27th RESEARCH DAYS

Postgraduate Program in Ophthalmology & Visual Sciences

December 11 - 12, 2025

Organization

Escola Paulista de Medicina

UNIFESP Universidade Federal de São Paulo

HOSPITAL SÃO PAULO

Sponsor

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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 and posters by residents, fellows and postgraduate students enrolled in the Postgraduate Studies Program in Ophthalmology and Visual Sciences. The entire meeting, including papers and posters, is 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 receives 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 **27th Research Days** | UNIFESP-EPM will be held in São Paulo, on December 11 and 12, 2025, at the **CEO Library, Botucatu Street**, **822** Please visit our homepage https://oftalmodapaulista.com.br/pg/mda/?p=526 for the complete Scientific Program and additional information.

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PROGRAM AT A GLANCE
December 11, 2025 – Thursday

8:00-8:10 AM	**OPENING REMARKS**	**Denise de Freitas, Ivan Maynart Tavares and Mauro Campos**
SESSION 1 **8:10-09:40 AM**	**PAPER PRESENTATION** **GLAUCOMA** **Moderators: Carolina Pelegrini, Augusto Paranhos Jr., Ivan Maynart Tavares and Tiago Prata**	
9:40-10:10 AM	**INVITED LECTURE** **Wallace Chamon** Development of a convolutional neural network interface for corneal profile assessment	
10:10-10:20 AM	**Questions and Answers**	
10:20-11:50 AM	**COFFEE BREAK and POSTER SESSION 1**	
SESSION 2 **11:50 AM-12:50PM**	**PAPER PRESENTATION** **CORNEA AND EXTERNAL EYE DISEASES** **Moderators: Lauro Oliveira and Ana Luisa Hofling-Lima**	
12:50-14:00 PM	**LUNCH BREAK**	
SESSION 3 **2:00- 2:35PM**	**PAPER PRESENTATION** **CORNEA AND EXTERNAL EYE DISEASES AND LABORATORY** **Moderators: Mauro Campos, Denise de Freitas and Luciene Barbosa de Sousa**	
2:40-3:10 AM	**INVITED LECTURE** **Renata Puertas** Glaucoma Care with Virtual Clinic Experience at Moorfields Eye Hospital	
3:10-3:20 AM	**Questions and Answers**	
SESSION 4 **3:20-4:15 PM**	**PAPER PRESENTATION** **LOW VISION, ORBIT, ELECTROPHYSIOLOGY, EPIDEMIOLOGY, OCULOPLASTICS SURGERY and OCULAR ULTRASOUND** **Moderators: Tammy Hentona Osaki, Solange Rios Salomão, Adriana Berezovsky and Norma Allemann**	
4:15-4:45 PM	**INVITED LECTURE** **Roseli Nomura** Most common mistakes when submitting a research project	
4:45-4:55 PM	**Questions and Answers**	
4:55-5:20 PM	**COFFEE BREAK and POSTER SESSION 2**	
SESSION 5 **4:20-5:00 PM**	**PAPER PRESENTATION** **STRABISMUS, REFRACTION SURGERY, REFRACTION-CONTACT LENSES AND OCULAR BIOENGINEERING** **Moderators: Paulo Schor and Mauro Campos**	
SESSION 6 **5:00-5:25 PM**	**PAPER PRESENTATION** **CATARACT** **Moderators: Wallace Chamon and Mauro Campos**	
5:30 PM	**END OF SESSION**	

December 12, 2025 – Friday

SESSION 7 **8:30-09:40 AM**	**PAPER PRESENTATION** **RETINA AND VITREOUS** **Moderators: Michel Eid Farah, Juliana Sallum and Luiz H. Lima**
09:40-10:10 AM	**COFFEE BREAK and POSTER SESSION 3**
SESSION 8 **10:10-11:50 AM**	**PAPER PRESENTATION** **RETINA AND VITREOUS** **Moderators: Caio Regatieri and Mauricio Maia**
10:50-11:20 AM	**INVITED LECTURE** **Rodrigo Antonio Brant Fernandes** Studying abroad: research fellowship, residency and clinical fellowship
11:20-11:30 AM	**Questions and Answers**
SESSION 9 **11:30-11:50 AM**	**PAPER PRESENTATION** **UVEITIS and ONCOLOGY** **Moderators: Cristina Muccioli and Norma Allemann**
12:05-12:35 AM	**INVITED LECTURE** **Luis Filipe Nakayama** Large language models landscape and applications for ophthalmology
12:35:12:45 PM	**Questions and Answers**
13:00 PM	**FINAL REMARKS AND AWARDS ANNOUNCEMENT** **Denise de Freitas, Ivan Maynart Tavares, Luiz Alberto Soares and Caio Regatieri**

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Information
Department of Ophthalmology and Visual Science
Federal University of São Paulo - Paulista School of Medicine - São Paulo Hospital
806 Botucatu Street – São Paulo, SP, Brazil
Phone: (+55-11) 5576-4981
e-mail: ppg.oftalmologia@unifesp.br

ORGANIZATION

Postgraduate Program Coordination

Denise de Freitas

Program Directors

Caio Vinicius Saito Regatieri

Scientific Committee

Adriana Berezovsky
Ana Luisa Hofling de Lima Farah
Augusto Paranhos Jr.
Carolina Pelegrini Barbosa Gracitelli
Caio Vinicius Saito Regatieri
Cristina Muccioli
Denise de Freitas
Ivan Maynart Tavares
José Álvaro Pereira Gomes
Juliana Maria Ferraz Sallum
Lauro Augusto de Oliveira
Luciene Barbosa de Sousa
Luiz Henrique Soares Gonçalves de Lima
Mauricio Maia
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Walton Nose

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Caio Vinicius Saito Regatieri
Luiz Alberto S. Melo Jr.
Luiz Henrique Soares Gonçalves de Lima

Poster Presentation Awards Committee

Luiz Alberto S. Melo Jr.
Wallace Chamon

Invited Speakers

Renata Puertas
Wallace Chamon
Roseli Nomura
Luiz Felipe Nakayama
Rodrigo Antonio Brant Fernandes

SCIENTIFIC PROGRAM

December 11, 2025 – Thursday

8:00-8:10 AM	**OPENING REMARKS**	**Denise de Freitas, Ivan Maynart Tavares and Mauro Campos**	
SESSION 1 **8:10-09:40 AM**	**PAPER PRESENTATION** **GLAUCOMA** **Moderators: Carolina Pelegrini, Augusto Paranhos Jr., Ivan Maynart Tavares and Tiago Prata**		
8:10-8:17 AM	Combined Use of Two Artificial Intelligence Programs for Glaucoma Diagnosis Using Fundus Photography	Gilvan Vilarinho da Silva Filho	PG1
8:20-8:27 AM	Gonioscopy-assisted Transluminal Trabeculotomy (GATT) versus Excisional Goniotomy with Kahook Dual Blade (KDB) Combined with Phacoemulsification in Open-Angle Glaucoma: Study Protocol for a Randomized Clinical Trial	Guilherme Barroso Guedes	PG1
8:30-8:37 AM	Deep Learning-Predicted RNFL Loss and Incident Glaucoma in the Canadian Longitudinal Study on Aging	Gustavo Albrecht Samico	PG1
8:40-8:47 AM	Reading with Glaucoma: Eye-Tracking Evidence from Three Investigations	Mariana Chiba Ikeda	PG1
8:50-8:57 AM	Efficacy and safety of continuous and micropulse transscleral cyclophotocoagulation in the treatment of refractory glaucoma: A randomized clinical trial.	Diogo Fajar Correia Landim	PG1
9:00-9:07 AM	Ahmed ClearPath® Versus Baerveldt® 250 mm2 for Refractory and High-Risk Glaucoma: Early Results from a Randomized Clinical Trial	João Victor Borges Gomes	PG1
9:10-9:17 AM	Retinal Ganglion Cell Loss and Patterns of Neuroretinal Rim Thinning at the Onset of Visual Field Defects in Glaucoma	Marcus Vinicius Prado Guerreiro Filho	PG1
9:20-9:27 AM	Machine Learning for Glaucoma Diagnosis and Visual-Field Progression Prediction Using the Harvard-GDP Dataset	Mauro César Gobira G. Filho	PG0
9:30-9:37 AM	Correlation between axial length and corneal biomechanical parameters, using the dynamic Scheimpflug analysis system in patients with primary open-angle glaucoma	Felipe Taveira Daher	PG1
9:40-10:10 AM	**INVITED LECTURE** **Wallace Chamon** Development of a convolutional neural network interface for corneal profile assessment		
10:10-10:20 AM	**Questions and Answers**		
10:20-11:50 AM	**COFFEE BREAK and POSTER SESSION 1**		
SESSION 2 **11:50 AM-12:50PM**	**PAPER PRESENTATION** **CORNEA AND EXTERNAL EYE DISEASES** **Moderators: Lauro Oliveira and Ana Luisa Hofling-Lima**		
11:50 -11:57 AM	Clinical outcomes and in vitro susceptibility analysis of fungal keratitis treated with adjunct Rose Bengal Photodynamic Antimicrobial Therapy at Escola Paulista de Medicina UNIFESP - São Paulo, Brasil	Aileen Miwa Tabuse	PG1
12:00-12:07 PM	Clinical Profiles in Sjögren's Disease: Autonomic Dysfunction and Its Functional Implications in a Cross-Sectional Study	Laura Caldas Santos	PG1
12:10-12:17 AM	Comparison of Donor Corneas With and Without Descemet Membrane in Deep Anterior Lamellar Keratoplasty With Intraoperative Perforation	Constantin Philippe Salha	PG1
12:20-12:27 AM	Jett Plasma Lift technology in the Treatment of Meibomian Gland Dysfunction	Vanessa Favero Demeda	PG1
12:30-12:37 AM	Use of Platelet-Rich Plasma as an Adjuvant to Prevent Recurrence After Surgical Excision of Ligneous Conjunctivitis Membranes	Italo Pena Oliveira	PG1
12:40-12:47 AM	Diagnostic accuracy of a deep learning model for pterygium detection in Barcelos, Brazilian Amazon	Diego Casagrande	PG1
12:50-14:00 PM	**LUNCH BREAK**		
SESSION 3 **2:00- 2:35PM**	**PAPER PRESENTATION** **CORNEA AND EXTERNAL EYE DISEASES AND LABORATORY** **Moderators: Mauro Campos, Denise de Freitas and Luciene Barbosa de Sousa**		

2:00-2:07 AM	Integrated molecular profiling of the tear film in keratoconus: interactions between inflammation, antioxidant regulation and metabolism associated with disease severity	Renato Galao Cerquinho Leca	PG1
2:10-2:17 PM	Host-Pathogen Interaction: Inflammatory Responses of Human Macrophages to Acanthamoeba polyphaga	Larissa Fagundes Pinto	PG1
2:20-2:27 PM	Cysts density assessment by IVCM before therapeutic keratoplasty	Luiz Guilherme Ito da Cruz	PG1
2:30-2:33PM	Electroporation and Structural Integrity of Contact Lenses: Spectrophotometric and Computational Image Analysis Across Variable Voltage Ranges	Raphael Barcelos	PG1
2:35-2:38 PM	Electroporation as treatment in corneal epithelial cells infected with *Acanthamoeba polyphaga*	Palloma Santiago Prates Pessoa	PG0
2:40-3:10 AM	**INVITED LECTURE** **Renata Puertas** Glaucoma Care with Virtual Clinic Experience at Moorfields Eye Hospital		
3:10-3:20 AM	**Questions and Answers**		
SESSION 4 **3:20-4:15 PM**	**PAPER PRESENTATION** **LOW VISION, ORBIT, ELECTROPHYSIOLOGY, EPIDEMIOLOGY, OCULOPLASTICS SURGERY and OCULAR ULTRASOUND** **Moderators: Tammy Hentona Osaki, Solange Rios Salomão, Adriana Berezovsky and Norma Allemann**		
3:20-3:27 PM	Impact of low vision rehabilitation with assistive technology devices on vision-related quality of life	Paula Baptista Eliseo da Silva	PG1
3:30-3:33 PM	Comparative Analysis of Extracellular Matrix Remodeling After Fractional CO2 Laser Treatment	Gustavo David Ludwig	PG0
3:35-3:42 PM	Ten-year Analysis of Ultrasound Biomicroscopic Biomarkers of Iris Nevus: parameters at presentation and follow-up visits	Mariana Borges Barcellos Dias	PG1
3:45-3:48 PM	Stereoscopic acuity in patients with inherited retinal diseases	Daniel Martins Rocha	PG1
3:50-3:53 PM	Epidemiological statistical analysis comparing public and private care at the Ophthalmology Emergency Room in the city of São Paulo, involving Hospital São Paulo x H.Olhos.	Pedro Antonio Nogueira Filho	PG1
3:55-3:58 PM	Near vision impairment and limited refractive coverage in adults from Barcelos, Brazilian Amazon	Ariane Pamela Luttecke-Anders	PG1
4:00-4:07 PM	Bone Cement Orbital Implants: A Prospective Study on Clinical Outcomes and Complications	Ivana Lopes Romero-Kusabara	PG1
4:10:4:13 PM	Retinal Ganglion Cell Function in Patients with diffuse and macular disease	Glaycielli Pereira Santos Mandaro de Assis	PG1
4:15-4:45 PM	**INVITED LECTURE - ROSELI NOMURA** Most common mistakes when submitting a research project		
4:45-4:55 PM	**Questions and Answers**		
4:55-5:20 PM	**COFFEE BREAK and POSTER SESSION 2**		
SESSION 5 **4:20-5:00 PM**	**PAPER PRESENTATION** **STRABISMUS, REFRACTION SURGERY, REFRACTION-CONTACT LENSES AND OCULAR BIOENGINEERING** **Moderators: Paulo Schor and Mauro Campos**		
4:20-4:27 PM	Augmented bimedial rectus recessions for DIET: The critical role of convergence amplitudes	Tais Couto Bernardes P Estrela	PG1
4:30:4:37 PM	Assessment of a Web-Based Application for Keratoconus Detection Using Corneal Axial Curvature Maps	Felipe Marques Taguchi	PG1
4:40-4:47 PM	Enhancing Clinical Confidence and Skills: Effects of Online Training in Pediatric Ophthalmology for Brazilian Ophthalmologists	Erika Mota Pereira	PG1
4:50-4:53 PM	Polydioxanone Membrane for Guided Conjunctival Tissue Reconstruction: An Experimental Model in Rabbits	Daniel Diniz Da Gama	PG1
4:55-4:58 PM	Real-world evidence of the use of Cloudscaper optotypes versus LEA symbols for virtual or digital visual acuity measurement in children aged 3 to 16 years	Cristiana Ronconi Lopes	PG1

SESSION 6 **5:00-5:25 PM**	**PAPER PRESENTATION** **CATARACT** **Moderators: Wallace Chamon and Mauro Campos**		
5:00-5:07 PM	Argentinian Flag Sign in Cataract Surgery: A Comprehensive Video Analysis	Vitor Dias Marin	PG1
5:10-5:17 PM	Reading Performance Following Contralateral Implantation of an Extended Depth of Focus (EDOF) IOL and a Hybrid EDOF Multifocal IOL	Arthur Buffara Van Den Berg	PG1
5:20:5:23 PM	Subjective visual quality after bilateral implantation of three diffractive trifocal intraocular lenses: a prospective randomized clinical trial	Ivan Corso Teixeira	PG1
5:25 PM	**END OF SESSION**		

