by micromorphology and by sequencing of rDNA ITS. Minimum inhibitory concentration (MIC) of four antifungal drugs (fluconazole, amphotericin B, voriconazole and micafungin) were tested by broth microdilution method. The biofilm formation was also studied. The biofilms were cultured and incubated with antifungal drugs for 48 h. Biofilm activity was measured by the XTT reduction assay. Biofilm MICs were calculated on the basis of a 50% reduction in metabolic activity compared with the activity of the drug-free control.

Results: The most common risk factor for fungal keratitis was previous ocular surgery (84.6%). Four patients (30.7%) needed keratoplasty and 2 patients (15.3%) ended up with evisceration. There were 100% concordance between phenotypic and molecular methods. Among isolates, 2 were *C. albicans*, 10 *C. parapsilosis* (*sensu stricto*) and 1 *C. orthopsilosis*. All isolates were susceptible for all four antifungal drugs. Four isolates were non-biofilm producers (30%). Nine isolates were biofilm producers, and all biofilms samples were not susceptible to all drugs tested.

Conclusion: Previous ocular surgery was the most common risk factor and *C. parapsilosis* was the most frequent subspecies (76.9%). Despite *in vitro* antifungal susceptibility, almost half of patients were unresponsive to clinical treatment and needed surgery. Biofilm formation ability decreased antifungal susceptibility while compared to planktonic isolates and may explain unresponsiveness to clinical treatment.

Keywords: cornea, candida, biofilms, keratitis, antifungal agents

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Methods
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98. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 357409207

5. ABSTRACT (REQUIRED):

Title: Recurrence of Ocular Surface Squamous Neoplasia (OSSN) after treatment in a tertiary hospital in Sao Paulo

Author and Co-authors: Brito, AC, Matsuno, CA, Fernandes, AG, Morales, MC, Belfort, RN

Purpose: To evaluate recurrence of Ocular Surface Squamous Neoplasia (OSSN) cases after treatment with topical chemotherapy, surgery or neoadjuvant chemotherapy at the ocular oncology outpatient clinic of Federal University of São Paulo (UNIFESP).

Methods: A retrospective study was conducted by review of medical records of cases treated for OSSN in our service with a minimum of 1-year follow-up since successful treatment. Patients with insufficient data or loss of follow up were excluded from the analysis. Data regarding age, sex, treatment scheme, characteristics of the tumor, as location and clock hour extension were analyzed. In addition, comorbidities such as diabetes, hypertension, dyslipidemia, immunosuppression, and a history of smoking were evaluated.

Results: A total of 162 treated participants were selected for the primary analysis from the year 2013 to 2019. Most cases were treated with single topical chemotherapy (35.18%), followed by surgical excision (32.71%), neoadjuvant chemotherapy (25.92%) or laser (16.66%). Our preliminary results from 2013-2019 demonstrated a 6.79% OSSN recurrence rate. The year 2020 recurrence analysis is still in progress. We noted that laser treatment has 33 times more chance of recurrence of the case treated with topical chemotherapy.

Conclusion: In our study, the overall recurrence rate was 6.79%, lower than other Ocular oncology centers. It was also observed that cases treated with laser had a 33 times chance of recurrence when compared to cases treated with topical chemotherapy.

Keywords: ocular cancer, ocular surface squamous neoplasia, topical chemotherapy, surgical excision, recurrence

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Conclusion
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99. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 0715/2020

5. ABSTRACT (REQUIRED):

Title: Corneal culture in infectious keratitis. Do repeated cultures increase diagnostic yield? A Brazilian single-center analysis

Author and Co-authors: Camila Kase, Rocchetti TT, Yu MCZ, Nakayama LF, Fernandes AG, Höfling-Lima AL

Purpose: Analyze if repeated corneal cultures in cases of microbial keratitis increase the diagnosis of etiological agents

Methods: Retrospective study of corneal material cultures of patients with microbial keratitis sent to the Microbiology Laboratory of the Department of Ophthalmology, Federal University of Sao Paulo, from January 2010 to December 2019. Statistical analysis was performed by the software JASP (JASP Team 2020 - version 0.14.1). Frequency tables were used for descriptive analysis. Infectious keratitis episodes were considered for analysis, and they were divided into single culture group (one culture per infection) and multiple culture group (more than one culture per infection). A two-tailed probability with a $p < 0.05$ was considered for statistical significance. In the comparison of nonparametric parameters, a chi-square test was performed after the normality check

Results: A total of 4810 corneal cultures were performed in 4047 infectious episodes. There were 1891 (46.72%) female and 2156 (53.27%) male patients, with a mean age of 47.79 ± 20.68 years (0.4-102 years). Corneal cultures were performed in 2017 (49.84%) right eyes and 2029 (50.13%) left eyes. The number of samples for each infectious episode varied from 1 to 14, with a mean of 1.19 ± 0.58 and a median of 1. In 3407 (84.19%) cases, only one culture was performed, and in 640 (15.81%) cases, more than one culture was performed. The overall culture positivity for bacteria, fungi and Acanthamoeba was 75.36%. When considering only one culture, the frequency of at least one positive culture was 73.77%, while considering two, three, four, and more than five, it was 84.44%, 85.15%, 97.06%, and 100%, respectively ($p < 0.001$). Comparing the single culture group and the multiple culture group, the frequency of at least one positive culture was 73.77% in the first group, while it was 85.74% in the second one ($p < 0.001$).

Conclusion: Corneal cultures are considered the gold standard for diagnosis in microbial keratitis, and few studies have investigated the benefits and cost-effectiveness of repeated cultures. Our study found a significantly higher culture positivity in the multiple culture group, which shows that performance of more than one culture increases the chance of a positive result in infectious keratitis. The next step of this study will detail the benefits of repeated cultures for patients regarding diagnosis of the etiological agent and a post-hoc analysis.

Keywords: keratitis, microbiology, culture

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100.FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 0715/2020

5. ABSTRACT (REQUIRED):

Title: Microbiological profile of culture-proven cases of exogenous endophthalmitis: a 10-year retrospective study

Author and Co-authors: Tabuse, Aileen, Kase Camila, Yu, Maria Cecilia Zorat, Hofling-Lima, Ana Luisa

Purpose: To identify the microbial etiology of infectious endophthalmitis and to determine the in vitro antibacterial susceptibilities of bacterial isolates.