SCIENTIFIC PROGRAM

December 12, 2025 – Friday

SESSION 7 **8:30-09:40 AM**	**PAPER PRESENTATION** **RETINA AND VITREOUS** **Moderators: Michel Eid Farah, Juliana Sallum and Luiz H. Lima**		
8:30-8:37 AM	Effectiveness of Psychotherapy Groups on Emotional Health and Visual Related Quality of Life in Patients with Inherited retinal dystrophies	Cecilia Francini Cabral de Vasconcellos	PG1
8:40-8:47 AM	CERKL related inherited retinal dystrophy in a Brazilian cohort: genetics and phenotype correlation	Erika Sayuri Yasaki	PG1
8:50-8:57 AM	Genetic characteristics of 30 Brazilian patients with inherited retinal dystrophies	Olivia Araujo Zin	PG1
9:00-9:07 AM	From Pixels to Embeddings: Efficient and Privacy-Aware Learning from the BRSET Ophthalmic Dataset	Luis Filipe Nakayama	Post-doc
9:10-9:17 AM	Intra-Practice Artificial Intelligence-Based Fundus Screening on Routine Ophthalmologic Workflow	Lucas Zago Ribeiro	PG1
9:20-9:27 AM	Clinical and Multimodal Imaging Findings in Extensive Macular Atrophy with Pseudodrusen (EMAP): A Systematic Review and Meta-Analysis	Mateus Pimenta Arruda	PG1
9:30-9:37 AM	The Use of Amniotic Membrane or Inverted Internal Limiting Membrane Flap for Large or refractory Macular Holes: a prospective, comparative study using microperimetry	Anna Carolina Araujo Pereira	PG1
09:40-10:10 AM	**COFFEE BREAK and POSTER SESSION 3**		
SESSION 8 **10:10-11:50 AM**	**PAPER PRESENTATION** **RETINA AND VITREOUS** **Moderators: Caio Regatieri and Mauricio Maia**		
10:10-10:17 AM	Meta-analysis: long/short-term efficacy of anti-VEGF vs. panretinal photocoagulation in preventing severe complications in proliferative diabetic retinopathy	Tiago Nelson Rassi	PG1
10:20-10:27 AM	Prospective and dichotomous study of biomarkers with swept-source OCT and OCT angiography in naive patients with diabetic macular edema.	Marcussi Palata Rezende	PG1
10:27-10:30 AM	Evaluation of the Vitamin D Ophthalmic Nanoemulsion	Keita Takagi	PG0
10:30-10:33 AM	Retinal OCT Metrics and Cognitive Performance in Individuals with Diabetes Mellitus	Frederico do Carmo Novaes	PG0
10:35-10:38 AM	Long term outcomes of Yamane Technique Combined with Pars Plana Vitrectomy in Various Indications: A Retrospective Study	Ricardo Danilo Chagas Oliveira	PG0
10:40-10:43 AM	AI-Driven Teleophthalmology Framework for Rapid Diabetic Eye Screening	Stefano Neto Jai Hyun Choi	PG1
10:45-10:48 AM	Performance of a small language model versus a large language model in answering Glaucoma frequently asked patient questions	Adriano Cypriano Faneli	PG0
10:50-11:20 AM	**INVITED LECTURE - RODRIGO ANTONIO BRANT FERNANDES** Studying abroad: research fellowship, residency and clinical fellowship		
11:20-11:30 AM	**Questions and Answers**		
SESSION 9 **11:30-11:50 AM**	**PAPER PRESENTATION** **UVEITIS and ONCOLOGY** **Moderators: Cristina Muccioli and Norma Allemann**		
11:20-11:27 AM	Clinical and Epidemiological Profile of Patients Treated for Ocular Tuberculosis: A 12-Year Review at HUCAM/UFES	Leticia Colodetti Zanandréa	PG0
11:30-11:37 AM	Ocular toxoplasmosis reactivation after ophthalmologic surgery: A clinical study comparing prophylaxis versus non-prophylaxis.	Vivian Cristina Costa Afonso	PG0
11:40-11:47 AM	Ophthalmological Structural Assessment in Adults Residing in the Municipality of Barcelos, Brazilian Amazon Region	Guilherme Macedo Souza	PG0
11:50-11:57 AM	The value of diagnostic vitrectomy: Histocytopathology techniques for the diagnosis of lymphoma of the retina	Giovanna Provenzano Sá	PG1
12:00-12:03 PM	National Epidemiological Study of Ocular Toxoplasmosis in Brazil	Emiliana dos S. Valadares	PG0
12:05-12:35 AM	**INVITED LECTURE - LUIS FILIPE NAKAYAMA** Large language models landscape and applications for ophthalmology		
12:35:12:45 PM	**Questions and Answers**		
13:00 PM	**FINAL REMARKS AND AWARDS ANNOUNCEMENT** **Denise de Freitas, Ivan Maynart Tavares, Luiz Alberto Soares and Caio Regatieri**		

POSTERS

December 11, 2025 - Thursday

9:40-10:10 PM **POSTER SESSION 1**
OCULAR BIOENGINEERING, CATARACT, CORNEA AND EXTERNAL DISEASE, EPIDEMIOLOGY, EXPERIMENTAL SURGERY and GLAUCOMA

Retinal Changes as Biomarkers of Microvascular Disease in Post-Stroke and Post-MI Patients	Diogo Gonçalves Dos Santos Martins	PG0
Ophthalmologic Assessment and Clinical Findings in the Evaluation of Patients Undergoing Cataract Surgery in an Academic Training Center	Henrique Lage Ferreira Ferrer	R3
Randomized double-masked trial: single 4 mg sub-Tenon triamcinolone vs topical prednisolone 1% after uncomplicated cataract surgery.	Pedro De Faria Gusmao	R4
Patient profile and surgical results evaluation of cataract surgery in a Teaching Hospital	Ugor Tomaz Fernandes	R4
Epidemiological and sociodemographic aspects of Acanthamoeba keratitis in contact lens wearers treated at a tertiary hospital in São Paulo	Ítala De Moraes Vieira Gatti	PG1
Predicted Visual Impact of a Small Aperture Intraocular Lens in Reducing Higher Order Aberrations in Post-Radial Keratotomy Patients	Roberta Matschinske Van Den Berg	PG1
Evaluation of Keratoconus Progression After Oral Riboflavin Supplementation Combined With Violet Light Exposure (KeraVio): A Pilot Study**	Ludmilla Nascimento Silva	PG1
Dematiaceous Fungal Keratitis Caused by *Fonsecaea spp*.: A Case Report	Bruno Lucas Andrade	R1
Case Series: Clinical and Tomographic Findings in Unilateral Keratoconus	Pedro Fukui Umeta	R2
Clinical, microbiological and therapeutic profile of fungal keratitis in a Brazilian referral center (2018?2024): preliminary results	Rafael Silveira Feitosa	R2
The use of plasma in the treatment of dry eye in Meibomian gland dysfunction	Carolina Rodrigues Cunha Guimaraes Drumond	R3
Association between keratitis caused by Acanthamoeba and dacryoadenitis	Beatriz Cavalcante Moita	R4
Clinical Evaluation of the Effect of Tacrolimus Eye Drops on Corneal Wound Healing in Patients Undergoing High-Risk Corneal Transplantation	Livia Sandis Barbosa	R4
Evaluation of the efficacy of using polyhexamethylene biguanide 0.02% intra-stromal corneally in individuals with Acanthamoeba keratitis unresponsive to conventional topical treatment	Lívia Moura Alvares	R4
Agreement Study Comparing Maximum Corneal Curvature (Kmax) Values Obtained by Pentacam HR and Anterion (SS-OCT) in Patients with Advanced Keratoconus	Rafael Martins Queiroz Barbosa	R4
Social and Ethical Innovation in Brazilian Biomes: Cooperative Models for Sustainable Development and Social Mobility	Sylvia Maria Affonso Da Silva	PG0
Childhood Ocular Cancer Mortality in Brazil, 1980-2022: A Nationwide Time-Series Analysis.	Eduardo Alfredo Caldas Queruz	Graduate Student
Global Vision, Unequal Voices: A Scientometric Analysis of Gender and Geographic Disparities at ARVO (2013-2023)	Gustavo Moreira Umehara	R1
Ophthalmological Knowledge Assessment: A Comparative Study Among Medical Students, Recently Graduated General Practitioners and Leading Artificial Intelligence Models	Hugo Xavier Rocha Filho	R3
Development and validation of a low-cost 3D-printed simulator for Phaco Chop training in ophthalmology residency at the Federal University of São Paulo (UNIFESP)	Daniel Trahtman de Boer	R3
Influence of Aerobic Activity on Intraocular Pressure, Anterior Chamber Morphological Changes, and Choroidal Perfusion in Different Ametropias	Glauco S. A. Aquino	Fellow
The Reliability and Performance of a Virtual Reality Headset in Brazilian Pediatric Patients	André Hiroshi Bando	PG0
Evaluation Of Visual Function In Patients With Glaucomatous Optic Neuropathy	Bruno Henrique Vieira Escute	PG1
The use of a new wireless type IV polysomnography to evaluate the association between obstructive sleep apnea syndrome and glaucoma: a prospective cross-sectional study.	Guilherme Barreto de Oliveira Ribeiro	PG1

2:55-3:30 PM **POSTER SESSION 2**
GLAUCOMA, LOW VISION, ORBIT, OCULOPLASTICS SURGERY. REFRACTION-CONTACT LENSES, STRABISMUS and TRAUMA

The effectiveness of the current clinical paradigm for the diagnosis of glaucoma	Paula Azevedo Alhadeff	PG1
Optic nerve head hemoglobin levels in patients with primary open-angle glaucoma: an investigation of diagnostic and progression indices	Luís Armando Gondim	PG0
Analysis of ocular biomechanics in different phenotypic patterns of glaucomatous optic nerve damage	Júlia Maggi Vieira	PG1
Secondary Glaucoma Associated with Granulomatosis with Polyangiitis: A Case Report and Literature Review	Bárbara Mendonça Paiva Antonio José	R1

Cognitive Performance and Structural Glaucoma Markers in Diabetes.	Daniela Bueno Larrubia	R2
Structure-Function Correlation Between Visual Field and Optical Coherence Tomography in Glaucoma Patients	Mariana Mello Gonçalves Rodrigues	R4
Use of online cognitive-behavioral protocol for caregivers of children treated in pediatric ophthalmology outpatient clinics and early visual stimulation: assessment of outcomes for mental health and quality of life.	Andrea Oliveira da Silva	PG1
Septic cavernous sinus and ophthalmic veins thrombosis: case report	Fernanda Melo Gadelha Sarmento	R1
Rhino-orbital mucormycosis in a diabetic patient	Henry Nakano Sahao	R1
Evaluation of retinal nerve fiber layer changes in patients with hemifacial spasm	Lilian Emi Ohkawara	PG0
ARTIFICIAL INTELLIGENCE TECHNOLOGY FOR BLINK ASSESSMENT	Bárbara Moreira Ribeiro Trindade Dos Santos	R2
Profile of Patients Undergoing Surgery for Ectropion, Entropion, and Trichiasis at Hospital São Paulo	Fernanda Matos e Oliveira	R2
Ophthalmologic Characterization in Myasthenia Gravis: Correlation of Clinical Stage with ophthalmological assessment	Luiza Sousa Soares	R3
Comparative Assessment of Oculoplastics Knowledge Between Specialists, Residents, and Artificial Intelligence Systems	Amanda Thum Welter	R4
Blink dynamics in myogenic ptosis using an AI-based smartphone application	Tulio Ruiz Eschiapati	R4
A systematic review of observational studies on the use, maintenance and care of contact lenses.	Helena Maria Costa Oliveira	PG0
Efficiency of 3% H2O2 purchased from a pharmacy, neutralized in a case with a platinum disc, in the disinfection of corneal and scleral RGP lenses	Yandely Chihuantit Choquechambi	PG0
Lentes de Contato Esclerais em Olhos Saudáveis: podemos melhorar a Performance Visual?	Cristina Cagliari	PG1
REFRACTIVE ERRORS IN PRETERM INFANTS IN A TERTIARY CARE HOSPITAL IN AN EXPANDED COHORT STUDY	Maurício Pessoa Lima Filho	R4
Ophthalmic Artery Pseudoaneurysm Post-Enucleation in a Patient with Self-Evisceration	Gustavo Vieira Lima Dos Santos	R1
Intralenticular foreign body: a case report	Pedro Henrique Bronzatto	R1
Challenge in Post-Traumatic Eyelid Reconstruction: A Case Report Using the Modified Veirs Rod	Vinicius De Almeida Rodrigues Silva E Souza	R1

POSTERS

December 12, 2025 – Friday

09:40-10:10 AM **POSTER - SESSION 3**

TUMORS AND PATHOLOGY, UVEITIS and RETINA AND VITREOUS

Bridge Intra-Arterial Chemotherapy for Retinoblastoma - Long-Term Analysis	Antonio Morais Silveira Junior	R2
Pseudoretinoblastoma at an ocular oncology referral center in Brazil: epidemiological analysis	Matheus Ferreira Santos da Cruz	R3
Machine learning classification of corneoconjunctival lesions based on AS-OCT biomarkers	Rafael Torres Santos	R4
A Rare Case of Sympathetic Ophthalmia in a Child Following Playtime Ocular Trauma	André Moreira D'angelis	R1
Cytomegalovirus Retinitis unrelated to HIV: Two Case Reports	Gustavo Garcia Agra Naufal	R1
Migratory Retinitis: A Clue to DUSN	Luana Cabral Leão Leal	R1
CHOROIDAL NODULES IN A TERTIARY EYE CARE CENTER IN BRAZIL: WHAT'S BEHIND THEM?	Wakana Masu	R2
Uveitis and Other Ocular Manifestations in Patients with Cutaneous Vitiligo at a Tertiary Referral Center	Lucas Henrique Pereira	R4
Correlation Between Aqueous Humor Biomarkers and AI-Derived OCT Features in Diabetic Macular Edema Treated With Anti-VEGF	Clara Elisa Castro	Fellow
Effect of Aerobic Exercise on Macular Vascular Density Measured by Optical Coherence Tomography Angiography (OCT-A)	Hugo Castelo Branco Felix de Andrade	Fellow
Acute Changes in Peripapillary Microvascular Perfusion Induced by Moderate Aerobic Exercise Assessed With Swept-Source OCT Angiography	Juan Fulgencio Welko Mendoza	Fellow
Impact of Diabetes and Diabetic Retinopathy on Quality of Life: A Study in an Urban Center in Brazil	Vanessa Oliveira Almeida Barbieri	PG0
Impact of Systemic Frailty on Retinal Microstructural Biomarkers in Diabetic Macular Edema	Beatriz Karine Taba Oguido	R1
Expanding the clinical and genetic spectrum of RHO associated retinitis pigmentosa	Rebeca Azevedo Souza Amaral	R1
Study of the influence of aerobic activity on choroidal thickness in different ametropias	Rodrigo Cozar Silva	R1
Evaluating Large Language Models for Multimodal Simulated Ophthalmic Decision-Making in Diabetic Retinopathy and Glaucoma Screening	Cindy Lie Tabuse	R2
Extensive macular atrophy with pseudodrusen-like appearance (EMAP) - an OCT study of the foveal area in eyes with preserved visual acuity.	Gustavo Gabriel Zonaro	R2
Cognitive Performance and the Risk of Diabetic Retinopathy in a Clinical Cohort	José Levi Tavares Cavalcante	R2
Normal Eyes, Hidden Clues: Retinal AI Models Supporting Systemic Diabetes Assessment	Kristian Holanda Nogueira	R2
Retinochoroidal Manifestations in Adults with Cutaneous Vitiligo Followed in a Referral Center	Sérgio Nakamura Junior	R2
Analysis of the Impact of Optical Coherence Tomography Biomarkers on the Response to Treatment of Diabetic Macular Edema with Intravitreal Anti-VEGF Injection	Thiago Terzian Ganadjian	R2
Correlation Between Frailty Score (mFI-11) and Anatomical and Functional Response to Anti-VEGF Therapy in Diabetic Macular Edema	Leonardo Ajuz do Prado Oliveira	R3
Impact of Mydriasis on Image Gradability and Automated Diabetic Retinopathy Screening with a Handheld Camera in Real-World Settings	Iago Diógenes Azevedo Costa	R4
MICROPERIMETRIC EVALUATION OF TREATMENT OF CHRONIC CENTRAL SEROUS CHORIORETINOPATHY WITH TWO MICROPULSED LASER STRATEGIES	Joao Gabriel Alexander	R4
Choroidal Thickness and Its Impact on Micropulse Laser Outcomes in Chronic Central Serous Chorioretinopathy	Pedro Leite Costa Franco	R4

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Keywords

Poster guidelines:
90cm x 120cm

1. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Gilvan Vilarinho da Silva Filho - PG1
e-mail: vilarinhogilvan@gmail.com

Advisor: Augusto Paranhos Jr

CAAE or SEI: 52700221.9.0000.5505

5. ABSTRACT (REQUIRED):

Title: Combined Use of Two Artificial Intelligence Programs for Glaucoma Diagnosis Using Fundus Photography

Author and Co-authors: Gilvan Vilarinho da Silva Filho, MD; Felipe Zocatelli Yamamoto, MD; Gustavo Coelho Caiado, MD; Sergio Henrique Teixeira, MD, PhD; Tiago Santos Prata, MD, PhD; Carolina Pelegrini Barbosa Gracitelli, MD, PhD; Augusto Paranhos Junior, MD, PhD.