Methods: A retrospective analysis was carried out of all patients presenting between January 2010 and December 2019 with clinically diagnosed infectious endophthalmitis who underwent microbiological evaluation. Intraocular specimens (aqueous and vitreous fluids) were collected from all cases of clinically suspected infectious endophthalmitis. In addition to intraocular aspirates, corneal and scleral scrapes from relevant cases were also collected. The collected intraocular specimens and corneal and scleral scrapes were subjected to microbiological evaluation.

Results: Samples from 670 patients with presumed endophthalmitis underwent microbiological analysis, of which 322 (48,05%) were found to be culture positive. Gram-positive cocci were found to be the predominant cause for infection among postoperative phacoemulsification (69,2%), intravitreal injection (94,5%), ocular trauma (69,4%), and microbial keratitis (73,7%) endophthalmitis. The most isolated pathogens were coagulase-negative Staphylococci (35,7%), *Pseudomonas aeruginosa* (8,9%) and *Staphylococcus aureus* (7,9%). Overall, the most tested antibiotic were ofloxacin (79,4%), ciprofloxacin (79,1%), gentamicin (77,6%), amikacin (70,4%) and vancomycin (69,6%). Amikacin (97,9%) showed highest activity against bacterial isolates followed by vancomycin (96,6%) and gentamicin (81,5%).

Conclusion: The predominant bacteria found on culture was coagulase-negative Staphylococci despite the risk factor for endophthalmitis. Amikacin and vancomycin demonstrated greatest efficacy against these bacterial isolates.

Keywords: endophthalmitis, microbial pathogens, antibacterial susceptibilities

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101.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Cristiana Lumack do Monte Agra**

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CEP Number: 4286085

5. ABSTRACT (REQUIRED):

Title: PERIPAPILLARY VASCULAR DENSITY, RETINAL NERVE FIBER LAYER AND GANGLION CELL COMPLEX THICKNESSES IN CHRONIC CHAGAS DISEASE

Author and Co-authors: Cristiana Agra¹, Camila V. Ventura², Ana Karine Soares³, Camila Rocha⁴, Marcela Oliveira⁵, Letícia da Fonte⁵, Marília Leal⁵, Tiago S. Prata⁶. 1. DINTER?FAV/UNIFESP, Department of Ophthalmology, Altino Ventura Foundation, Recife, PE, Brazil and Department

Purpose: To investigate peripapillary vascular density (PVD), retinal nerve fiber layer (RNFL) thickness, and ganglion cell complex (GCC) thickness obtained from optical coherence tomography angiography (OCTA) in patients with chronic Chagas disease (CD).

Methods: We report the preliminary results of this cross-sectional ongoing study that included patients with chronic CD and healthy subjects as controls. All participants underwent a complete ophthalmological examination, including retinography (CR2, Canon Inc., New York, USA) and OCTA exams (RTVue XR Avanti, Optovue, Fremont, California, USA). The main outcome measures were PVD, RNFL and GCC thicknesses, which were compared between the 2 groups.

Results: A total of 9 patients with chronic CD (mean age: 57.3 years, range, 46-68 years) and 9 healthy controls (mean age: 55.1, range, 44-67 years) were included until now. Out of the chronic CD group, 5 patients had cardiac CD form without ventricular dysfunction, 2 had ventricular failure, and 2 had the indeterminate form. No significant difference was observed between groups regarding PVD ($p=0.269$), RNFL ($p=0.085$), and GCC thicknesses results ($p=0.401$).

Conclusion: These preliminary results suggest that, despite having a significant cardiovascular dysfunction, patients with chronic CD may have similar structural and vascular peripapillary parameters when compared to healthy individuals. As this is an ongoing study, a larger sample is warranted to confirm these initial results.

Keywords: Chagas disease; Optic nerve; Glaucoma; Optical coherence tomography angiography.

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102.FIRST (PRESENTING) AUTHOR (REQUIRED):

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PG1

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CEP Number: 0611P2021

5. ABSTRACT (REQUIRED):

Title: EVALUATION OF THE ADHESION OF ACANTHAMOEBA SPP. TROPHOZOITES TO SCLERAL CONTACT LENSES

Author and Co-authors: Larissa Fagundes Pinto, Maria Cecília Zorat Yu, Viviane Peracini Sant'Ana, Talita Trevizani Rocchetti, José Álvaro Pereira Gomes, Ana Luisa Hofling-Lima, Denise de Freitas Department of Ophthalmology and Visual Sciences, Escola Paulista de Medicina, Hospi

Purpose: This study aims to investigate the capability of Acanthamoeba spp. trophozoites to adhere on the surface of scleral contact lenses as well as silicone hydrogel lenses.

Methods: For this purpose, two strains of Acanthamoeba (standardized strain, CDC: V062 and clinical isolate from scleral lens wear) were tested in three types of lenses: first-generation silicone hydrogel soft lenses, scleral contact lenses coated with plasma O₂, and scleral lens coated with plasma O₂ and Hydra-PEG (polyethylene glycol). Three experiments were performed for each strain of Acanthamoeba and each contact lens tested, and 100.000 trophozoites of Acanthamoeba were inoculated per lens. The number of adhered trophozoites was counted under an optical microscope at 40 x magnification.

Results: It was observed that both strains of Acanthamoeba have a high capacity to adhere to the silicone hydrogel lens used as a control. On the other hand, only the Acanthamoeba clinical isolate had a high capacity to adhere to both types of scleral lenses.

Conclusion: These data allow us to conclude that the adhesion profiles may vary between Acanthamoeba isolates.

Keywords: Acanthamoeba, contact lenses, Acanthamoeba keratitis, adhesion, corneal scleral lens, eye.

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Methods
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103.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **João Victor Borges Gomes**

R1

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CEP Number: 4038002

5. ABSTRACT (REQUIRED):

Title: NEUROPHTHALMOLOGICAL COMPLICATIONS IN SARS-CoV-2 INFECTION

Author and Co-authors: Gomes, J. V. B., Sant?Ana, L.

Purpose: SARS-CoV-2 infection is currently inserted in a pandemic situation. Its clinical presentation is diverse and may present with associated neurological complications. Among the complications described, central venous thrombosis appears as an important cause, given its severity and poor prognosis when left untreated.

Methods: A previous healthy female patient, 37 years old, sought care due to visual blurring in both eyes for 1 month. She reported an episode of acute respiratory syndrome caused by SARS-CoV-2 infection in the same period, requiring hospitalization. In the first evaluation, she presented best corrected visual acuity of 20/20 in both eyes, with normal anterior biomicroscopy and pupillary reflex, but with papilledema on funduscopy. Serology for syphilis, rheumatoid factor, anti-ENA and antinuclear antibodies were all negatives. Cranial computed tomography angiography showed filling defect in the left sigmoid sinus and jugular bulb, as well as partially empty sella turcica, compatible with central venous thrombosis associated with possible intracranial hypertension. Hospitalization was performed and anticoagulation with oral warfarin and heparin in a continuous infusion pump was started with daily coagulogram monitoring. After eight days of hospitalization and with control of laboratory parameters, the patient was discharged from the hospital and started to be followed up in the hematology and neurophthalmology clinic.

Results: Central venous thrombosis has been reported in patients with SARS-CoV-2 infection. In a recent retrospective study¹, an incidence of 8.8 per 10,000 individuals was observed during a 3-month follow-up. In only 30% of cases, there were well-established risk factors, with the vast majority of patients having no previous thrombophilia or history of thrombosis². Computed tomography is an essential diagnostic tool, with studies showing that the sigmoid sinus is the second most affected site. Treatment involves administering anticoagulants.

Conclusion: Therefore, central venous thrombosis associated with SARS-CoV-2 infection is a rare but present entity that should always be considered as a differential diagnosis.

Keywords: Central Venous Thrombosis; SARS-CoV-2; Intracranial complications.

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104. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Maria Gabriela Dourado de Melo Gusmão**

R1

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CEP Number: 4038002

5. ABSTRACT (REQUIRED):

Title: Cryptococcal choroiditis in a patient with recent AIDS diagnostic: case report

Author and Co-authors: Authors: Gusmão, Gabriela, Macedo, Guilherme, Souza, Carlos Eduardo

Purpose: To report an uncommon ocular manifestation of systemic disease. Case of a patient, with a recent HIV diagnosis, presenting cryptococcal choroiditis.

Methods: Review of medical record.

Results: Male patient, 27 years old, presented to the clinic ER complaining of intermittent frontal headache, weight loss, evening fever, progressive dyspnea and dry cough for the last 3 months followed by acute vision lost. In his ophthalmologic exam he had a visual acuity of counting fingers at 1,5m in both eyes, a normal anterior biomicroscopy exam without anterior chamber inflammation and in his fundus examination, subretinal yellowish plaque lesions in macula and vascular tortuosity. He had a positive HIV rapid antibody and RNA test, with CD4 of 1. Lumbar puncture and blood culture tests revealed positive for Cryptococcus. He also had an axillary lymph node and a pharyngeal biopsy positive for cryptococcus. In this context, he started the induction therapy for cryptococcal meningitis with Amphotericin B deoxycholate (1mg/kg IV daily) plus fluconazole (800 mg daily IV) followed some weeks by the start of antiretroviral therapy. After starting treatment, the patient have improved the visual acuity for 20/20 in the right eye and 20/60 in the left eye.

Conclusion: Since Cryptococcus neoformans has been reported as the most common cause of infectious choroiditis in HIV patients, its investigation and a complete ophthalmologic examination are essential for a rapid start of treatment in patients presenting low visual acuity and signs of choroidopathy. Differential diagnoses also have to be promptly investigated as other etiologies can make opportunistic infections in HIV patients.

Keywords: Choroiditis; Cryptococcus; HIV;

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THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

105.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Flavio de Avila Fowler**

R2

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CEP Number: 0534/2018

5. ABSTRACT (REQUIRED):

Title: Clinical findings of facial movement disorders in the 2 largest ophthalmological reference centers in Brazil

Author and Co-authors: Flavio Fowler, Midori H. Osaki, Cristina Yabumoto, Janaina Brabo and Tammy H. Osaki

Purpose: Blepharospasm (BS) and hemifacial spasm (HFS) are two distinct presentations of facial movement disorders, treated with botulinum toxin applications. There are no significative data about BS and HFS patients in Brazil. The present study aims to describe the clinical profile and treatment status of patients with these conditions treated in the two largest ophthalmologic services in Brazil.

Methods: The charts of BS and HFS patients treated with periodic applications of botulinum toxin at the Departments of Ophthalmology at the Federal University of S. Paulo (UNIFESP) and University of S. Paulo (USP) were reviewed. The following information was collected: gender, age, age at diagnosis, comorbidities, type of dystonia, clinical features and treatment details.

Results: The charts of 149 patients were reviewed. The majority of patients were female (69.1%). Mean age was 70.68 ± 10.95 years (42-100 years old), mean age at diagnosis was 60.46 ± 12.98 (24 to 92 years). Blepharospasm was the most frequent movement disorder, found in 75 (50.3%) of patients. Hemifacial spasm corresponded to 44.3% of patients, while Meige's Syndrome composed 5.4% of cases. Mean duration of disease was 6.49 ± 5.84 years (1 month and 30 years).

Conclusion: Patients with BS and HFS need botulinum toxin applications periodically due to the presence of involuntary eyelid spasms that limit their daily activities and social interaction. There is a paucity of data regarding the clinical features and treatment details in Brazil. Because our study provides information regarding the clinical features of the patients treated in the 2 largest ophthalmological reference centers in the state, it may reflect the clinical characteristics of the patients from the state of S. Paulo who present these conditions. Epidemiological studies and studies performed in other regions of the country are needed for further considerations.

Keywords: blepharospasm; hemifacial spasm; botulinum toxin

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

(CO) CORNEA AND EXTERNAL DISEASE

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Conclusion
Keywords
E-Poster

106.FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 04042-003

5. ABSTRACT (REQUIRED):

Title: Acute Corneal Hydrops Presenting in a Patient Previously Submitted to Crosslinking

Author and Co-authors: Carvalho, Frederico Galvani Harckbart, Murad, Gabriel Ferrante Abou, Boro, Renata Cavalcanti Portela

Purpose: To report an uncommon presentation of acute hydrops in a patient with advanced keratoconus, even though a crosslinking procedure has been performed 3 years before the complication in the affected eye.

Methods: Review of medical record.

Results: A 21 year old female patient with past medical history of keratoconus in both eyes presented to the ophthalmologic emergency room with sudden loss of visual acuity, pain and conjunctival hyperemia in the right eye. In her ophthalmologic exam she had a visual acuity of counting fingers at 2 meters in the OD and 20/50 in the OS. In the slit-lamp examination of the right eye there was a central opacification of the cornea, associated with edema of 4+, suggestive of acute hydrops. There was no positive seidel test. The patient has been treated with topical solution of NaCl 5%, timolol and injection of C3F8 in the anterior chamber. Then the patient had a subjective improvement of the visual acuity in the right eye and progressive improvement of the edema. But three years before the referred complication, the patient underwent a crosslinking procedure in both eyes, since she had advanced keratoconus with progressive worsening. It is known that crosslinking is almost totally effective in preventing acute hydrops, especially in the first seven years, with only some case reports showing outcomes like this one.