Purpose: To evaluate the diagnostic accuracy of two artificial intelligence (AI) tools (trained on different datasets) for glaucoma detection based on fundus photography, used separately and in combination.

Methods: A total of 370 eyes (122 with glaucoma and 248 controls) were analyzed. Fundus photographs were evaluated by two commercially available AI programs: Laguna (continuous measures GDF and GDF adjusted by visual field parameters ? GDFVF) and VUNO (binary classification ? glaucoma or no glaucoma). The reference standard included clinical history, intraocular pressure, visual field (VF) and optical coherence tomography (OCT). Because the glaucoma group was significantly older (68.0 ± 15.2 years) than controls (64.6 ± 6.5 years; p = 0.003), logistic regression models using generalized estimating equations (GEE) were applied to control for age differences and within-subject correlation between eyes. The optic disc area was also included in multivariate models but showed no significant effect on glaucoma classification. ROC curves were generated, and AUCs were compared using DeLong?s test.

Results: Four models were evaluated, each adjusted for age, and compared using the AUC (95% confidence interval) and DeLong p-values:
1. GDF + age
-AUC (95% CI): 0.879 (0.841?0.917)
-Comparison: versus VUNO, p = 0.345
-Interpretation: No difference
2. VUNO + age
-AUC (95% CI): 0.860 (0.819?0.901)
-Comparison: versus GDFVF, p = 0.002
-Interpretation: GDFVF superior
3. GDFVF + age
-AUC (95% CI): 0.916 (0.887?0.945)
-Comparison: versus GDF + VUNO, p = 0.146
-Interpretation: Similar performance
4. GDF + VUNO + age
-AUC (95% CI): 0.903 (0.868?0.938)
-Comparison: vs GDF, p = 0.008
-Interpretation: Combination superior

Conclusion: Both Laguna (GDF) and VUNO demonstrated comparable diagnostic accuracy. Adding visual field information to Laguna (GDFVF) significantly improved performance. The combination of GDF and VUNO, even without VF input, enhanced accuracy relative to GDF alone and achieved performance comparable to GDFVF. Adjusting for age and inter-eye correlation ensured unbiased estimates, and the optic disc size did not influence model performance.

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2. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Guilherme Barroso Guedes - PG1
e-mail: gbguedes@unifesp.br

Advisor: Augusto Paranhos Jr

CAAE or SEI: 74545423.8.1001.5505

5. ABSTRACT (REQUIRED):

Title: Gonioscopy-assisted Transluminal Trabeculotomy (GATT) versus Excisional Goniotomy with Kahook Dual Blade (KDB) Combined with Phacoemulsification in Open-Angle Glaucoma: Study Protocol for a Randomized Clinical Trial

Author and Co-authors: Guilherme Barroso Guedes, Tiago Santos Prata, Fábio Kanadani, Fábio Bernardi Daga, Muna Georges Nasr, Augusto Paranhos Jr

Purpose: This study aims to evaluate the relative effectiveness of KDB and GATT when combined with phacoemulsification in eyes with glaucoma or ocular hypertension needing cataract surgery

Methods: This is a multicenter, prospective, RCT. Eligible criteria will include patients diagnosed with open-angle, pigmentary, pseudoexfoliative glaucoma, or OHT requiring cataract surgery. Patients will be randomly assigned to phaco-KDB or phaco-GATT. The primary outcome will be the proportion of eyes achieving a ?20% reduction in IOP, target IOP, or a reduction in the number of IOP-lowering medications at 12 months postoperatively. Secondary outcomes will include surgical success, visual acuity improvement, predictors of surgical success and complication rate.

Results: This randomized clinical trial is ongoing, and data collection from enrolled patients is currently in progress. Final analyses will be performed once follow-up is completed.

Conclusion: As data collection is still ongoing, definitive conclusions cannot yet be drawn.

Keywords: Glaucoma, Randomized clinical trial, Minimally invasive glaucoma surgery (MIGS), Kahook Dual Blade (KDB), Gonioscopy-assisted transluminal trabeculotomy (GATT)

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3. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Gustavo Albrecht Samico - PG1
e-mail: samico.gustavo@gmail.com

Advisor: Carolina Pelegrini Gracitelli

CAAE or SEI: 73908523.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: Deep Learning-Predicted RNFL Loss and Incident Glaucoma in the Canadian Longitudinal Study on Aging

Author and Co-authors: Gustavo A. Samico, MD; Douglas R. da Costa, MD; Rafael Scherer MD, PhD; Ali Azizi, MD; Aaron Samuel Rabinowitz, MD; Davina A. Malek, MD; Carolina P. B. Gracitelli, MD, PhD; Felipe A. Medeiros, MD, PhD

Purpose: To characterize longitudinal RNFL thinning predicted from fundus photographs by a machine-to-machine (M2M) model in the Canadian Longitudinal Study on Aging and examine its association with incident glaucoma.

Methods: Design and Participants: Prospective, population-based cohort study of 18,247 participants (30,202 eyes) aged 45?86 years from 11 Canadian sites. Baseline data from 2012-2015, follow-up through 2015-2018.
Exposure: Fundus photographs analyzed with an OCT-trained M2M algorithm at baseline and after a 3-year follow-up to estimate RNFL thickness change. Demographic factors, intraocular pressure (IOP), and corneal hysteresis (CH) were assessed.
Outcome Measures: Annual rate of predicted RNFL thickness change and odds ratio of incident glaucoma. Linear mixed-effects models identified predictors of RNFL thinning. Incident glaucoma was defined as new self-reported diagnosis at follow-up. Risk factors were evaluated using generalized estimating equations.

Results: Predicted RNFL loss was faster in glaucomatous versus non-glaucomatous eyes (-0.46 ± 2.28 vs -0.18 ± 2.07 ?m/year; P

Conclusion: Deep learning-derived RNFL estimates from fundus photographs reflect clinically meaningful structural change and predict incident glaucoma in a population-based cohort. . These findings highlight the potential of fundus-based deep learning models to enable scalable glaucoma risk stratification in settings where OCT is impractical or unavailable.

Keywords: Glaucoma, AI, Screening, CLSA

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4. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Mariana Chiba Ikeda - PG1
e-mail: marianachibaikeda@gmail.com

Advisor: Carolina Pelegrini Gracitelli

CAAE or SEI: 1154.0089.09

5. ABSTRACT (REQUIRED):

Title: Reading with Glaucoma: Eye-Tracking Evidence from Three Investigations

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

Purpose: To investigate eye-tracker reading patternsin patients in glaucoma compared to control participants. Cognition and contrast sensitivity were investigated. In addition, to make reading correlation with Standard Automated Perimetry (SAP) and Optical Coherence Tomography (OCT) data.

Methods: Participant?s demographic and ophthalmologic data were collected. ISCAN Eye-Tracker data was collected during reading of control slides and 3 interventions slides: font size, line spacing and contrast. Contrast sensitivity was collected through Freiburg Visual Acuity and Contrast Test (FrACT) and Cognition was assessed with Montreal Cognitive Assessment (MOCA). Glaucoma group had their SAP and OCT analyzed. SAP defects were categorized into peripheral superior, peripheral inferior, central superior and central inferior defect. RNFL and GCC thicknesses were categorized by the device?s own database classification.

Results: 111 patients were enrolled in this study, 57 patients with glaucoma and 53 controls. The mean age was 61.8±11.6 and 66.5±13.7 years in the glaucoma and control group, respectively (P=0.05). Educational level had no difference between the two groups (P=0.39). BCVA in the left eye was 0.18±0.16 and 0.04±0.10 logMAR in the glaucoma and control group, respectively (P

Conclusion: Glaucoma patients read slower, make more saccades and fixations than controls. Higher contrast helps normalize oculomotor behavior in patients with glaucoma compared to line spacing and font size. Central superior visual field defect was the most associated with abnormal reading patterns compared to other SAP defects and also OCT thinning. This study helps elucidate how patients with glaucoma deals with scotomatous visual field loss and how they compensate reading abilities with each one of their defects.

Keywords: Glaucoma; reading; eye-tracker; visual field; OCT; cognition; contrast sensitivity

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5. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Diogo Fajar Correia Landim - PG1
e-mail: diogo.landim@hotmail.com

Advisor: Ivan Maynart Tavares

CAAE or SEI: 64996322.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Efficacy and safety of continuous and micropulse transscleral cyclophotocoagulation in the treatment of refractory glaucoma: A randomized clinical trial.

Author and Co-authors: Diogo Fajardo Correia Landim, Luiz Alberto Soares de Melo Junior, Roberto Murad Vessani, Antonio Morais da Silveira Junior, Ivan Maynart Tavares.

Purpose: To compare the efficacy and safety of transscleral cyclophotocoagulation (CPC) with continuous diode laser and micropulse diode laser in the treatment of refractory glaucoma.

Methods: Randomized clinical trial. Fifty patients diagnosed with refractory glaucoma and indicated for CPC by the attending physician will be randomly assigned to receive either transscleral CPC with continuous diode laser (control group ? 25 eyes of 25 patients) or micropulse laser (study group ? 25 eyes of 25 patients). Patients will be followed for 12 months through scheduled visits. The primary outcome is the intraocular pressure, and secondary outcomes include pain control, best corrected visual acuity, number of anti-glaucoma medications, and success rate.

Results: Preliminary results from 50 patients with a minimum follow-up of 6 months, 25 patients in the continuous mode CPC group and 25 in the micropulse mode CPC group, show a mean reduction in intraocular pressure of 51.0% and 47.5%, and a reduction in anti-glaucoma medications of 0.58 and 0.46, respectively. The success rate, considering an IOP between 5 and 21 mmHg and a reduction >20% from baseline IOP, is 66.67% in the continuous mode CPC group and 43.47% in the micropulse mode CPC group.

Conclusion: So far, transscleral CPC with continuous diode laser has been more effective in reducing intraocular pressure, decreasing the number of eye drops, and achieving a higher success rate compared to the micropulse diode laser in the treatment of refractory glaucoma.

Keywords: Laser Therapy, Cyclophotocoagulation, Glaucoma

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6. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: João Victor Borges Gomes - PG1
e-mail: gomes.jvb@gmail.com

Advisor: Ivan Maynart Tavares

CAAE or SEI: 82174824.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: Ahmed ClearPath® Versus Baerveldt® 250 mm2 for Refractory and High-Risk Glaucoma: Early Results from a Randomized Clinical Trial

Author and Co-authors: Gomes, JVB; Neto, JPB; Silva, LPD; Junior, LSM; Vessani, RB; Tavares, IM;

Purpose: Glaucoma is the most common cause of irreversible blindness. Refractory glaucoma represents a severe subtype. Glaucoma drainage devices are surgical alternatives, particularly when trabeculectomy has a poor prognosis. Comparative evidence on new non-valved implants is scarce. This study compares the efficacy and safety of Ahmed ClearPath® (ACP) and Baerveldt® 250 mm² (BGI) in refractory or high-risk glaucoma.

Methods: Single-center, prospective randomized clinical trial designed to include 150 eyes with refractory or high-risk glaucoma assigned to ACP or BGI. For this preliminary analysis, only patients with at least 2 months of follow-up were included.

Results: From February to September 2025, 21 eyes from 21 patients were analyzed (10 ACP, 11 BGI). The two groups were comparable at baseline regarding age, sex, glaucoma subtype, ethnicity, baseline IOP, and previous surgeries. Most patients had primary open-angle glaucoma, and 15 of 21 used oral carbonic anhydrase inhibitors. ACP patients tended to use more preoperative medications (3.2 ± 0.9 vs. 2.2 ± 1.3; p=0.057). All tubes were implanted in the superotemporal quadrant, with no difference in site or combined procedures. IOP decreased significantly in both groups, with no intergroup differences up to 120 days. At 3 months, mean IOP was 13.1 ± 4.4 mmHg in ACP and 12.9 ± 3.6 mmHg in BGI (p=0.898). Medications also decreased (1.1 ± 1.5 vs. 1.8 ± 1.6; p=0.382). Choroidal detachment was uncommon, with no differences between groups. No significant differences were found in complication or reoperation rates up to 120 days. Analyses beyond 150?180 days were limited by small sample size.

Conclusion: Both ACP and BGI demonstrated significant IOP and medication reduction with acceptable safety. Patients in the ACP group tended to require more medications preoperatively. Outcomes were similar between groups. This finding raises the hypothesis that ACP may provide a relatively stronger pressure-lowering effect in more resistant cases. Although preliminary and not statistically significant, these results highlight the clinical relevance of continued evaluation of non-valved devices. Larger samples and longer follow-up are needed to confirm these findings.

Keywords: Glaucoma drainage devices; Non-valved implant; Randomized clinical trial

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Name: Marcus Vinicius Prado Guerreiro Filho - PG1
e-mail: marcus.guerreiro@unifesp.br

Advisor: Ivan Maynart Tavares

CAAE or SEI: 64996322.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Retinal Ganglion Cell Loss and Patterns of Neuroretinal Rim Thinning at the Onset of Visual Field Defects in Glaucoma

Author and Co-authors: Aaron Samuel Rabinowitz , Veronica Vilasboas-Campos , Marcus Guerreiro Filho , Felipe A. Medeiros

Purpose: To compare retinal ganglion cell (RGC) loss in glaucoma suspect eyes with diffuse versus localized neuroretinal rim loss at the time of the first confirmed visual field defect.

Methods: Fifty-three glaucoma suspect eyes were followed until development of repeatable glaucomatous visual field defects. Estimated RGC counts were derived using a validated model combining standard automated perimetry and optical coherence tomography measurements. Conversion was defined as the first confirmed abnormal field, with RGC estimates taken within three months. Neuroretinal rim loss was classified as diffuse or localized through masked grading of optic disc stereophotographs. A normative cohort of 124 healthy eyes provided reference RGC values.

Results: Of the 53 eyes, 36 (68%) showed diffuse and 17 (32%) localized rim loss. Eyes with diffuse loss had significantly lower RGC counts at conversion (613,543 ± 114,886) than those with localized loss (733,614 ± 65,776, P

Conclusion: Diffuse rim thinning at the earliest stage of functional loss is associated with substantially greater RGC loss than localized thinning. These findings support incorporating structural features into early glaucoma assessment.

Keywords: Glaucoma, Retinal ganglion cell, Retinal nerve fiber layer, Visual field, Neuroretinal rim thinning, Perimetric conversion

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8. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Mauro César Gobira Guimarães Filho - PG0
e-mail: maurogobira19@gmail.com

Advisor: Rubens Belfort Jr.

CAAE or SEI: 85336324.7.0000.0082

5. ABSTRACT (REQUIRED):

Title: Machine Learning for Glaucoma Diagnosis and Visual-Field Progression Prediction Using the Harvard-GDP Dataset

Author and Co-authors: Mauro Gobira, Rubens Belfort Jr., Ivan Maynart Tavares

Purpose: To benchmark classical machine-learning algorithms for glaucoma diagnosis and prediction of visual-field progression using the multimodal Harvard-Glaucoma Detection and Progression (Harvard-GDP) dataset, which provides multiple operational definitions of disease progression.

Methods: The structured Harvard-GDP summary file (1,000 eyes; 67 variables) was used to create seven independent binary classification tasks, one for glaucoma diagnosis and six for distinct progression definitions based on mean deviation (MD), visual-field index (VFI), and pointwise trend analyses. After preprocessing (feature standardization, zero-variance removal, group-stratified splits), logistic regression, random forest, and multilayer perceptron (MLP) models were trained and evaluated (80/20 split) using AUC and accuracy. Feature importance from random forests was used for interpretability.

Results: Glaucoma diagnosis achieved perfect discrimination across all models (AUC = 1.00; accuracy = 1.00). For progression prediction, performance varied with the definition used. The best AUCs for each endpoint were: 0.767 (progression.md, logistic regression), 0.623 (progression.vfi, logistic regression), 0.797 (progression.td_pointwise, SVM), 0.851 (progression.td_pointwise_no_p_cut, random forest), 0.934 (progression.md_fast, logistic regression), and 0.837 (progression.md_fast_no_p_cut, random forest). Event rates ranged 2.0?29.6%, highlighting heterogeneity across progression criteria.