Conclusion: Despite being a rare event, acute corneal hydrops in patients that have been submitted to crosslinking is a possible outcome and this diagnosis should be considered in these individuals, according to the clinical presentation. It is very important that these cases reach the scientific database, so the risk factors to its occurrence can be properly identified and then avoided or treated.

Keywords: Hydrops; Crosslinking

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Results,
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E-Poster

107.FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 4020040

5. ABSTRACT (REQUIRED):

Title: ATYPICAL MALIGNANT CHOROIDAL MELANOMA WITH BONE-TISSUE METAPLASIA

Author and Co-authors: Glauco Sérgio Avelino de Aquino, Mariana Araújo Dias, Klaus Anton Tyrrasch, Melina Correia Morales

Purpose: Malignant melanoma of the uveal tract is the most common primary intraocular malignancy. Melanomas tend to arise from the sixth decade of age, with increasing incidence thenceforward. There is a wide spectrum of clinical presentation, being the accurate clinical examination the main diagnostic method. The purpose of this study is to present a case of choroidal melanoma with ciliary body infiltration and rare bone metaplasia.

Methods: We reviewed the patient medical record to elaborate this report.

Results: 48 years old, Caucasian, male patient presented at Ophthalmology Emergency Room with a 5-month history of decrease in visual acuity of the right eye, associated with redness and pain on the same eye for 10 days. The visual acuity examination of the right eye showed no light perception, and the intraocular pressure (IOP) was 55mmHg. On slit-lamp biomicroscopy, chemosis and a pigmented mass inferiorly in the anterior chamber were observed. In the left eye, there were no alterations. The hypothesis of secondary acute glaucoma was considered, and the patient was referred to the ocular tumor specialist with hypotensive eyedrops. Ultrasound of the right eye was carried to confirm the finding and assess the size of the mass and extent of intraocular involvement, showing a heterogeneous, vascularized, choroidal lesion occupying 85% of the vitreous chamber, with its anterior margin in contact with lens causing its subluxation. Ultrasound biomicroscopy (UBM) confirmed anterior chamber and angle impairment. These findings suggested the diagnostic hypothesis of malignant choroidal melanoma. Further tomography screening of extra-ocular metastasis did not find suspicious masses and the patient underwent enucleation surgery of the right eye. Histopathological examination evidenced uveal epithelioid melanoma with necrosis and ciliary body involvement, with focuses of bone-tissue metaplasia. There was no scleral and extra-ocular impairment.

Conclusion: The patient reported presented with unspecific complaints and the examination evidenced a voluminous mass in the right eye, with anterior chamber impairment, which suggests late progression of the tumor. The epithelioid pattern suggests a poorer prognosis, and the large extent of the mass made it impossible to opt for a less-invasive treatment such as brachytherapy. Bone-tissue metaplasia is uncommon, with few reports worldwide, evidencing the rarity of the case reported. This case demonstrates the importance of thorough examination and early diagnosis and follow-up of patients, even with unspecific complaints, to prevent the progression of the tumor and worsening of its prognosis.

Keywords: choroidal melanoma, bone-tissue, metaplasia

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108. FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 5505/2021

5. ABSTRACT (REQUIRED):

Title: Prevalence of Depression and Anxiety in Glaucoma Patients Submitted to Different Modalities of Treatment

Author and Co-authors: G.A. SAMICO, T.M. FIDALGO, T.S. PRATA, S.H. TEIXEIRA, A. PARANHOS JR., C.P.B. GRACITELLI

Purpose: To determine the association between the proposed glaucoma therapy (hypotensive eye drops, surgery or selective laser trabeculotomy) and depressive / anxious symptoms. Also to assess the relationship between these symptoms and specific visual field or optic coherence tomography defects (OCT)

Methods: This was a prospective cross-sectional study including glaucoma patients from the Glaucoma division of the Federal University of Sa?o Paulo (UNIFESP). After completing the informed consent form, patients were submitted to demographic data collection and complete ophthalmological examination. Then, they responded to the Beck Depression Inventory II (BDI-II) and the Beck Anxiety Inventory (BAI). Previous OCT and standard automated perimetry test results were evaluated to assess disease severity and type of glaucoma visual field defect. Subjects were stratified into groups according to glaucoma therapy proposed. Clinical and demographic data was also analyzed to correct as potential confounder factors

Results: Three eye of 3 patients with glaucoma were included, 2 (66.6%) submitted to eye hypotensive eye drops regimen and 1 (33%) underwent glaucoma surgery. The mean age was 72.33 ± 9.81 years old, all of them were men and the standard automated perimetry (SAP) mean deviation (MD) was -7.99 ± 0.57 in our sample. Two of our patients presented with a central superior visual field defect, and one with peripheral scotoma. The BDI mean score was 30.66 ± 5.51 , revealing the presence of clinically relevant depressive symptoms in our population. These symptoms of depression were not correlated to the MD, although our analysis shows a tendency towards this result ($P = 0.058$). Mean BAI score was 7.33 ± 3.79 , meaning symptoms of anxiety were not clinically significant, and showing no correlation with visual field parameters

Conclusion: In our study, patients with worse MD had a tendency of worse depressive symptoms, although this was not statistically significant. This result could be explained by the decline of the quality of life expected in advanced glaucoma. There was no relationship between type of treatment and psychiatric symptoms yet. A larger sample is needed to determine the parameters that most correlate to anxiety and depression among glaucoma patients

Keywords: glaucoma, depression, anxiety

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109.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **JOSE RODOLFO MARIANI RADAELI**

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CEP Number: 4042002

5. ABSTRACT (REQUIRED):

Title: Activation of susac syndrome after covid vaccination (CorovaVac)

Author and Co-authors: Radaeli, José Rodolfo, Santana, Letícia

Purpose: to report an uncommon presentation of Susac syndrome activation after patient underwent second dose of inactivated SARS-Cov-2 vaccine. Case of patient diagnosed with Susac Syndrome after presenting cognitive disorders, tinnitus and superior member paresthesia one week after the second dose of the vaccine and then two weeks after, she presented superior visual scotoma on the left eye.

Methods: Review of medical record of Hospital São Paulo

Results: A healthy 27-year-old, caucasian, female, born in Mogi das Cruzes - São Paulo, resident physician in head and neck surgery, was admitted in the ophtalmology department with a history of sudden visual scotoma in the upper visual field of the left eye for 3 days, painless, two weeks of SARS-Cov-2 vaccine (CoronaVac). Prior to the current complaint she presented cognitive disorders, tinnitus and superior member paresthesia one week after the second dose of inactivated SARS-Cov-2 (CoronaVac) and eight months after COVID-19 infection with positive SARS-Cov-2-PCR. Magnetic Resonance Imaging showed inflammatory lesions with hypersignal in T2/Flair in the corpus callosum, brainstem and superior frontal gyru. The Arteriography showed areas of occlusion and vasculitis, with negative workup for infectious autoimmune disease. RT-PCR for COVID-19 was negative. She received EV methylprednisolone 1g/day for 5 days with recover of neyrological symptoms. The diagnosis of Susac Syndrome was made and treated with intravenous imunoglobulin/ The best-corrected visual acuity was 20/20 with branch retinal artery occlusion in the left eye. The SD-OCT showed hyperreflective bands in internal retina. OCT-A and fluorescein angiography showed delayed arterial filling in non-perfused temporal on the left eye. The patient remained with a upper visual temporal scotoma in the left eye, corresponding to the area of the branch retinal artery occlusion, but referred an improvement after the treatment

Conclusion: Susac Syndrome, also know as retinal-cerebral-cochlear disease, is an uncommon condition that needs to be consideres as a different diagnosis when an unexplained visual field or visual acuity loss is detected in a patient with no prior comorbidities. The triad of clinical symptoms that may not all be present at initial stages include diffuse encephalopathy, branch retinal artery occlusion, and sensorineural hearing loss. Although the etiology and pathogenesis of SS are not clearly understood, autoimmune processes, triggered by the vaccine, leading to the damage and inflammation-related occlusion of the microvessels in the brain, retina, and inner ear may play a causal role

Keywords: Susac syndrome; covid; vaccine; coronavac

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110.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Juan Fulgencio Welko Mendoza**

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CEP Number: 1271/2018

5. ABSTRACT (REQUIRED):

Title: Penetrating ocular trauma in elderly patients: A Brazilian experience

Author and Co-authors: Mendoza, Juan Fulgencio Welko, Itikawa, Ana Carolina Yumi, Zago, Lucas Ribeiro, Nakayama, Luis Filipe, Bergamo, Vinicius Campos, Moraes, Nilva Simeren Bueno

Purpose: To evaluate epidemiological and prognostic factors in penetrating traumas among elderly patients admitted in the emergency room at a Brazilian tertiary hospital from January 2015 to June 2020.

Methods: We performed a cross-sectional study with retrospective analysis of medical records from the ophthalmological emergency room at Sao Paulo Hospital, Federal University of Sao Paulo (Brazil), a tertiary center, from January 2015 to June 2020. We analyzed all charts with the code S05 - injury of eye and orbit from the International Classification of Diseases 10th Revision. Patients with a history of penetrating ocular trauma with more than 60 years old were included. This study applied the Birmingham Eye Trauma Terminology System (BETT) classification in the classification of penetrating ocular traumas. (Kuhn et al. 2004). In statistical analysis, a univariate descriptive analysis applied the relevant statistical tests according to the nature and scale of measurement of the variables. Measures of central tendency and dispersion were considered in quantitative variables, while for qualitative variables, proportions calculation was considered.

Results: Eighty-three patients were evaluated with history of penetrating ocular trauma from January 2015 to June 2020. Penetrating ocular trauma corresponds to 20.4% of all ocular trauma among elderly patients during this period. The mean age of patients was 70.69 years. Male correspond to 70,73% of all patients and 29.27% were female. In ethnic group, 65.1% caucasian, 8.4% black, and 26.5% mixed race. The most common cause of traumas was external agent trauma (49.4%), fall (22.9%), and physical aggression (12.1%). Trauma occurred in the right eye in 37.8% of cases and left eye in 62.2%. Among ocular procedures, the most common was anterior chamber reconstruction in 46.7% of cases, followed by evisceration in 20% of cases and scleral suture in 18.3%. Mean hospitalization time of 2.2 days. 81,7% seek for medical attention on the first week after trauma and 30,48% of them did it within the first day of the event.

Conclusion: According to our study, more attention should be paid to the septuagenarian population and preventable measures are needed against external agent trauma and falls.

Keywords: penetrating ocular trauma; geriatric; epidemiology

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111.FIRST (PRESENTING) AUTHOR (REQUIRED):

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5. ABSTRACT (REQUIRED):

Title: Evaluation of Eye Changes in Patients with Peripheral Facial Paralysis

Author and Co-authors: Julia Harumi Iwakura, MD, Irineu Kenji Ogoshi Junior, MD, Midori Hentona Osaki, MD, PhD, José Ricardo Gorgel Testa, MD, Tammy Hentona Osaki, MD, PhD

Purpose: Peripheral facial palsy is a disease resulting from peripheral damage of the seventh cranial nerve, with varied etiology and presentation. The main etiologies are infectious, traumatic, neoplastic, congenital and secondary to systemic conditions, with emphasis on infectious and traumatic etiologies as the main ones. Despite being classically described as idiopathic, studies have shown relationships between Bell's PFP and herpes simplex virus type I infection. Paralysis of the facial mimic muscles can lead to impairment of the reflex blink mechanism, with possible subsequent ocular involvement. The main ocular involvement is evaporative dry eye, characterized by tear film instability leading to ocular symptoms and defect in the ocular surface. The classification of dry eye involvement can be performed by evaluating the patient's signs and symptoms, dividing them into different severity groups. For the treatment of the ocular condition, there is great therapeutic variability, ranging from clinical treatment to surgical treatments, due to the great variability in the clinical presentation of the condition. The study aims to evaluate the incidence, severity of eye involvement and blink changes in patients with PFP treated at the Department of Otorhinolaryngology, Hospital São Paulo / Federal University of São Paulo. It is hoped to obtain more information on the incidence, severity of ocular symptoms and blinking changes in patients with per

Methods: A prospective study will be carried out with evaluation of patients seen as new cases at the PFP outpatient clinic of the Department of Otorhinolaryngology, Hospital São Paulo / Federal University of São Paulo for 1 year. Ophthalmological evaluation will be performed with anamnesis, dry eye questionnaire (OSDI translated into Portuguese), Schirmer test, evaluation of anterior biomicroscopy to assess the ocular surface with fluorescein, rose bengal, and tear film rupture time. The dynamics of blinking of these patients will be evaluated by recording spontaneous blinking for 3 minutes, using a smartphone camera (Iphone, Apple Inc).