Conclusion: Classical machine-learning models demonstrate strong performance for glaucoma classification but only moderate success in forecasting visual-field progression. Logistic regression and random forest models performed best across definitions, underscoring the need for multimodal and temporal modeling to improve prediction of functional decline.

Keywords: Glaucoma, Machine Learning, Visual Field, Progression, Artificial Intelligence

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9. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Felipe Taveira Daher - PG1
e-mail: felipeoftalmo@gmail.com

Advisor: Tiago dos Santos Prata

CAAE or SEI: 52115521.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Correlation between axial length and corneal biomechanical parameters, using the dynamic Scheimpflug analysis system in patients with primary open-angle glaucoma

Author and Co-authors: Felipe Taveira Daher, Jayter Silva de Paula, Marcelo Macedo

Purpose: Evaluate correlations between axial length and biomechanical parameters in eyes with primary open-angle glaucoma (POAG), using the Scheimpflug-based dynamic analysis system Corvis-ST

Methods: Cross-sectional observational study including eyes of patients with POAG under medical treatment. All eyes underwent biomechanical assessment with Corvis-ST, optical biometry, Goldmann applanation tonometry (GAT) and corneal pachymetry. Demographic data and the number of antiglaucoma medications in use were also collected. The biomechanical parameters studied were the Stiffness Parameter at the First Applanation (SPA1), the Stress-Strain Index (SSI), and the Biomechanically-corrected IOP (bIOP). The relationship between biomechanical parameters and axial length was investigated using multivariate models adjusted for intraocular pressure (IOP) and age

Results: Sixty-four eyes were included. A negative correlation was found between axial length and SSI (p = 0,04). When axial length values were divided into two groups (Group 1: eyes

Conclusion: The negative correlation between axial length and SSI suggests that longer eyes tend to have lower biomechanical stiffness. The higher bIOP values in eyes with greater axial length indicate a tendency for GAT to underestimate IOP in these eyes. The absence of significant differences between groups regarding pachymetry, GAT, and especially the number of medications (which could influence ocular biomechanics) points to homogeneity between groups

Keywords: Corvis-ST, Glaucoma, Miopia

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10. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Aileen Miwa Tabuse - PG1
e-mail: aileenmiwa@gmail.com

Advisor: Ana Luisa Hofling

CAAE or SEI: 53829321.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Clinical outcomes and in vitro susceptibility analysis of fungal keratitis treated with adjunct Rose Bengal Photodynamic Antimicrobial Therapy at Escola Paulista de Medicina UNIFESP ? São Paulo, Brasil

Author and Co-authors: Tabuse, AM; Kase, C; Rocchetti TT; Yu MCZ, Campos MSQC, Freitas D, Hofling-Lima AL

Purpose: To evaluate the clinical efficacy and in vitro antifungal activity of RB-PDAT in patients with fungal keratitis treated between May 2023 and January 2025.

Methods: A retrospective analysis was conducted, including patient demographics, risk factors, and ophthalmic findings. Evaluation included best corrected visual acuity, slit-lamp examination, and anterior segment photography. Microbiological diagnosis was confirmed by corneal scraping, and antifungal susceptibility testing was performed for amphotericin B (AMB) and voriconazole (VCN). Patients were eligible for RB-PDAT if they showed no clinical improvement with standard antifungal therapy. The primary outcome was ulcer resolution without the need for therapeutic penetrating keratoplasty (TPK); the secondary outcome was time to clinical resolution. In vitro susceptibility to RB-PDAT was assessed for isolated organisms.

Results: Fourteen patients (14 eyes) were enrolled. The most common pathogen was Fusarium spp: F. solani (4 cases), F. proliferatum, F. dimerum, F. fujikuroi (each 1 case), followed by Curvularia spp (2 cases). Other isolates included Purpureocillium lilacinum, Colletotrichum spp., Pichia ohmeri, Candida albicans, and Exophiala oligosperma. Three isolates demonstrated resistance to amphotericin B, and eight were resistant to voriconazole. Clinical success was achieved in 11 (78,5%) cases, with an average resolution time of 47.5 ± 27.5 days. Three patients required TPK after a mean of 29.5 ± 23.5 days due to corneal perforation or persistent infection. Those were infections by F. solani, Colletotrichum spp. and Exophiala oligosperma. All TPK cases had hypopyon and deep stromal infiltrates at presentation, and two received additional treatments. In vitro, RB-PDAT demonstrated more than 90% growth inhibition for all organisms except Curvularia spp., a dematiaceous filamentous fungus that presented with 35% inhibition.

Conclusion: RB-PDAT is an adjunct therapy with consistent results of in vitro inhibition and may be used for clinical treatment of fungal keratitis.

Keywords: fungal keratitis, ulcer, rose bengal, RB-PDAT

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11. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Laura Caldas Santos - PG1
e-mail: laura.caldas@unifesp.br

Advisor: Denise de Freitas

CAAE or SEI: 44283921.9.0000.5505

5. ABSTRACT (REQUIRED):

Title: Clinical Profiles in Sjögren?s Disease: Autonomic Dysfunction and Its Functional Implications in a Cross-Sectional Study

Author and Co-authors: Laura Santos, Tais Wakamatsu, Katharina Ávila, Fernanda Gomes
Virginia Trevisani

Purpose: To investigate the prevalence and association of autonomic nervous system (ANS) dysfunction in patients with Sjögren's disease (SjD).

Methods: This cross-sectional observational study was conducted at the Ophthalmology Outpatient Clinic of UNIFESP. The study involved 71 SjD patients (2016 EULAR/ACR criteria) and 16 controls. Participants completed the COMPASS-31 (autonomic dysfunction), EuroQoL EQ-5D-3L (quality of life), ESSPRI (self-reported symptom severity), and PROFAD (physical/mental fatigue). Groups were compared using t-tests or Mann-Whitney U tests, and correlations were analyzed with Spearman or Pearson methods. A K-Means cluster analysis was performed to identify clinical profiles. The analysis was repeated after excluding the secretomotor domain of COMPASS-31, due to its focus on exocrine gland function which is inherently affected in SjD.

Results: SjD patients showed significantly higher COMPASS-31 scores (35.5 vs. 18.1; p = 0.0013) and significantly lower quality of life (EuroQoL: 62.5 vs. 86.9; p = 0.000006) compared to controls. No significant differences were found in physical (p = 0.0508) or mental fatigue (p = 0.204) between groups. ESSPRI scores (severity) correlated significantly with autonomic dysfunction, decreased quality of life, and greater fatigue (p

Conclusion: Patients with SjD exhibit greater autonomic dysfunction and lower quality of life compared to controls. Clinical severity is strongly associated with autonomic symptoms, fatigue, and negative well-being perceptions. The COMPASS-31 is a valuable tool for functional assessment and can assist in the systemic stratification and monitoring of SjD. The small size of the control group is currently being corrected.

Keywords: Sjögren, COMPASS-31, ESSPRI, dysautonomia

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12. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Constantin Philippe Salha - PG1
e-mail: constantinsalha@gmail.com

Advisor: José Álvaro Pereira Gomes

CAAE or SEI: 78346824.5.0000.0088

5. ABSTRACT (REQUIRED):

Title: Comparison of Donor Corneas With and Without Descemet Membrane in Deep Anterior Lamellar Keratoplasty With Intraoperative Perforation

Author and Co-authors: Constantin Philippe Salha, Adriana dos Santos Forseto, Camilla Walsh Crema, Nicolas Cesario Pereira

Purpose: To evaluate whether maintaining the donor Descemet membrane (DM) during deep anterior lamellar keratoplasty (DALK) with intraoperative perforation increases the risk of postoperative double anterior chamber.

Methods: Prospective, randomized, comparative study conducted at Banco de Olhos de Sorocaba. Inclusion criteria were patients aged 18 years or older indicated for DALK who presented intraoperative DM perforation. Exclusion criteria were conversion to penetrating keratoplasty, pregnancy or lactation, and absence of perforation. Surgeries were performed by second year cornea fellows under supervision, using Big Bubble or manual dissection techniques. In the event of perforation, patients received donor corneas with (Descemet ON) or without (Descemet OFF) DM according to previous randomization. Postoperative evaluation included corrected visual acuity, topographic astigmatism, specular microscopy and complications, with follow up up to two years.

Results: Forty four eyes were included, 21 in the Descemet ON group and 23 in the OFF group. Mean age was similar between groups (OFF: 31.7 ± 9.7 years; ON: 33.7 ± 13.1 years; p=0.4812). No significant differences were found for sex (p=1.0000), laterality (p=0.2859) or perforation location (p=0.5377). The occurrence of double anterior chamber was significantly higher in the Descemet ON group (62%) compared with the OFF group (9%) (p=0.0001). These are preliminary results, and data collection and follow up are still ongoing.

Conclusion: Preliminary analysis indicates that maintaining the donor Descemet membrane in DALK with intraoperative perforation significantly increases the risk of postoperative double anterior chamber, without differences in demographic or intraoperative variables. Long term follow up will provide definitive outcomes.

Keywords: DALK; Descemet membrane; double anterior chamber; corneal transplantation; keratoconus.

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13. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Vanessa Favero Demeda - PG1
e-mail: vanessa.favero@gmail.com

Advisor: José Álvaro Pereira Gomes

CAAE or SEI: 81670824.1.0000.5500

5. ABSTRACT (REQUIRED):

Title: Jett Plasma Lift technology in the Treatment of Meibomian Gland Dysfunction

Author and Co-authors: Vanessa Favero Demeda; Rafael Jorge Alves de Alcântara Chiara Luana Reinert da Silva, Carolina Drumond; Juan Pablo dos Santos Rossi; Tais Hitomi Wakamatsu; José Álvaro Pereira Gomes.

Purpose: To assess the efficacy of Jett Plasma Lift technology in patients with Dry Eye secundary to Meibomian gland dysfunction (MGD) and compare it to MiBo Thermoflo device, a therapeutic tool that uses heat and gentle massage to unblock meibomian glands in the eyelids. Using the Ocular Surface Disease Index (OSDI) as the primary outcome.

Methods: A prospective, randomized study, consecutive 35 patients presenting for dry eye
evaluation will be recruited at the Department of Ophthalmology and Visual Sciences at the São Paulo School of Medicine. Inclusion criteria: Age 18-80 years; OSDI Dry Eye classification: score more than 13 (mild-moderate dryness), tear break-up time <10 seconds. Exclusion criteria: Eyelid dysfunction; Severe dry eye disease; Patients with severe MGD; Patients treated with Intense Pulsed Light; Jett Plasma contraindications (pregnant, epilepsy, oncological disease). Patients will be subjected to Dry Eye assessment using diagnosis criteria and methodologies recommended by the Dry Eye Workshop (DEWS III) (2).

Results: The Ocular Surface Disease Index (OSDI) was employed to assess symptom severity before and after treatment. The treatment group received Jett Plasma therapy, while the control group was treated with MiBo Thermoflo. Paired t-tests were applied to evaluate within-group changes (pre- vs post-treatment), and an independent t-test was used to compare the magnitude of improvement between groups.
In the Jett Plasma group, the mean OSDI score decreased significantly following treatment ($t = 5.55$, $p = 0.00054$), indicating a substantial improvement in ocular surface symptoms.
In contrast, the MiBo Thermoflo group did not show a statistically significant difference between pre- and post-treatment OSDI scores ($t = 1.48$, $p = 0.2139$). When comparing the change in OSDI scores between groups, no statistically significant difference was observed ($t = 0.46$, $p = 0.6637$), suggesting that, at this stage, the degree of improvement did not differ significantly between the two treatment modalities.

Conclusion: It is important to note that this study is still ongoing, and the present findings represent partial results based on the initial subset of participants. Additional data collection and analysis are expected to provide a more comprehensive assessment of the comparative efficacy of Jett Plasma and MiBo Thermoflo in improving OSDI outcomes.

Keywords: DED; Jett Plasma Lift technology; MiBo Thermoflo; MGD

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14. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Italo Pena Oliveira - PG1
e-mail: italopo@yahoo.com.br

Advisor: José Álvaro Pereira Gomes

CAAE or SEI: 70678923.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Use of Platelet-Rich Plasma as an Adjuvant to Prevent Recurrence After Surgical Excision of Ligneous Conjunctivitis Membranes

Author and Co-authors: Ítalo Pena de Oliveira
Tais Hitomi Wakamatsu
Elíseo Joji Sekiya
José Álvaro Pereira Gomes

Purpose: Ligneous conjunctivitis is a rare autosomal recessive form of membranous conjunctivitis characterized by type I plasminogen deficiency. The absence of normal plasmin activity results in the formation of fibrin-rich membranous material, typically manifesting on the palpebral conjunctiva. Surgical excision often induces conjunctival irritation and accelerated recurrence of pseudomembranes.
The purpose of this report is to describe three cases in which surgical excision was combined with intraoperative application of platelet-rich plasma (PRP) and postoperative use of allogeneic serum eye drops enriched with PRP, resulting in complete removal of the lesions and no recurrence during the follow-up period.

Methods: A prospective case series including three patients who underwent surgical intervention for removal of ligneous conjunctivitis membranes

Results: In all three patients, there was complete removal of the lesion with no evidence of recurrence during the follow-up period. The treatment was well tolerated, and no adverse events were observed.

Conclusion: The combined use of platelet-rich plasma during surgery and postoperative PRP-enriched serum eye drops appears to be a safe and effective adjuvant approach to reduce recurrence and promote healing in patients with ligneous conjunctivitis.

Keywords: conjunctivitis

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15. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Diego Casagrande - PG1
e-mail: diegoc.oftalmo@gmail.com

Advisor: Rubens Belfort Jr.

CAAE or SEI: 78933524.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Diagnostic accuracy of a deep learning model for pterygium detection in Barcelos, Brazilian Amazon

Author and Co-authors: Diego Casagrande[1,2], Mauro Gobira[1], Arthur G. Fernandes[2], Marcos Jacob Cohen[3], Paula Marques Marinho[1,2], Kevin Waquim Pessoa Carvalho[1], Ariane Luttecke-Anders[2]?, Beatriz Araujo Stauber[2], Nívea Nunes Ferraz[2], Jacob Moysés Cohen[3], Adriana Berezovsky[2], Solange

Purpose: To evaluate the diagnostic accuracy of a deep learning model for detecting pterygium in anterior segment photographs captured with smartphones in the Brazilian Amazon.

Methods: This cross-sectional study enrolled 38 participants (76 eyes) from Barcelos, Brazil. Nonmedical health workers, previously trained in ocular imaging, captured standardized anterior segment photographs with smartphones. Images were analyzed using a deep learning model based on the MobileNet-V2 convolutional neural network, and results were compared against ophthalmologists? evaluations (gold standard). Diagnostic performance was assessed using sensitivity, specificity, predictive values, and area under the receiver operating characteristic curve (AUC).

Results: The deep learning model achieved a sensitivity of 91.43%, specificity of 90.24%, positive predictive value of 88.46%, negative predictive value of 92.79%, and an AUC of 0.91. Logistic regression showed no significant associations between pterygium and demographic variables such as age or gender.

Conclusion: The deep learning model demonstrated high diagnostic performance for detecting pterygium in smartphone-captured images. These findings support the feasibility of AI-based tools to enhance early detection and screening in underserved Amazonian populations, potentially improving access to ophthalmic care.

Keywords: Pterygium; Deep learning; Artificial intelligence; Smartphone; Diagnostic imaging; Telemedicine

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16. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Renato Galao Cerquinho Leca - PG1
e-mail: renatoleca@terra.com.br

Advisor: Ana Luisa Hofling

CAAE or SEI: 29522619.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: INTEGRATED MOLECULAR PROFILING OF THE TEAR FILM IN KERATOCONUS: INTERACTIONS BETWEEN INFLAMMATION, ANTIOXIDANT REGULATION AND METABOLISM ASSOCIATED WITH DISEASE SEVERITY

Author and Co-authors: Autho Renato Leça
Co-Authors. Prof Dr Ana Luisa Hofling Lima
Prof Dr Fernando Fonseca

Purpose: To conduct a pioneering study integrating molecular characterization of the tear film in keratoconus, exploring interactions between inflammatory, antioxidant-regulatory (Nrf2), and metabolic (vitamin D, ferritin) systems, and to elucidate a coherent etiopathogenic framework linking these biological networks to disease severity.