Results: In progress

Conclusion: In progress

Keywords: Peripheral Facial Paralysis

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112.FIRST (PRESENTING) AUTHOR (REQUIRED):

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CEP Number: 1075/2020

5. ABSTRACT (REQUIRED):

Title: Epidemiology of Pediatric Ocular Trauma

Author and Co-authors: Carvalho, JJ, Ribeiro, LZ, Fares, NT, Ambrogini, NSM

Purpose: The aim of this study is to characterize the epidemiology and characteristics of ocular trauma in children in an ophthalmologic emergency of reference at a university hospital in São Paulo, such as the population at greatest risk and trauma mechanisms, identifying causal factors and contributing to awareness about the matter and determination effective methods to reduce preventable causes.

Methods: Observational and retrospective study, analyzing medical records of patients from 0 to 15 years old presenting with ocular trauma history from October 2009 to March 2020 at an reference ophthalmological emergency room. Those with enough data were included and evaluated for the following parameters: age, sex distribution, data and local of injury, involved eye, classification of injury, mechanism of injury, entrance and final visual acuity, anterior segment findings, fundus examination and procedures performed. Ages were ranged in groups according to previous studies. Data underwent descriptive analyses and diagnosis classification according to The Birmingham Eye Trauma Terminology System (BETT).

Results: Out of 1320 children evaluated, 1165 (88.26%) were included for analysis, the other 155 children were excluded due to incomplete data. Mean age at presentation was 7,9 years. The male:female ratio was of 1,79:1. The left eye was involved in 570 (48,93%) children, the right eye in 558 (47,90%) and both eyes in 37 (3,17%). Diagnosis classification is divided according to the BETT's classification. It was also accounted 120 cases of ocular burn injury (10.30%) that are not included at the BETT classification. The mechanisms of ocular injury are multiple including household items, external material made of wood, metal, stone, fall, firework, animal accident and leisure item such as toys. Further analysis of mechanisms of ocular injury, visual acuity and treatment required are in progress and will be presented by the time of the congress.

Conclusion: Ocular trauma in childhood was more frequent in the male preeschooling child. Closed globe injuries predominated. By showing the population at greatest risk and trauma mechanisms, identifying causal factors and contributing to awareness about the topic, we contribute to prevention for ocular trauma in childhood. The mechanisms of injuries and visual comparison discussion will be presented.

Keywords: Pediatric ocular trauma, epidemiology, eye injuries.

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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THEME:

Infeccion
Inflammation
Angiogenesis
Imaging
Cell therapy

FORMAT:

Abstract should contain:

Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
E-Poster

113.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Ludmila Nascimento P Silva**

R4

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CEP Number: 0

5. ABSTRACT (REQUIRED):

Title: Analysis of riboflavin concentration in aqueous humor and in human corneas submitted to corneal transplantation after oral absorption.

Author and Co-authors: SILVA, L. N. P., TZELIKIS, P. F. M, Sousa, L.B

Purpose: Evaluate and compare the concentration of riboflavin in the corneas of patients who will be transplanted, with a group taking a daily intake of 400 mg for a minimum period of 60 days before the corneal transplant and a control group without ingesting riboflavin.

Methods: This therapeutic intervention, prospective, randomized and comparative study. Thirty patients will be evaluated, with a diagnosis of keratoconus, of both genders, from the Department of Ophthalmology and Visual Sciences, Paulista Medical School, Federal University of São Paulo, who are on the waiting list for corneal transplantation, with indication for penetrating or anterior lamellar transplantation. Participants will be divided, according to randomization list, into 2 groups: Group 1: 15 patients with keratoconus who will undergo a daily intake of 400 mg for a minimum period of 60 days before corneal transplantation Group 2: 15 patients with keratoconus, that will not receive riboflavin. During corneal transplantation, aspiration of 1ml of aqueous humor of the patient will be performed, which, together with the corneal button of the trepanned host, will be sent for detection and dosage of riboflavin through Elisa.

Results: In progress

Conclusion: In progress

Keywords: Keratoconus; crosslinking; oral riboflavin; elisa

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114.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Mariana Araujo Dias**

R2

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CEP Number: 04.003-00

5. ABSTRACT (REQUIRED):

Title: Eyelid tumors: clinical features and management in a reference center.

Author and Co-authors: Dias, M. A, Nicolau, Z. F. M., Osaki, T.H., Osaki, M.H.

Purpose: To analyze patients' profile and surgical management involving tumor resection and associated eyelid reconstruction at the division of Oculoplastics at Federal University of São Paulo ? UNIFESP.

Methods: Retrospective study with review of medical records of patients who underwent tumor resection ? with or without eyelid reconstruction ? from January 2014 to December 2020 at the division of Oculoplastics at Federal University of São Paulo ? UNIFESP. Gender, age, race, tumor topography, type of surgery and pathological type of tumor were analyzed.

Results: Charts of 289 consecutive patients who underwent tumor resection surgery from 2014 to 2020 were retrospectively reviewed. When it concerns to gender, women were the majority (57%). This study covered patients aged three to ninety two years old, mean age was 57.6 years. Race was divided in caucasian (58%), brown skinned (19%), afrodescendant (5%) and other (18%). All tumors were analyzed at the department of pathology at UNIFESP. A greater number of cases were benign tumors (54,8%), such as papiloma, chalazion, nevus, apocrine hydrocystomas and seborreic keratosis. Basal cell carcinoma (65%), squamous cell carcinoma (29%) and sebaceous cell carcinoma (6%) represented, in descending order, the most frequent types among the malignant tumors. Shaving and tumor resection with direct approach were the mostly performed types of surgery. In addition, due to the higher prevalence of eyelid malignancies in the lower eyelids, Hughes tarsoconjunctival flap was the main reconstruction procedure (30,7%), followed by "sandwich" eyelid reconstruction technique (21,8%) and Tenzel semicircular advancement flap (10,2%).

Conclusion: In this study, we performed a wide overview about patients' profile and management for eyelid tumors in a reference center. Benign tumors comprised the most frequent tumors observed. Among malignant conditions, the lower eyelid was the most frequent tumor topography, and basal cell carcinoma was the most frequently observed, confirming literature data, although in a lower percentage than in countries with predominantly caucasian populations.