Methods: A cross-sectional analytical study was conducted with 63 participants (28 keratoconus, 35 controls). Tear film samples were analyzed for IL-1?, IL-6, TNF-?, C-reactive protein (CRP), Nrf2, vitamin D, and ferritin using multiplex and electrochemiluminescent immunoassays. Nrf2, a transcription factor and master regulator of the antioxidant response, was evaluated qualitatively.

Results: Keratoconus exhibited a coordinated inflammatory activation, with 4.8?5.0-fold increases in IL-1?, IL-6, TNF-?, and CRP (p

Conclusion: Findings support an integrated etiopathogenic framework in keratoconus, linking reduced vitamin D levels, impaired Nrf2 activation, and increased ferritin and inflammatory cytokines, consistent with a metabolic?oxidative?inflammatory imbalance associated with disease severity. Ocular rubbing, highly prevalent and correlated with lower vitamin D, may act as a mechanical amplifier within this interconnected network. This integrative model provides a coherent biological basis for translational approaches targeting metabolic and antioxidant regulation.

Keywords: keratoconus; tear film; biomarkers; Nrf2; vitamin D; ferritin, inflammation

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

Name: Larissa Fagundes Pinto - PG1
e-mail: larifp1510@gmail.com

Advisor: Denise de Freitas

CAAE or SEI: 59843422.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Host-Pathogen Interaction: Inflammatory Responses of Human Macrophages to Acanthamoeba polyphaga

Author and Co-authors: Larissa Fagundes Pinto, Reinan Nascimento Araujo, Eduarda Ferreira Rocha Polito, Amanda Santos Freire, João Lucas Benicio Alves, Priscila Cardoso Cristovam, Ítala de Moraes Vieira Gatti, Karina Ramalho Bortoluci, Denise de Freitas

Purpose: The eye harbors immune-privileged regions, and the immune mechanisms underlying Acanthamoeba keratitis (AK) remain poorly defined. This study aims to characterize the inflammatory response of human macrophages to Acanthamoeba polyphaga in vitro, with emphasis on inflammasome assembly.

Methods: Macrophages differentiated from THP-1 monocytes and human monocyte-derived macrophages (hMDMs), with or without lipopolysaccharide (LPS; 200 ng/mL) priming, were challenged with Acanthamoeba polyphaga (ATCC 30461) cysts or trophozoites at a multiplicity of infection (MOI) of 0.1 (one amoeba per ten macrophages) for 4, 24, or 48 h. Infection rates, macrophage and amoeba viability, and production of inflammatory mediators, including reactive oxygen species (ROS), were evaluated. Inflammasome assembly was assessed by quantifying ASC specks (apoptosis-associated speck-like protein containing a CARD), and IL-1 beta secretion was measured.

Results: Both THP-1-derived macrophages and hMDMs, regardless of LPS priming, efficiently internalized A. polyphaga cysts and trophozoites and significantly reduced amoeba numbers, indicating effective infection control. Infection consistently induced inflammasome assembly and IL-1 beta secretion, even in the context of low ROS generation. A time-dependent decline in macrophage viability was observed, which may reflect cytotoxicity driven by inflammasome activation and/or parasite effects.

Conclusion: These findings suggest that human macrophages can internalize and control A. polyphaga infection while also triggering inflammasome activation, which may contribute both to the antimicrobial response and to macrophage loss during infection.

Keywords: Acanthamoeba keratitis, human macrophages, inflammasomes, inflammation

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18. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Luiz Guilherme Ito da Cruz - PG1
e-mail: luizitocruz@gmail.com

Advisor: Denise de Freitas

CAAE or SEI: 46603621.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Cysts density assessment by IVCM before therapeutic keratoplasty

Author and Co-authors: Luiz Guilherme Ito da Cruz; Tais Hitomi Wakamatsu; Denise de Freitas

Purpose: Incorrect use of contact lenses is a predisposing factor for keratitis caused by Acanthamoeba spp., a protozoan found easily in bodies of water. The use of In Vivo Microscopy (IVCM) allows the identification of Acanthamoeba in keratitis, presenting itself as hyper-reflective ovoid structures. Therapeutic keratoplasty can successfully treat medically unresponsive cases of Acanthamoeba keratitis. This study aims to analyze IVCM scans from patients that later underwent therapeutic keratoplasty from topical acanthamoeba keratitis topical treatment failure.

Methods: 22 patients aged 18 to 80 years without previous corneal surgery or complications and with Acanthamoeba keratitis confirmed in IVCM will be evaluated. The HRT3 tomograph with Rostock module was used to evaluate the morphological changes of the cornea and quantify the cysts in the software itself in a semi-automated process.

Results: 22 eyes from 22 patients were included in this study. The mean age of the group was 41.7 years (sd. 13.2) and 13 were female. 11 patients used soft contact lenses and 11 rigid contact lenses, 4 of those being scleral contact lenses. The mean interval from the first to last IVCM before therapeutic keratoplasty were 104.2 days (sd 85.0) and the mean acanthamoeba cysts density was 434.8 cysts/mm² (sd. 223.7) at last IVCM before the surgery. All of the exams had severe cyst density (more than 50 cysts/scan), measured at the densest scan at the exam. Comparing with group that responded to topical treatment (publication pending), there was statistical difference in the study group (P

Conclusion: IVCM is a valuable tool to study Acanthamoeba keratitis. The exam could predict if it will have topical therapeutic success comparing with control group.

Keywords: acanthamoeba; keratitis; IVCM; therapeutic keratoplasty

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19. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Raphael Barcelos - PG1
e-mail: raphael.barcelos@unifesp.br

Advisor: Mauro Campos

CAAE or SEI: 23089.034224/2022-10

5. ABSTRACT (REQUIRED):

Title: Electroporation and Structural Integrity of Contact Lenses: Spectrophotometric and Computational Image Analysis Across Variable Voltage Ranges

Author and Co-authors: Prof. Dr. Mauro Silveira de Queiroz Campos; Prof. Dra. Denise de Freitas; Palloma Santiago Prates Pessoa; Raphael Barcelos

Purpose: To assess the optical and structural stability of distinct contact lens materials subjected to controlled electroporation at multiple voltage levels, combining spectrophotometric, stereomicroscopic, and computational image analyses to establish quantitative evidence of material safety and resilience.

Methods: (1) Spectrophotometric analysis: Hydrogel (Acuvue 2), corneal rigid (Rose K), and scleral (CG Mediphacos) lenses were electroporated at 2500 V (high-voltage mode; two unipolar square pulses; 0.09 s interval; 0.012 ms pulse width), followed by optical transmission assessment (300?800 nm; BioTek Epoch 2C).?(2) Structural analysis: Lenses of identical models were exposed to 600?3000 V with variable pulse numbers and cumulative exposure times. Pre- and post-electroporation images acquired through stereomicroscopy were processed using quantitative metrics?SSIM, GLCM, FFT, and ?E?to evaluate micro-texture, color uniformity, and surface integrity. Statistical analyses (ANOVA and mixed-effects models) compared pre/post datasets to detect structural deviations.

Results: Spectrophotometric evaluation revealed minimal optical deviations, with hydrogel lenses showing ?12 % visible and ?41 % UV-A transmittance reduction, whereas rigid and scleral lenses remained optically stable throughout. Computational metrics confirmed macroscopic and microstructural preservation across all voltage ranges (SSIM > 0.90; texture correlation > 0.80), with no evidence of cracks, whitening, or surface deformation under stereomicroscopy. Even under 3000 V and prolonged pulses, lens transparency and geometry were maintained, demonstrating robust dielectric tolerance of the evaluated materials.

Conclusion: Controlled electroporation between 600 V and 3000 V did not induce detectable optical, structural, or chromatic damage in any tested lens type. The integration of spectrophotometric and computational approaches provides quantitative validation of optical resilience and mechanical stability, supporting the safety of electroporation as a non-destructive method for biomaterial evaluation and potential functionalization of ophthalmic devices.

Keywords: Electroporation; contact lenses; spectroscopy; stereomicroscopy; computational analysis; structural integrity; biomaterials.

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20. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Palloma Santiago Prates Pessoa - PG0
e-mail: palloma48santiago@gmail.com

Advisor: Mauro Campos

CAAE or SEI: 23089.004790/2025-31

5. ABSTRACT (REQUIRED):

Title: ELECTROPORATION AS TREATMENT IN CORNEAL EPITHELIAL CELLS INFECTED WITH Acanthamoeba polyphaga

Author and Co-authors: Palloma Santiago Prates Pessoa, Larissa Fagundes Pinto, Denise de Freitas, Mauro Silveira de Queiroz Campos

Purpose: This study aims to evaluate the combined use of electroporation and conventional anti-Acanthamoeba eye drops (propamidine isethionate and PHMB) in corneal epithelial cells infected with Acanthamoeba polyphaga, seeking to improve therapeutic efficiency and minimize cytotoxic effects.

Methods: An in vitro model using immortalized human corneal epithelial cells (ATCC® CRL-3582?) infected with A. polyphaga trophozoites and cysts will be used. Electroporation will be applied with varying voltages and pulse numbers to determine optimal parameters for cell permeability without significant tissue damage. Fluorescence assays (Annexin V-FITC, propidium iodide, and DAPI) will assess parasite viability and host cell integrity. Statistical analyses will compare treatment groups to identify the most effective and safest combination.

Results: Preliminary data from our group indicate that electroporation effectively induces membrane permeabilization in Acanthamoeba polyphaga, with a single pulse at 2000?2500 V achieving 55?59% permeabilization. This suggests that electroporation can enhance drug penetration in double-walled cysts. We anticipate that combining electroporation with PHMB and propamidine will improve anti-parasitic efficacy, particularly against cysts, while potentially reducing treatment duration and resistance. Optimized parameters are also expected to preserve high corneal cell viability, supporting the feasibility of this approach for therapeutic use.

Conclusion: Electroporation has the potential to become a valuable adjunct therapy for AK by enhancing drug penetration and reducing cyst-associated resistance. This approach may significantly improve clinical outcomes and represents a promising step toward more effective and less toxic treatment protocols.

Keywords: Acanthamoeba keratitis, electroporation, corneal epithelial cells, PHMB, propamidine, adjunct therapy

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21. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Paula Baptista Eliseo da Silva - PG1
e-mail: paula.baptista@unifesp.br

Advisor: Adriana Berezovsky

CAAE or SEI: 61166622.2.0000.5505

5. ABSTRACT (REQUIRED):

Title: Impact of low vision rehabilitation with assistive technology devices on vision-related quality of life

Author and Co-authors: Paula Baptista Eliseo da Silva, Nívea Nunes Ferraz, Marcela Cypel, Adriana Berezovsky.
Low vision service, UNIFESP

Purpose: This study aims to evaluate the impact of visual rehabilitation on quality of life through the adaptation of assistive technology devices (ATDs) in individuals with low vision.

Methods: Patients referred for visual rehabilitation were included according to the following criteria: best-corrected visual acuity (BCVA) in the better-seeing eye ranged from 0.5 to 1.6 logMAR, and concluded adaptation of ATD. All participants were evaluated at the Outpatient Low Vision Service. The World Health Organization 20-item Visual Functioning Questionnaire (WHO-VFQ-20) was administered to measure vision-related quality of life before and six months after rehabilitation and the use of ATDs. The WHO-VFQ-20 items were grouped into two main domains: Visual Functioning (VF), which includes distance vision, near vision, and sensory adaptation, and Quality of Life (QoL), which encompasses pain, social activities, and mental health. The outcomes of ATD adaptation were analyzed by comparing visual acuity and WHO-VFQ-20 scores before and after the use of the prescribed devices. Statistical significance was set at p equal to or less than .05.

Results: The final sample included 23 participants (mean age, 62.6 years; SD, 16.2; 15 females), all of whom had adapted to ATDs for near vision. The mean near BCVA without ATD was 0.84 logMAR (SD 0.32) and improved significantly to 0.27 logMAR (SD 0.13; p less than 0.01), representing an average gain of 6 lines in visual acuity with ATD. The mean optical magnification prescribed was 7.2 diopters (SD 5.4), with six participants using digital devices (a smartphone magnifier app). After rehabilitation, the mean global WHO-VFQ-20 score increased from 42.22 (SD 16.48) to 51.66 (SD 17.47; p less than 0.01). The scores for the VF and QoL domains improved from 38.95 (SD 18.34) to 49.64 (SD 18.71; p less than 0.01), and from 47.83 (SD 21.93) to 55.12 (SD 22.48; p equal to 0.06), respectively. There was no correlation between the type of ATD adapted and the improvement in WHO-VFQ-20 scores.

Conclusion: In conclusion, visual rehabilitation through assistive technology devices has demonstrated significant improvements in visual efficiency and a positive impact on vision-related quality of life. Financial support: CAPES

Keywords: low vision; rehabilitation; quality of life

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22. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Ivana Lopes Romero-Kusabara - PG1
e-mail: ilromero@gmail.com

Advisor: Paulo Schor

CAAE or SEI: 50937321.2.0000.5479

5. ABSTRACT (REQUIRED):

Title: Bone Cement Orbital Implants: A Prospective Study on Clinical Outcomes and Complications

Author and Co-authors: Ivana Lopes Romero-Kusabara (1,2), Fernanda Yumi Konno (1), Vivian Lumi Tsai (1), José Vital Filho (1), Sérgio Felberg (1,2), Paulo Schor (2)
1-Departamento de Oftalmologia Santa Casa de SP
2-Universidade Federal de São Paulo

Purpose: To evaluate the clinical outcomes and complication rates associated with bone cement spherical implants in patients undergoing evisceration, enucleation, and secondary orbital implantation.

Methods: A prospective study was conducted from March 2022 to July 2025, including 50 patients who received bone cement spheres fabricated from polymethylmethacrylate (PMMA) and implanted in a public healthcare setting. Patients were assessed at 1, 3, 6, and 12 months postoperatively. Implant motility, aesthetic results, and imaging findings on orbital computed tomography (CT) were recorded. Complications were documented and analyzed.

Results: The cohort comprised 25 males and 25 females, with a follow-up ranging from 3 months to 3 years and 5 months. Thirty-four eviscerations, 14 enucleations, and 2 secondary implantations were performed. Spheres measured either 16 mm (n = 33) or 19 mm (n = 17). Complications included early wound dehiscence in 2 cases, fornix shortening with symblepharon in 1 case, and conjunctival cyst formation in 1 case. No infections were observed. Dehiscence cases were associated with corneal preservation and high suture tension.

Conclusion: Bone cement spherical implants represent a cost-effective, biocompatible alternative for anophthalmic socket reconstruction, with low complication rates. This technique is particularly advantageous in public healthcare systems where porous implants are not financially viable. The study also led to the development of a prototype mold to facilitate intraoperative fabrication.

Keywords: orbital implant, bone cement, PMMA, evisceration, enucleation, anophthalmic socket

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23. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Mariana Borges Barcellos Dias - PG1
e-mail: marianabbd@gmail.com

Advisor: Norma Allemann

CAAE or SEI: 64938922.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Ten-year Analysis of Ultrasound Biomicroscopic Biomarkers of Iris Nevus: parameters at presentation and follow-up visits

Author and Co-authors: Mariana B. B. Dias, Ana Marisa Castello Branco, Melina Correia Morales, Norma Allemann

Purpose: To describe ultrasound biomicroscopy (UBM) features of pigmented iris lesions diagnosed as nevi to identify biomarkers that may suggest early malignant transformation.

Methods: Retrospective review of medical records and imaging data from patients diagnosed with iris nevi between 2011 and 2021 was performed. Demographic data, UBM features of the lesion as: topography, echographic pattern, reflectivity and surface regularity; and dimensions: thickness, radial and transverse extensions were analyzed. Longitudinal comparisons of measurements were conducted in patients with serial exams to detect potential growth.

Results: Fifty-seven patients (57 eyes) with pigmented iris nevi were included. Mean lesion thickness: 0.77 mm (range 0.1?1.46mm) and mean radial extension: 2.17 mm. Iris root was the most frequent site (27.8%), whereas larger lesions most often combined the middle and pupillary regions (18.5%). Most lesions showed homogeneous echogenicity (95%), regular surface (98%), and medium to high internal reflectivity (87%). Lesions were predominantly located inferonasally (31.5%) or inferotemporally (25%), indicating a strong predilection for the inferior half. Two cases (3.5%) demonstrated documented growth during follow-up (8 months and 5 years), and the most relevant imaging biomarkers were increases in radial and transverse extensions, irregularity of the pigmented epithelium, and angle involvement. No cases of confirmed malignant transformation were identified during this period.

Conclusion: UBM provided detailed morphological assessment of pigmented iris lesions, enabling precise evaluation of internal structure, possible ciliary body involvement, and subtle dimensional changes over time - key imaging biomarkers that may help predict malignant transformation. The low rate of growth and absence of malignant transformation in this ten-year study reinforce the benign nature of most iris nevi and highlight the value of UBM as a noninvasive and reliable tool for long-term follow-up.

Keywords: Iris nevus, ultrasound biomicroscopy, anterior segment tumors, ocular oncology, iris melanoma.

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Deadline: 10/2025

FORMAT:
Abstract should contain:
Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords

Poster guidelines:
90cm x 120cm

24. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Daniel Martins Rocha - PG1
e-mail: martinsrocha@gmail.com

Advisor: Solange Rios Salomão

CAAE or SEI: 86588125.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: STEREOSCOPIC ACUITY IN PATIENTS WITH INHERITED RETINAL DISEASES

Author and Co-authors: Daniel Martins Rocha, Adriana Berezovsky, Sung Eun Song Watanabe, Glaycielli Pereira Santos Mandaro de Assis, Solange Rios Salomao

Purpose: Stereopsis refers to the ability to perceive depth and is closely related to visual acuity. However, the relationship between stereoscopic acuity and retinal function remains unclear. We aimed to measure stereoscopic acuity in patients with inherited retinal diseases referred for full-field electroretinography (ffERG).

Methods: In this prospective observational study, stereoacuity (SA) was assessed using the Titmus Fly Test presented at 40 cm. Scores were categorized as normal (40 arcsec), mildly reduced (50-100 arcsec), reduced (140-400 arcsec), or poor (greater 400 arcsec). Inclusion criteria were: participants aged greater than 18 years, informed consent, and binocular best-corrected near visual acuity (BCNVA) of 20/400 or better. Exclusion criteria were manifest strabismus, nystagmus, ocular motility restriction, and significant media opacities. ffERGs were performed in accordance with the standards of the International Society for Clinical Electrophysiology of Vision (ISCEV). Spearman correlation was used to examine associations between stereoacuity, BCNVA, and 30-Hz flicker amplitude.

Results: Twelve patients (mean age: 41.75 years; SD: 20.91; range: 18-76 years; median: 32.79) were included, 6(50 percent) females. SA was present in 10 participants(83 percent), while 2(17 percent) showed no stereopsis. Normal SA was observed in 1 participant(11 percent), a 31-year-old female with Oguchi disease and BCNVA 20/20. Mildly reduced stereoacuity was found in six patients (50 percent) - two patients with retinitis pigmentosa, two with Stargardt disease, one with Best disease, and one with cone dystrophy. Reduced SA was found in 2 patients (17 percent) - one with reticular dystrophy and one with Stargardt disease, while poor SA was observed in one patient with Best disease. No significant correlation was found between SA and either BCNVA or 30-Hz flicker amplitude.

Conclusion: In this small cohort of patients with inherited retinal diseases, stereoacuity was present in most cases, though with substantial variability. Future studies with larger samples and the inclusion of central retinal function assessment using multifocal ERG are warranted to better elucidate the potential relationship between stereopsis and retinal function in these conditions.

Keywords: stereopsis, visual acuity, electroretinography

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25. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Pedro Antonio Nogueira Filho - PG1
e-mail: pedro.nogueira@unifesp.br

Advisor: Mauro Campos

CAAE or SEI: 38273220.4.0000.5505

5. ABSTRACT (REQUIRED):

Title: Epidemiological statistical analysis comparing public and private care at the Ophthalmology Emergency Room in the city of São Paulo, involving Hospital São Paulo x H.Olhos.

Author and Co-authors: Author and Co-authors: Pedro Antonio Nogueira Filho, Caio Regatieri, Mauro Silveira De Queiroz Campos
Advisor: Mauro Silveira De Queiroz Campos

Purpose: The creation of a database that will help health is important and impactful for modern society and can directly impact the quality of life for the population (Pini Ben-Elazar ? Mor Research Applications (IL);
It is of fundamental importance that the data stored and referring to a medical specialty can be compiled and compared between different services so that, based on this, it is possible to carry out statistical and epidemiological analyzes that will result in identifying characteristics and patterns of those more frequent pathologies, for example. example in the routine of the Ophthalmological Emergency Room, as well as defining measures for the prevention and control of diseases and other frequent conditions that affect the eyes and vision of the population.

Methods: An epidemiological statistical analysis will be used, based on data stored in the electronic medical record, in a comparative way between a specialized public and a private medical service, relating information such as gender, age, visual acuity, diagnosis, ICD-10 (International Statistical Classification of Diseases and Health Related Problems) and place of origin of the patient. The work will consequently be structured and presented from a descriptive study referring to the findings analyzed from this sample.

Results: In progress. Data collection regarding consultations at the Ophthalmology Emergency Room of São Paulo Hospital is underway. Now including cases of infection treated within the same epidemiological window. The private epidemiological statistical analysis will be based on a sample of electronic medical records from 500,000 patients treated at the Ophthalmology Emergency Room of the H. Olhos Group during the period from 2011 to 2019, proportionally to the same period at São Paulo Hospital.

Conclusion: It is understood that there is a need for a comparative assessment between the private and public service in order to allow the identification of any differences between these groups regarding the incidence of eye diseases and the need for evaluation in the Emergency Room.

Keywords: ophthalmology, epidemiology, emergency room, trauma, infection

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Poster guidelines:
90cm x 120cm

26. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Ariane Pamela Luttecke-Anders - PG1
e-mail: ariane.luttecke@pucv.cl

Advisor: Solange Rios Salomão

CAAE or SEI: 78933524.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: NEAR VISION IMPAIRMENT AND LIMITED REFRACTIVE COVERAGE IN ADULTS FROM BARCELOS, BRAZILIAN AMAZON

Author and Co-authors: Luttecke-Anders, Ariane; Fernandes, Arthur; Casagrande, Diego; Berezovsky, Adriana; Salomão, Solange R; Belfort Jr., Rubens

Purpose: To determine the frequency of near vision impairment (NVI) and the effective refractive coverage (eREC) for near vision among adults with restricted access to eye care services, assisted in public primary care units in Barcelos, Amazonas, Brazil.

Methods: Adults aged 18 years and older who sought healthcare in two public primary health care units were invited for comprehensive eye examinatios. Binocular uncorrected (UCNVA), presenting (PNVA), and best-corrected (BCNVA) near visual acuity were measured with a logMAR chart positioned at 40 cm. Ophthalmologists performed anterior and posterior segment evaluations and subjective refraction, including additional tens testing, to determine BCNVA. NVI was defined as binocular PNVA worse than 20/40. Presbyopia was considered the main cause of NVIwhen BCNVA improved to 20/32 or better. eREC for near vision eas calculated based on unmet, undermet, and met needs. Multiple logistic regression models adjusted for sex, age, and education were used to explore associated factors.

Results: A total of 262 adults (157 women; 59.9%) aged 18-86 years (mean=52.5±14.0) were examined. Uncorrected NVI was found in 222 participants (84.7%, 95% CI: 79.8 to 88.6%), and presenting NVI in 209 individuals (79.8%, 95% CI: 74.4 to 84.2%). Both conditions were strongly associated with increasing age (p

Conclusion: Most participants had marked near vision impairment, even with their current vision aids. The low effectiveness of refractive error correction for near vision highlights a substantial gap in access to ophthalmological services. Expanding affordable provision of near glasses is urgently needed to address the uncorrected presbyopia burden in isolated Amazonian populations.

Keywords: Brazilian Amazon; Near vision impairment; Presbyopia; Refractive error coverage

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Poster guidelines:
90cm x 120cm

27. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Gustavo David Ludwig - PG0
e-mail: guludwig@gmail.com

Advisor: Tammy H. Osaki

CAAE or SEI: 69650423.4.0000.5505

5. ABSTRACT (REQUIRED):

Title: Comparative Analysis of Extracellular Matrix Remodeling After Fractional CO2 Laser Treatment

Author and Co-authors: Gustavo D. Ludwig, Midori H. Osaki, Mariane Wingter, Juliana Dreyfuss Regatieri and Tammy H. Osaki

Purpose: To evaluate changes in extracellular matrix composition, particularly collagen types I and III, following fractional CO? laser treatment, through comparison between treated and untreated hemifaces in patients undergoing blepharoplasty.

Methods: A prospective study was conducted with twelve patients (Fitzpatrick phototypes I?III) who underwent fractional CO? laser treatment on one hemiface. Three months after laser application, blepharoplasty was performed for tissue harvesting. Biopsy samples from both treated and untreated sides were analyzed for extracellular matrix composition, focusing on collagen type I and III density and organization.

Results: Histological and molecular analyses are currently in progress. Preliminary expected results include increased collagen type I deposition and improved collagen I/III ratio in laser-treated tissues, indicating enhanced neocollagenesis and extracellular matrix reorganization.

Conclusion: This study findings will help to elucidate the mechanisms by which fractional CO? laser promotes dermal remodeling and collagen synthesis, contributing to a deeper understanding of the effects of laser resurfacing in periorbital rejuvenation and skin regeneration.

Keywords: blepharoplasty; CO2 laser; collagen

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Poster guidelines:
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28. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Glaycielli Pereira Santos Mandaro de Assis - PG1
e-mail: glayci@me.com

Advisor: Adriana Berezovsky

CAAE or SEI: 84430624.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Retinal Ganglion Cell Function in Patients with diffuse and macular disease

Author and Co-authors: Glaycielli Pereira Santos Mandaro de Assis, Sung Eun Song Watanabe, Solange Rios Salomão, Daniel Martins Rocha, Arthur Gustavo Fernandes, Adriana Berezovsky

Purpose: The measure of the full-field photopic negative response of light-adapted full-field electroretinogram allows for evaluating the function of the innermost retinal layers, which primarily contain retinal ganglion cells (RGCs) and other non-neuronal elements of the entire retina. The purpose of this study was to measure the photopic negative response (PhNR) from patients with either diffuse (DRD) or central (MD) retinal diseases.

Methods: In this observational, retrospective, cross-sectional study, PhNR was recorded from patients with DRD or MD compared to healthy controls. PhNR was elicited with red stimulus (640 nm, 1 cd·s/m² with 4 ms duration) on a blue background (450 nm, 10 cd/m²). Amplitude (μV) and peak time (ms) for a-wave (photoreceptors), b-wave (inner retina) and PhNR (ganglion cells) were analyzed.

Results: Fifty-four DRD (61.1% females, mean age 35.4 ± 19.5 years), 37 MD (67.6% females, mean 45.3 ± 17.4 years old), and 44 controls (34.1% females, mean 40.2 ± 18.0 years old) were tested. Mean PhNR amplitudes were, respectively, -10.17±8.21; -23.93±11.06 and -31,49±7.42 for DRD, MD and controls, with DRD and MD showing significantly reduced values when compared to controls (20.39; CI, 16.89 to 23.89; p

Conclusion: The PhNR was severely reduced in diffuse retinal diseases and mildly reduced in macular diseases. Assessment of retinal ganglion cell function using the PhNR might enhance both prognostic and monitoring value in macular and diffuse retinal diseases.

Keywords: photopic negative response; retinal ganglion cells, retinal diseases; electroretinogram

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29. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Tais Couto Bernardes P Estrela - PG1
e-mail: taisestrela@hotmail.com

Advisor: Rubens Belfort Jr.

CAAE or SEI: Pro00103899-CR-1.2

5. ABSTRACT (REQUIRED):

Title: Augmented bimedial rectus recessions for DIET: The critical role of convergence amplitudes

Author and Co-authors: Tais Estrela, MD1,2; Kexin Zhang BS2; Linda R Dagi MD1
1Department of Ophthalmology, Boston Children?s Hospital, Harvard Medical School, Boston, MA
2 Department of Neuro-Ophthalmology, Mass Eye and Ear, Harvard Medical School, Boston, MA

Purpose: Surgical undercorrection remains a frequent challenge in the management of age-related divergence insufficiency (DIET) and decompensated distance esophoria, two common variants of nonacute acquired comitant esotropia with distance diplopia (NACEDD).1 Augmenting standard medial rectus recessions has helped, but not eliminated, recurrence.2 We assess the success when the dose augmentation of bimedial rectus recessions (BMR) incorporates pre-operative convergence fusional amplitudes (CA).

Methods: This retrospective review included patients with NACEDD treated with BMR. Inclusion required preoperative CA measurement at distance. Prior strabismus surgery resulted in exclusion. Surgical success required post-operative phoria within 5 PD and the absence of diplopia at distance and near. We compared the success of surgery when dosing of BMRs was based on preoperative distance misalignment plus a minimum of distance convergence fusional amplitudes (Group A) versus those with less augmentation (Group B).

Results: We identified 61 patients (71% female) with a median age of 53 years (IQR 37, 68) followed for a mean 10 weeks after surgery (IQR 0.9, 17). The median pre-operative distance deviation was 17? (IQR 12?, 23?); near deviation 12? (IQR 4?, 18?) and CA 14? (IQR 10?, 20?). There was no significant difference in pre-operative distance deviation between groups (P=0.21). Near deviation and CA were significantly greater in group B (P=0.032, P

Conclusion: Augmenting BMRs by the magnitude of fusional CA may improve success. This permits greater augmentation with minimal risk of postoperative diplopia.

Keywords: Bimedial recession, divergence insufficiency esotropia

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30. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Felipe Marques Taguchi - PG1
e-mail: felmct@gmail.com

Advisor: Wallace Chamon

CAAE or SEI: 66109322.9.0000.5505

5. ABSTRACT (REQUIRED):

Title: Assessment of a Web-Based Application for Keratoconus Detection Using Corneal Axial Curvature Maps

Author and Co-authors: Felipe Marques de Carvalho Taguchi, Lucas Orlandi Oliveira, André Orlandi Oliveira, Edson Shizuo Mori, Jarbas Caiado de Castro Neto, Wallace Chamon

Purpose: To evaluate the performance of an online application using convolutional neural networks (CNNs) in the multiclass detection of keratoconus, and assess the effect of artifacts on image classification.

Methods: Cross-sectional observational study, based on Placido topography axial curvature maps obtained from a single center. The images were labeled by expert ophthalmologists as normal or keratoconus with varying severity (KC1-KC4). The dataset was divided into two groups: without grid artifacts and with artifacts. The performance in each group was measured by sensitivity, specificity, accuracy, and confusion matrix distribution.

Results: Of 120 topography images, 60 were artifact-free and 60 included grid and number patterns. For the grid-free images, the CNN achieved 100% sensitivity, 85.42% specificity, and 42.98% accuracy. When artifacts were present, sensitivity remained 100%, but specificity decreased to 75%, and accuracy to 41.23%.

Conclusion: The application demonstrated high sensitivity in detecting keratoconus in both artifact-free and pattern-overlaid images. However, the presence of grid artifacts negatively impacted specificity. These results suggest that while the model is robust for keratoconus detection, further refinement is necessary to address the influence of visual artifacts on classification performance.

Keywords: Artificial Intelligence; Computer Vision; Convolutional Neural Network; Keratoconus; Placido topography

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31. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Erika Mota Pereira - PG1
e-mail: erikampd@hotmail.com

Advisor: Carolina Pelegrini Gracitelli

CAAE or SEI: 697245236.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Enhancing Clinical Confidence and Skills: Effects of Online Training in Pediatric Ophthalmology for Brazilian Ophthalmologists

Author and Co-authors: Erika Pereira, Julia Rossetto, Luisa Hopker, Ana Letícia Darcie, Carolina Gracitelli

Purpose: To evaluate the effectiveness of the CHANGE (CHildren Assistant Guide Eye) online training program in improving self-assessed skills and confidence among Brazilian ophthalmologists in pediatric ophthalmology.