Keywords: Eyelid tumor, eyelid reconstruction, Oculoplastics

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Purpose
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Results,
Conclusion
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115.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Mariana Antunes Davi**

R3

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CEP Number: 51817421

5. ABSTRACT (REQUIRED):

Title: Analysis of the clinical features of patients undergoing surgical treatment for blepharoptosis in a Tertiary Hospital

Author and Co-authors: Mariana Antunes Davi, Midori H. Osaki, Tammy Hentona Osaki

Purpose: The purpose of this present study was to evaluate the clinical features of patients with blepharoptosis undergoing surgical treatment at the Division of Oculoplastics of the Department of Ophthalmology at EPM/UNIFESP.

Methods: This was a retrospective analysis of the clinical characteristics of patients with blepharoptosis who underwent surgical correction at the the Division of Oculoplastics of the Department of Ophthalmology at EPM/UNIFESP from January 2018 to August 2021.

Results: One hundred twenty nine eyelids of 92 patients were surgically treated for blepharoptosis during the studied period. The mean age was 38 years-old and no predilection for gender was observed. The most prevalent race was white (45%) followed by mixed race (29%). Bilateral involvement was present in 29% and unilateral in 71% of sample. The blepharoptosis was congenital in 45% of patients, while 55% of the cases were acquired. Simple congenital ptosis was the most frequent type among congenital etiologies (78%), and aponeurotic ptosis was the most common acquired type (71%). More than half of congenital ptosis were severe degree (margin reflex distance negative, 54%) and had poor (36%) to fair (49%) levator muscle function (LF). Among acquired ptosis, 53% had moderate degree (margin reflex distance between zero and two millimeters) and the majority (79%), had good LF.

Conclusion: Blepharoptosis can have several consequences for the patient, from functional impact, such as induction of astigmatism leading to amblyopia, to psychological concerns including bullying during childhood, negatively impacting social life. In order to achieve better results with surgical correction, it is extremely important to clarify the pathological mechanisms as well as the patient's clinical characteristics.

Keywords: blepharoptosis, ptosis, eyelid drooping, etiology, congenital ptosis.

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Imaging
Cell therapy

FORMAT:

Abstract should contain:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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116.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Natalia - Mussi**

PG1

e-mail: natalia_mussi@yahoo.com.br

CEP Number: 0

5. ABSTRACT (REQUIRED):

Title: Mitochondrial and metabolic alterations in diabetic corneal epithelial cells

Author and Co-authors: Natalia Mussi, Whitney L Stuard, Danielle M Robertson and Mauro Campos

Purpose: Mitochondrial dysfunction is considered a central feature underlying diabetic complications. The purpose of this study was to characterize mitochondrial and metabolic alterations in primary cultured diabetic human corneal epithelial cells (HCECs) and in telomerase-immortalized human corneal epithelial (hTCEpi) cells exposed to hyperglycemic and hyperosmotic stress.

Methods: To determine the effects of diabetes on mitochondria and metabolism, donor human corneas from diabetics were obtained from Tissue Transplant Services at UT Southwestern Medical Center. Primary cultures were generated using an established lab protocol. HCECs and hTCEpi cells were cultured in a defined serum-free keratinocyte growth media containing 6 mM glucose. To determine the effects of hyperglycemia on hTCEpi cells, cells were cultured for 24 hours, 7 or 14 days in media containing an additional 19 mM glucose. Cells supplemented with 19 mM mannitol were used as an osmotic control. Mitochondrial morphology and polarization were assessed using MitoTracker and TMRE, respectively. Metabolic changes were quantified in real time using a Seahorse metabolic flux analyzer. Cell cycle was determined by staining with Propidium Iodide and analyzed using a Celigo imaging cytometer.

Results: Mitochondrial damage is evident in primary cultured corneal epithelial cells harvested from diabetic corneas. The hTCEpi cells subject to acute hyperglycemia failed to show abnormalities in growth, cell cycle control, migration, and metabolism. Chronic exposure of corneal epithelial cells to hyperglycemia (14 days) triggered cell cycle arrest in G0/G1. In contrast to this, cells cultured in either glucose or mannitol exhibited a reduction in glycolysis by day 7. Similarly, glycolysis was also decreased following exposure of hTCEpi cells to salt-induced hyperosmolarity for 24 hours.

Conclusion: Increased osmolarity alters metabolic homeostasis through changes in glycolytic activity. Further studies are underway to determine the effects of hyperglycemia on mitochondrial respiration.

Keywords: Diabetic Keratopathy, cornea, diabetes, epithelial cells

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THEME:

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Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords
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117.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Natasha Ferreira Santos da Cruz**

PGI

e-mail: natasha_cruz27@hotmail.com

CEP Number: 12806619

5. ABSTRACT (REQUIRED):

Title: Ocular inflammation after agitation of siliconized and oil-free syringes: a randomized, double blind, controlled clinical trial

Author and Co-authors: Natasha Ferreira Santos da Cruz, Murilo Ubukata Polizelli, Gustavo Barreto Melo, Felipe Picanço Muralha, Octaviano Magalhães, Mauricio Maia, Michel Eid Farah

Purpose: Noninfectious endophthalmitis may be misdiagnosed, leading to serious clinical implications. So far, its causative factors remain unknown. Therefore, this study assessed the role of agitation of the syringe in the development of inflammation after intravitreal injection of Aflibercept.

Methods: A randomized, double-blind, controlled clinical trial included subjects with an indication of intravitreal antiangiogenic therapy prior to vitrectomy for proliferative diabetic retinopathy. Aflibercept was injected 48 hours before surgery. Control group received the injection without agitation while the intervention group was injected with a previously agitated syringe by flicking either with a siliconized (SR) or with a silicone-oil free syringe (HSW-normject). The primary endpoint was the presence of anterior chamber (AC) cells, assessed at baseline and 48 hours later. Aqueous samples were collected at both time points and underwent cytometric bead array analysis for quantification of interleukins and chemokine.

Results: Forty-one individuals were included (21 in agitation and 20 in non-agitation groups). None of the included eyes presented baseline signs of AC cells, hyperemia or pain complaint. 19% of control group and 80% of agitation group showed AC cells 48 hours after injection of Aflibercept ($P=0.009$, Fisher's exact test). Agitation group had an 18-fold higher likelihood of AC cells than unagitated controls ($OR=18.00$, 95%CI: 2.04 ? 159.09, $p=0.009$). There were no differences in the mean variations of all cytokines and chemokines by agitation status. However, there was a marginally significant difference between the mean variations of IP-10 ($p=0.057$) and IL-8 ($p=0.058$) in the SR syringe.

Conclusion: This clinical trial discloses a potential role of agitation in the development of inflammation after an intravitreal injection of aflibercept. These findings have an important clinical implication for all healthcare practitioners who perform injection.

Keywords: Chemokines; Cytokines; Intravitreal injection; Silicone oil; Syringe

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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Abstract should contain:

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Purpose
Methods
Results,
Conclusion
Keywords
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118.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **NELSON CHAMMA CAPELANES**

PG0

e-mail: nelsonchamma@gmail.com

CEP Number: 903306188

5. ABSTRACT (REQUIRED):

Title: Evaluation of macular vessel density using optical coherence tomography angiography in patients with diabetic macular edema treated with intravitreal biodegradable dexamethasone implants

Author and Co-authors: Author: Nelson Chamma Capelanes Advisor: Prof Dr. Caio Regatieri
Co-Advsor: Prof Dr. Fernando Malerbi

Purpose: This study aimed to evaluate anatomic changes in macular vessel density and functional outcomes of EMD patients who underwent treatment with intravitreal biodegradable dexamethasone implant.

Methods: This was a prospective interventional study. Patients with DME were recruited from UPO Oftalmologia, São Paulo, Brazil, from Jan 2019 to Aug 2020 and were consecutively followed up for at least 1 year. Subjects with DME identified with clinical examination (slit lamp fundus biomicroscopy) and confirmed by OCT were recruited under a protocol approved by the UNIFESP Ethics Committee. All patients provided informed written consent. Inclusion criteria were (1) subjects with diabetes mellitus types 1 and 2, (2) age above 18 years, (3) center-involved focal or diffuse DME with CMT $\geq 300 \mu\text{m}$ at baseline OCT, (4) best-corrected visual acuity ranging from 0.8 to 0.1 (0.1 to 1.0 LogMar), and (5) subretinal fluid on OCT. Exclusion criteria were (1) history of intraocular surgery (except cataract surgery after 3 months), (2) epiretinal membrane or vitreomacular traction, (3) glaucoma or intraocular pressure over 21 mmHg or use of topical or systemic steroids within the last 3 months, (4) systemic hemorrhagic disorders, (5) active ocular infections, (6) uncontrolled hypertension or pregnancy at the time of treatment, (7) history of eye surgery or DME treatment other than dexamethasone implant, such as intravitreal anti-VEGF, and (8) history of retina photocoagulation during follow-up. After confirming the presence of edema and quantifying of macular thickness, patients underwent visual acuity and contrast sensitivity testing with Snellen charts and Pelly-Robson (1

Results: - Macular Perfusion (vessel density): Improvement after injection (P-value' <0.001) - Macular Thickness: Decrease after injection (P-value' <0.001) - Visual Acuity: Improvement after injection (P-value' <0.001) - Contrast sensitivity: No Changes (P-value' >0.05)

Conclusion: Our study demonstrated an improvement in macular perfusion in areas without fluid after intravitreal implantation of dexamethasone, accompanied by an improvement in macular thickness and visual acuity with no changes in contrast sensitivity.

Keywords: OCT-Angiography; intravitreal dexamethasone implant; diabetes macular edema; macular perfusion;

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119.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Olivia Pereira Kiappe**

Fellow

e-mail: oliviakiappe@hotmail.com

CEP Number: 4039001

5. ABSTRACT (REQUIRED):

Title: Migration of retinal pigment epithelial cells simulating a congenital simple hamartoma of the retinal pigment epithelium: a case report

Author and Co-authors: Olívia Pereira Kiappe, MD, MsC *, Rodrigo Meirelles, MD, PhD*, Somaia Mitne, MD, PhD*

Purpose: To report a case of a 65-years-old woman with proliferative diabetic retinopathy with an acquired nodular, heavily pigmented lesion of the retina and retinal pigment epithelium (RPE) resembling congenital simple hamartoma of the retinal pigment epithelium

Methods: Informed consent for publication of clinical details and/or images was obtained from the patient. This case report followed ethical principles and has no funding or grant support.

Results: Congenital simple hamartoma of the retinal pigment epithelium (CSHRPE) is a rare benign congenital tumor. Clinically, patients are typically asymptomatic, but on long-term follow up, a decrease in vision acuity may occur. We report a case of a 65-years-old woman with proliferative diabetic retinopathy with an acquired nodular, heavily pigmented lesion of the retina and retinal pigment epithelium (RPE) resembling CSHRPE.

Conclusion: This case reports a possible RPE cells migration in a patient with diabetic retinopathy mimicking a CSHRPE.

Keywords: diabetic retinopathy, retinal pigment epithelium cells, congenital simple hamartoma

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Keywords

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120.FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: **Ramon Antunes de Oliveira**

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e-mail: ramonntt@gmail.com

CEP Number: 0686/2021

5. ABSTRACT (REQUIRED):

Title: HEAVY SILICONE OIL SURGICAL APPROACH AND RETROSPECTIVE CASE SERIES

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Purpose: To demonstrate the usefulness of heavy silicone oil (HSO) as an alternative to overcome the challenges of performing vitrectomy to treat rhegmatogenous retinal detachment with proliferative vitreoretinopathy (PVR) and the complications associated with commonly used vitreous substitutes (expandable gases and standard silicone oil) that promote inferior PVR and redetachments.

Methods: A retrospective, observational study was performed that analyzed 29 patients who underwent surgery in one center from August 2014 to April 2021, using HSO to treat rhegmatogenous retinal detachment with PVR or mixed tractional and rhegmatogenous diabetic retinal detachment.

Results: Among the 29 patients, 27 (93.1%) underwent surgeries due to rhegmatogenous retinal detachment and two (6.9%) for diabetic retinal detachment. At the final visit, 11 (37.93%) had vision worse than 20/400 (range, 20/25 to light perception). The difference in the logarithm of the minimum angle of resolution between the baseline and final visual acuities was significant ($P=0.036$). The vision improved in 18 (62.07%) patients at the end of follow-up. Twenty-three (79.3%) patients required hypotensive eye drops at the final follow-up, three (10.3%) patients required additional glaucoma surgeries.

Conclusion: HSO is useful in selective cases, especially those with complex rhegmatogenous retinal detachments. Careful attention during surgical removal prevents undesired complications.

Keywords: heavy silicone oil, proliferative vitreoretinopathy, rhegmatogenous retinal detachment.

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