Methods: This prospective interventional study evaluated ophthalmologists and residents enrolled in the CHANGE online training program, which comprises four sequential modules integrating theory and practical simulations to enhance pediatric eye care skills. Participants completed pre- and post-training questionnaires assessing self-reported competencies in retinoscopy, spectacle prescription, ocular motility, amblyopia, and myopia management. Statistical analysis compared pre- and post-test scores.

Results: Among the 101 pre-training and 54 post-training responses, 23 were directly matched, a subset selected based on the high statistical power observed in the paired data. Most participants (95%) were ophthalmology residents. Prior to training, 82.6% of participants reported difficulties with retinoscopy, 39.1% with spectacle prescription, and 34.8% with amblyopia management. Post-training, significant improvements were observed across all assessed domains, particularly in retinoscopy, amblyopia treatment, and myopia management (p

Conclusion: The CHANGE online training program significantly enhanced pediatric ophthalmology skills among Brazilian ophthalmologists, particularly in retinoscopy and amblyopia management. These findings support the integration of structured digital education as a scalable approach to improving pediatric eye care training.

Keywords: online training program; Pediatric Ophthalmology; retinoscopy; amblyopia

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32. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Luiza Moschetta Zimmermann - PG0
e-mail: luizazimm@gmail.com

Advisor: Mauro Campos

CAAE or SEI: 90415125.2.0000.5479

5. ABSTRACT (REQUIRED):

Title: RANDOMIZED, DOUBLE-BLIND, COMPARATIVE CLINICAL TRIAL BETWEEN TOPICAL LOSARTAN AND MITOMYCIN C IN SURFACE REFRACTIVE SURGERY IN MYOPIC PATIENTS

Author and Co-authors: Luiza Moschetta Zimmermann, Felipe Trovão de Figueirôa, Luiz Guilherme Ito da Cruz, Ana Luísa Caetano Lopes Martins, Bernardo Kaplan Moscovici, Sergio Felberg, Renato Giovedi Filho, Tais Wakamatsu, Mauro Silveira de Queiroz Campos

Purpose: To compare the predictability and efficacy and to evaluate the safety of topical losartan versus mitomycin C in patients with moderate to high myopia undergoing PRK surgery.

Methods: This is a prospective, comparative, randomized clinical trial, blinded regarding the use of mitomycin, with an intraindividual (paired-eye) design, in which one eye will serve as the control for the other. The study will include 80 eyes from 40 patients with myopia and/or myopic astigmatism undergoing PRK with mitomycin C in one eye and PRK with postoperative topical losartan in the contralateral eye. The evaluation of the predictability and efficacy of topical losartan compared with MMC will be performed through the analysis of visual acuity and refractive data. The safety of topical losartan will be assessed based on epithelial healing time and haze formation.

Results: To date, eight patients underwent bilateral surgery. All eyes showed complete epithelialization in both groups by the time of therapeutic contact lens removal on the fourth postoperative day. Visual acuity has been similar between eyes up to this point. No noteworthy side effects or adverse events have been observed.

Conclusion: So far, topical losartan has proven to be comparable or non-inferior to MMC in surface refractive surgery.

Keywords: PRK, topical losartan, haze, corneal opacity, postoperative visual acuity.

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Methods
Results,
Conclusion
Keywords

Poster guidelines:
90cm x 120cm

33. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Daniel Diniz Da Gama - PG1
e-mail: danieldiniz@outlook.com

Advisor: Paulo Schor

CAAE or SEI: 1921160222

5. ABSTRACT (REQUIRED):

Title: Polydioxanone Membrane for Guided Conjunctival Tissue Reconstruction: An Experimental Model in Rabbits

Author and Co-authors: Daniel Diniz da Gama, Gabriela Martines, Moacyr Rigueiro, Matheus Cruz, Paulo Schor

Purpose: To evaluate the clinical and histopathological performance of polydioxanone
(PDO) membranes in conjunctival reconstruction compared with amniotic membrane
(AM), assessing epithelialization, inflammation, and tissue integration in a rabbit model.

Methods: Fifteen New Zealand white rabbits underwent conjunctival resection, with
each eye receiving either a PDO or AM graft. Animals were euthanized at 7, 14, 21, and 28 days. Clinical and histopathological evaluation included epithelialization,
inflammation, fibrosis, granulation tissue, and graft retention.

Results: Both membranes supported conjunctival healing, with no statistically significant differences in epithelialization, inflammation, fibrosis, presence of granulation tissue, or graft remnants. PDO provided structured handling, whereas AM was more delicate but surgically challenging. Histopathology revealed similar inflammatory and regenerative responses, confirming PDO biocompatibility.

Conclusion: The PDO membrane is a viable synthetic alternative to AM for conjunctival
reconstruction. Despite minor differences in handling and degradation, PDO exhibited
comparable efficacy. Further human studies are needed to validate its application.

Keywords: polydioxanone membrane; amniotic membrane; conjunctival reconstruction; ocular surface repair

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34. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Cristiana Ronconi Lopes - PG1
e-mail: cristianaronconi@gmail.com

Advisor: Paulo Schor

CAAE or SEI: 54089421.2.0000.5505

5. ABSTRACT (REQUIRED):

Title: Real-world evidence of the use of Cloudscaper optotypes versus LEA symbols for virtual or digital visual acuity measurement in children aged 3 to 16 years

Author and Co-authors: Cristiana Ronconi, Julia Dutra Rossetto, Luisa Moreira Hopker, Ana Carolina Sarmento Barros Carneiro, Bárbara Stofel Ventorin, Paulo Schor

Purpose: This cross-sectional study compared best-corrected visual acuity obtained using Cloudscaper symbols, a novel optotype developed according to ETDRS specifications for children?s virtual screening, with that obtained using LEA symbols.

Methods: A total of 560 children aged 3-16 yr underwent visual acuity test with both Cloudscaper symbols and LS. The test application was standardized using the EyeSpy algorithm.
Additionally, 147 participants were tested with the standard Snellen E paper chart. Paired t tests were performed to assess the clinical significance of logMAR visual acuity differences.

Results: The mean logMAR visual acuity with LEA symbols was 0.12 (standard deviation [SD]=0.18; range, -0.10 to 0.80), while with Cloudscaper symbols it was 0.18 (SD=0.19; range, -0.10 to 0.80). The mean difference between Cloudscaper symbols and LEA symbols was 0.099 logMAR (approximately 0.5 optotypes;SD=0.08; range, 0.0-0.14; p

Conclusion: Cloudscaper symbols provide a reliable tool for visual screening in children. Although they
slightly underestimate visual acuity compared to LEA symbols ? a finding also reported when comparing ETDRS letters with LEA symbols ? Cloudscaper symbols show strong agreement with Snellen E chart measurements. This suggests that Cloudscaper
symbols allow precise visual acuity assessment comparable to the gold standard.

Keywords: Vision screening; Vision tests; Visual acuity; Mobile applications; Eye health; Child health; Diagnostic techniques, Ophthalmological; Child; Preschool child; Adolescent

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Poster guidelines:
90cm x 120cm

35. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Vitor Dias Marin - PG1
e-mail: vitordiasgomesbm@gmail.com

Advisor: Wallace Chamon

CAAE or SEI: 85841425.1.0000.5505

5. ABSTRACT (REQUIRED):

Title: Argentinian Flag Sign in Cataract Surgery: A Comprehensive Video Analysis

Author and Co-authors: Vitor D. Marin; Wallace Chamon; Dimitri Azar

Purpose: To investigate the Argentinian Flag Sign in cataract surgery through a comprehensive analysis of publicly available surgical videos. Specifically, the study aims to quantitatively and qualitatively analyze surgical videos to better understand the underlying biomechanics, the onset of the phenomenon, and its propagation.

Methods: A systematic Google search using the term ?cataract argentinian flag video? retrieved candidate videos. After applying exclusion criteria ? such as absence of the Argentinian flag sign, incomplete footage, poor quality, playback alteration, or duplication ? 50 videos were selected. Each was analyzed at 60 fps in QuickTime Player. Variables assessed included: number of tear directions (distinct propagation paths); time to spontaneous rupture onset (interval from capsule puncture to spontaneous tear); pre-rupture capsulorhexis proportion (ratio of capsulorhexis to capsule diameter at rupture onset); rupture duration time; tear propagation speed; and iris behavior during the phenomenon.

Results: Tear propagation was bidirectional in 45 (90%), unidirectional in 3 (6%), and tridirectional in 2 (4%) videos; no cases exceeded 3 directions. Time to spontaneous rupture was measurable in 44 (88%) videos, ranging from 0.017 to 61.133s (mean 9.267s). Pre-rupture proportion was measurable in 48 (96%) videos and ranged from 0 to 0.910 (mean 0.409). Rupture duration was measurable in 48 (96%) videos and ranged from 0.017 to 35.367s (mean 1.431s). Average propagation speed was measurable in 47 (94%) videos and ranged from 0.090 to 398.530 mm/s (mean 40.865 mm/s). Instantaneous elliptic iris dilation occurred in 33 of 47 (70%) videos, its direction was perpendicular to the rupture propagation.

Conclusion: Conclusion:
Rupture duration is often shorter than the average human reaction time (0.25 s), hindering surgeon?s response and highlighting the importance of its prevention. Additionally, we described the instantaneous elliptic pupillary dilation as a new finding that may be associated with the biomechanics of the Argentinian flag sign.

Keywords: Argentinian Flag Sign, Biomechanics and Surgical Videos Analysis

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Poster guidelines:
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36. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Arthur Buffara Van Den Berg - PG1
e-mail: arthur-vdb@hotmail.com

Advisor: Wallace Chamon

CAAE or SEI: 63996222.4.0000.5505

5. ABSTRACT (REQUIRED):

Title: Reading Performance Following Contralateral Implantation of an Extended Depth of Focus (EDOF) IOL and a Hybrid EDOF Multifocal IOL

Author and Co-authors: Arthur B. van den Berg, MD; Roberta M. van den Berg, MD; Karolinne M. Rocha, MD; Wallace Chamon, MD; George O. Waring, IV, MD

Purpose: To assess objective reading performance at intermediate and near distances using the Salzberg Reading Desk (SRD) (SRD Vision) in patients with cataract who underwent the implantation of a diffractive extended depth of focus intraocular lens (EDOF IOL) in the dominant eye and a hybrid multifocal EDOF IOL in the non-dominant eye.

Methods: This prospective, non-comparative, interventional study included 46 eyes of 23 patients with cataract who underwent bilateral cataract surgery with implantation of the DFR00V Tecnis Synergy IOL (Johnson & Johnson Surgical Vision) in the non-dominant eye and the DXR00V Tecnis Symfony OptiBlue IOL (Johnson & Johnson Surgical Vision) in the dominant eye. At postoperative 6 months, the Salzburg Reading Desk was used to assess distance-corrected reading performance at near and intermediate distances.

Results: Although the monocular reading acuity at the preferred intermediate distance was statistically significantly better in the eyes implanted with the DXR00V IOL, it was better with the DFR00V IOL at preferred near distances. The mean binocular distance-corrected preferred intermediate and near reading acuity was 0.07 ± 0.09 (20/23) and 0.13 ± 0.09 (20/27) logarithm of the minimum angle of resolution, respectively. Other parameters of reading performance, such as reading speed, reading distance, reading time, and smallest scale log print size, were similar between the two IOL groups when assessed monocularly.

Conclusion: Implanting a DFR00V IOL in the non-dominant eye and a diffractive DXR00V IOL in the dominant eye resulted in excellent binocular reading acuity and speed at intermediate and near distances.

Keywords: Cataract, PCIOL, Reading Performance, Phacoemulsification

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Poster guidelines:
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37. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Ivan Corso Teixeira - PG1
e-mail: ivancorso@gmail.com

Advisor: Mauro Campos

CAAE or SEI: 37612620.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Subjective visual quality after bilateral implantation of three diffractive trifocal intraocular lenses: a prospective randomized clinical trial

Author and Co-authors: Ivan Corso Teixeira, Bernardo Kaplan Moscovici, Mauro Silveira de Queiroz Campos

Purpose: To evaluate and compare subjective visual quality after bilateral implantation of three diffractive trifocal intraocular lenses (IOLs) using validated patient-reported outcome measures (PROMs).

Methods: Forty-three patients (86 eyes) with bilateral cataract were randomized to bilateral implantation of AT LISA Tri 839MP, AcrySof IQ PanOptix TFNT00, or Tecnis Synergy OptiBlue ZFR00V IOLs. Three months after second-eye surgery, subjective visual quality was assessed using the Cataract TyPE Spec (TyPE), Near Activity Visual Questionnaire (NAVQ), and Catquest-9SF with Rasch analysis. Outcomes were expressed as median (interquartile range) and compared among groups using nonparametric tests.

Results: Baseline characteristics were similar across groups. Global TyPE scores were high and comparable (56, 54, and 59 for AT LISA, PanOptix, and Synergy, respectively; P=0.322), with Synergy showing higher satisfaction for intermediate vision than PanOptix (P=0.015). Global NAVQ scores were low across groups (2, 1, and 0, respectively; P=0.127). Catquest-9SF Rasch person measures were negative in all groups (?3.52 ± 0.77, ?3.64 ± 0.35, and ?3.79 ± 0.29 for AT LISA, PanOptix, and Synergy, respectively), indicating high perceived function, with no significant intergroup differences. Qualitative analysis confirmed high satisfaction and low incidence of photic phenomena in all groups.

Conclusion: AT LISA, PanOptix, and Synergy trifocal IOLs provided similarly high levels of subjective visual quality, functional satisfaction, and spectacle independence at three months. Although Synergy demonstrated a trend toward better intermediate vision, all three designs achieved excellent patient-reported outcomes, supporting the effectiveness of modern diffractive trifocal IOLs.

Keywords: cataract, pciol, trifocal iol, presbyopia, proms, patient-reported outcome

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Poster guidelines:
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38. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Cecilia Francini Cabral de Vasconcellos - PG1
e-mail: psicoceciliavasconcellos@gmail.com

Advisor: Juliana Sallum

CAAE or SEI: 83475224.9.0000.9867

5. ABSTRACT (REQUIRED):

Title: Effectiveness of Psychotherapy Groups on Emotional Health and Visual Related Quality of Life in Patients with Inherited retinal dystrophies

Author and Co-authors: Cecilia Vasconcellos, Tauany A. S. D. Oliveira, Marina C. Pellissari, Rodrigo Boavista, Gabriela D. Rodrigues, Juliana M. F. Sallum

Purpose: People with inherited retinal dystrophies (IRD) often experience psychological distress and report high rates of anxiety and depression. This study evaluated the effectiveness of a psychotherapy group based on Acceptance and Commitment Therapy (ACT) on emotional health, psychological acceptance, mindfulness, and visual-related quality of life (VRQoL) in adults with IRD.

Methods: This study was retrospective, using data from two psychotherapy groups of 12 sessions that
occurred simultaneously. Questionnaires assessing emotional health, psychological
acceptance, mindfulness, and VRQoL were administered at three time points: pre-intervention, immediately post-intervention, and three months after the sessions ended. Statistical analysis included an evaluation of these constructs at the three time points, as well as a comparison between the two participating groups.

Results: The study included two groups of patients with IRD, one with 7 patients with Stargardt disease and another with 7 patients with retinitis pigmentosa. The mean age of participants was 45.2 years (SD =12). Significant improvements were observed across all constructs evaluated after the intervention and/or three months post-sessions (Table 1 and 2). No statistically significant differences were found between Groups 1 and 2 (p= 1), indicating similar outcomes across groups. Additionally, individual psychotherapy (p = 0.005) and the use of psychiatric medication (p = 0.002) also showed significant effectiveness in improving psychological acceptance and emotional health respectively.

Conclusion: ACT has preliminary efficacy results in the visually impaired population; however, it has not yet been studied in individuals with IRD. In this study, a psychotherapy group was implemented for adults with IRD, yielding improvements in all the constructs examined. This intervention model can be applied to other participants to validate this method. Group psychotherapy, based on other psychological approaches, is already utilized in clinical and rehabilitation contexts, and the data presented here emphasize its effectiveness and
the need to combine individual psychotherapy and psychiatric medication in certain cases.

Keywords: Inherited retinal dystrophies; Visual impairment; Acceptance and Commitment Therapy; Psychotherapy group

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39. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Erika Sayuri Yasaki - PG1
e-mail: erikayasaki@yahoo.com.br

Advisor: Juliana Sallum

CAAE or SEI: 22275719.1.0000.5505

5. ABSTRACT (REQUIRED):

Title: CERKL related inherited retinal dystrophy in a Brazilian cohort: genetics and phenotype correlation

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

Purpose: To analyze the genetics and phenotype spectrum of CERKL related inherited retinal dystrophy in an outpatient clinic.

Methods: 2841 medical records of Brazilian patients with diagnosis of IRD registered at Instituto de Genética Ocular, Brazil, between January 2006 and July 2025 were retrospective reviewed and 53 patients from 50 unrelated families with molecular diagnosis of an inherited retinal dystrophy related to CERKL gene were selected. Clinical data and molecular findings were analyzed for genotype-phenotype correlation.

Results: Most patients presented clinically as cone rod dystrophy (CORD) (42/53 patients), 9 patients as retinitis pigmentosa (RP), and 2 patients as macular dystrophy (MD).Age of presenting symptoms ranged from early childhood (7 years old) to adulthood (40 years old).We have found 25 different variants described in CERKL gene and the homozygous c.847 C>T variant was the most common molecular finding in this cohort which was identified in 24 homozygous and 9 heterozygous out of 53 individuals.

Conclusion: the phenotype of CERKL related IRD is wide, from isolated macular disease to severe retina involvement, age of onset is earlier with a premature drop in visual acuity. In this cohort the homozygous nonsense variant c.847 C>T was the most common molecular diagnosis among rare CERKL related IRD.

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

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40. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Olivia Araujo Zin - PG1
e-mail: olivia.zin@unifesp.br

Advisor: Juliana Sallum

CAAE or SEI: 40383620.6.3001.5269

5. ABSTRACT (REQUIRED):

Title: Genetic characteristics of 30 Brazilian patients with inherited retinal dystrophies

Author and Co-authors: Zin OA; Neves LM; Motta FL; Almeida Jr DC.; Cunha DP; Agonigi BNS; Horovitz DDG; Malacarne J; Rodrigues APS; Rodrigues GD; Tinoco ML; Zin AA; Vasconcelos ZFM and Sallum JMF.

Purpose: To investigate genotype-phenotype correlations of Brazilian families with inherited retinal dystrophies. Furthermore, to analyze the impact of results on clinical diagnosis and family counselling.

Methods: Ophthalmological and genetical clinical evaluation of 30 individuals with a clinical diagnosis of hereditary retinal dystrophy. Peripheral blood was collected and whole exome sequencing performed, followed by bioinformatics analysis. Approval from the Ethics Committee of UNIFESP was conceded under protocol code 4.508.968.

Results: Eighteen out of the 30 (60,0 %) individuals had conclusive results with pathogenic (P) or likely pathogenic (LP) variants. The most common gene was ABCA4 followed by USH2A, BEST1 and RHO genes with 2 individuals each. Four cases were syndromic retinal dystrophies such as Bardet-Biedl and Usher syndromes (in BBS1, USH2A and CDH23 genes). Two individuals presented with one P or LP variant in heterozygosis in genes with an autosomal recessive inheritance (SLC38A8, CEP290 and COL9A2). Further studies are being performed in search of the missing variants. Two individuals presented with a variant of uncertain significance (VUS) in a gene in accordance with their phenotypes (BEST1 and GPR143). Leber?s Congenital Amaurosis by biallelic variants in RPE65 was also identified and patient is now candidate for gene therapy treatment with Voretigene neparvovec.

Conclusion: This cohort of patients with inherited retinal dystrophies has expressive genetic findings. Through molecular analysis, a young patient was identified as a candidate for the only ocular gene therapy treatment available. Other genes, whilst not having approved treatments, have many ongoing phase 3 clinical trials and these genetic results enable future participation. Nonetheless, even when no prospection of treatment is available, conclusive genetic results empower patients about their conditions, possible systemic associations and prognosis. The impact of these results affects not only the individual but extends to their families through family counselling.

Keywords: Inherited retinal dystrophies, whole exome sequencing, gene therapy

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41. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Luis Filipe Nakayama - Post-doc
e-mail: nakayama.luis@unifesp.br

Advisor: Caio Vinicius Saito Regatieri

CAAE or SEI: 33842220.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: From Pixels to Embeddings: Efficient and Privacy-Aware Learning from the BRSET Ophthalmic Dataset

Author and Co-authors: Luis Nakayama; Caio Regatieri; Leo Celi; David Restrepo

Purpose: Artificial intelligence (AI) and computer vision have revolutionized ophthalmology by enabling large-scale, automated screening for diseases such as diabetic retinopathy, glaucoma, and age-related macular degeneration. However, the computational and storage demands of training deep neural networks on full-resolution retinal images hinder their use in low-resource settings. We introduce BRSET-Embeddings, a lightweight, privacy-enhanced offshoot of the Brazilian Multilabel Ophthalmological Dataset (BRSET), in which each image is represented by a compact embedding vector derived from self-supervised vision models.

Methods: A total of 16,266 retinal fundus photographs from 8,524 Brazilian patients were encoded using self-supervised models (ViT-S/16 and ConvNeXt-Tiny trained with DINOv3). Each image was represented by a latent embedding combined with essential metadata (patient ID, sex, diabetes status, ICDR grade, and camera model). Downstream classification tasks were performed using multilayer perceptrons (MLPs) calibrated with Platt scaling, and results were visualized using PCA, t-SNE, and UMAP.

Results: Compared to the original BRSET deep-learning experiments?where ConvNeXt V2 trained on raw images achieved AUC = 0.97 and F1 = 0.89 for diabetic retinopathy, and AUC = 0.91 and F1 = 0.83 for sex classification?the embedding-based models maintained high diagnostic performance (AUC = 0.94, F1 = 0.81) while showing reduced demographic predictability (AUC = 0.71 for sex). Data volume was reduced over 100× (from ~50 GB to

Conclusion: Embedding-only representations enhanced privacy by minimizing exposure of identifiable anatomical features while retaining clinically relevant information. BRSET-Embeddings achieves a favorable balance between accuracy, efficiency, and data protection?maintaining near-original diagnostic performance with drastically lower computational costs and re-identification risk. This compact, reproducible format supports scalable AI education, low-resource research, and privacy-conscious ophthalmic applications, especially in low- and middle-income settings.

Keywords: Artificial Intelligence; Embedding representation; Retina

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42. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Lucas Zago Ribeiro - PG1
e-mail: lucaszagoribeiro@gmail.com

Advisor: Caio Vinicius Saito Regatieri

CAAE or SEI: 49171021.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Intra-Practice Artificial Intelligence?Based Fundus Screening on Routine Ophthalmologic Workflow

Author and Co-authors: Lucas Zago Ribeiro, Luis Filipe Nakayama, Fernando Korn Malerbi, Caio Vinicius Regatieri

Purpose: Artificial intelligence (AI) for fundus image analysis has been extensively studied; however, real-world evaluations assessing its impact within clinical workflows remain scarce. This study aimed to evaluate the characteristics and diagnostic performance of an intra-practice AI-based screening protocol using handheld fundus imaging within the routine workflow of a single ophthalmologic center.

Methods: A retrospective study was conducted including all patients attending routine ophthalmologic consultations over a one-month period. Fundus images were captured using a handheld camera, centered on the posterior pole. The images were automatically analyzed on-site by the embedded AI algorithm at the time of examination and were subsequently independently graded by a retina specialist. Predefined exclusion criteria included image quality, visual symptoms, or ocular features that limit posterior segment evaluation or require peripheral assessment.

AI-based image classifications were categorized as normal or abnormal, both per patient and per eye, and compared with the retina specialist?s grading. Diagnostic metrics included sensitivity, specificity, accuracy, and Cohen?s kappa coefficient.

Results: A total of 350 patients (691 eyes) were screened, with 25 patients excluded according to predefined criteria. Ages ranged from 5 to 92 years (64.46 ± 14.62). The most frequent retinal abnormality identified was pigmentary or degenerative maculopathy (80 eyes, 12.21%).

When analyzed per patient, the AI-based screening achieved a sensitivity of 0.882, specificity of 0.894, and kappa of 0.787 compared with specialist grading. Non-compromising imaging artifacts were also frequently observed, affecting 70 eyes (10.68%).

Conclusion: This study demonstrates the feasibility of implementing AI-assisted clinical protocols to support routine ophthalmologic workflow. However, it also highlights the limitations of image acquisition in real-world settings, particularly the impact of artifacts and false-negative detections on diagnostic reliability. Future approaches involving pre-AI algorithms focused on artifact detection and image quality assessment may enhance reliability and facilitate broader adoption of AI-driven screening workflows in ophthalmology practices.

Keywords: artificial intelligence, retina, real-world

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43. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Mateus Pimenta Arruda - PG1
e-mail: mateusarruda025@gmail.com

Advisor: Luiz Lima

CAAE or SEI: 92790725.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Clinical and Multimodal Imaging Findings in Extensive Macular Atrophy with Pseudodrusen (EMAP): A Systematic Review and Meta-Analysis

Author and Co-authors: Mateus Pimenta Arruda, MD; Rian Vilar Lima; Giulia Steuernagel Del Valle, MD; Mariana Tosato Zinher, MD; Carlos Eduardo de Menezes e Souza Filho, MD; Andres Bravo-Gonzalez, MD; Larissa Irigoyen Teixeira Barbosa; Heitor Santos Nogueira, MD;
Valdez Melo do

Purpose: This systematic review and meta-analysis aimed to integrate the clinical and multimodal imaging features of extensive macular atrophy associated with pseudodrusen (EMAP), and to evaluate its progression and associated risk factors.

Methods: We conducted a systematic review and meta-analysis following PRISMA guidelines (PROSPERO, CRD42024474924). A comprehensive literature search of MEDLINE, EMBASE, Web of Science, and ClinicalTrials.gov was performed up to June 19, 2025. Randomized and nonrandomized studies of EMAP were eligible. Meta-analyses were performed using random-effects models. Heterogeneity was assessed with the I2 statistic, and publication bias by the NOS. The examined outcomes were disease symptoms, best-corrected visual acuity (BCVA), progression of macular atrophy, imaging biomarkers, and systemic associations. EMAP was diagnosed using multimodal imaging analysis.

Results: Sixteen studies met the inclusion criteria for qualitative analysis, and 12 datasets were included (N = 1096 eyes). The mean BCVA at diagnosis was 0.62 logMAR (95% CI: 0.47?0.76; I^2 = 95.6%), with a mean worsening of 0.41 logMAR (3 lines of vision) over 2.1 years. Disease progression involved an increase in the macular atrophy area by an average of 8.3 mm^2 over 3.9 years (95% CI: 3-3.57; I^2 = 69.8%). Optical coherence tomography showed a mean central choroidal thickness of 135.8 (95% CI: 113.3-158.3; I^2 = 94.4%). Electroretinography data indicated a rod dysfunction with abnormal photopic response. Rheumatic fever was reported in 89% of patients across Brazilian cohorts (95% CI: 83.2 - 93; I^2 = 0%).

Conclusion: This meta-analysis has limitations, mostly due to heterogeneity and biases inherent to non-randomized studies of this disease, hence the inconsistencies in the results and hypothesized associations underlying EMAP. Despite the different imaging modalities used to diagnose EMAP, the results demonstrate the common features that characterize and support its diagnosis.

Keywords: Extensive macular atrophy with pseudodrusen; maculopathies; multimodal imaging; risk factors.

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44. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Anna Carolina Araujo Pereira - PG1
e-mail: annaccaraujo@yahoo.com.br

Advisor: Mauricio Maia

CAAE or SEI: 28646920.7.0000.0088

5. ABSTRACT (REQUIRED):

Title: The Use of Amniotic Membrane or Inverted Internal Limiting Membrane Flap for Large or refractory Macular Holes: a prospective, comparative study using microperimetry

Author and Co-authors: ANNA CAROLINA CARVALHO ARAUJO, MD**; ARNALDO F. BORDON, MD, PhD*; VINICIUS FALCÃO, MD*; PATRICIA BORTOLAI, MD*; EDUARDO DIB, MD, PhD?*; MAURICIO MAIA, MD, PhD?

Purpose: To compare microperimetry findings over one year following surgery for the treatment of large and/or refractory macular holes (MH) using human amniotic membrane (HAM) versus an internal limiting membrane (ILM) flap. Secondary endpoints included MH closure rates and best-corrected visual acuity (BCVA).

Methods: In this prospective, randomised, unmasked, single-centre study, 23 patients (25 eyes) with large (?600 micrometers) or refractory MH were randomly assigned to Group 1 (HAM, n = 14) or Group 2 (ILM flap, n = 11). BCVA, OCT, and microperimetry findings were compared.

Results: The closure rate was 100% and 81.8% in groups 1 and 2, respectively (p = 0.276). The mean BCVA was not significantly different at baseline and at the 12-month follow-up. At 12 months, 83.3% and 70% of eyes in groups 1 and 2, respectively, had stable fixation (p = 0.457). The fixation was higher in group 1 at baseline. Sensitivity (dB) results showed a significant difference at 12 months between groups (p = 0.029).

Conclusion: Improvement in macular sensitivity was not statistically better in the HAM group compared to the ILM flap group. Secondarily there was a significant improvement of BCVA in group 1 at month 12. The HAM surgery appears to be safe and effective for the treatment of large and refractory MH, showing good anatomical and functional outcomes.
Clinicaltrials.gov 17 May 2021 (identifier: NCT04904679)

Keywords: amniotic membrane, internal limiting membrane inverted flap, large macular hole, microperimetry, vitrectomy

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45. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Tiago Nelson Rassi - PG1
e-mail: tiagorassi@gmail.com

Advisor: Mauricio Maia

CAAE or SEI: 23089.013658/2024-30

5. ABSTRACT (REQUIRED):

Title: Meta-analysis: long/short-term efficacy of anti-VEGF vs. panretinal photocoagulation in preventing severe complications in proliferative diabetic retinopathy

Author and Co-authors: Tiago N O Rassi , Lucas M Barbosa, Dillan Cunha Amaral, Ricardo N Louzada, Helvécio N F Filho, Guilherme N Marques, Breno C Vieira, Sobha Sivaprasad, Mauricio Maia

Purpose: Studies diverge on the relevance of long-term protection of anti-VEGF against severe proliferative diabetic retinopathy (PDR) complications compared to pan-retinal photocoagulation (PRP). We aim to assess this dispute through a meta-analysis

Methods: We searched PubMed, Embase, and Cochrane databases until August 2024 for studies comparing anti-VEGF with PRP in PDR. Primary outcomes were long-term and short-term incidences of VH, TRD, and PPV-setting short-term follow-up up to 2 years and long-term follow-up over 5 years. Due to a lack of consistent data, TRD events were not stratified by clinical severity. We also evaluated diabetic macular edema (DME) rates and changes in best corrected visual acuity (BCVA) and central macular thickness (CMT). We used R to pool risk ratios (RR) and weighted mean differences with a random-effects model, and appraised evidence certainty using the GRADE tool. PROSPERO CRD42024577668.

Results: We included eight studies with 12,812 eyes. Long-term data showed anti-VEGF reducing TRD (3.4% vs. 11.5%; RR 0.31, 95% CI 0.23-0.42; p = 0.001) with high certainty of evidence. However, PPV (7.8% vs. 9.4%; p = 0.116) and VH rates (11% vs. 18%; p = 0.38) did not differ, with moderate and low evidence certainty, respectively. In the short term, anti-VEGF demonstrated superiority in BCVA and CMT outcomes and reduced DME rates.

Conclusion: Although anti-VEGF was associated with lower TRD rates in the long term, the absence of severity data and the lack of differences in PPV and VH raise questions about its clinical relevance. Long-term findings are limited to only two studies. Future research should stratify TRD by severity and include extended follow-up. In contrast, short-term outcomes consistently favored anti-VEGF for both visual and anatomical results.

Keywords: Anti-VEGF therapy; Diabetic macular edema (DME); Long-term outcomes; Meta-analysis; Panretinal photocoagulation (PRP); Pars plana vitrectomy (PPV); Proliferative diabetic retinopathy (PDR); Tractional retinal detachment (TRD); Visual acuity; Vitreous hemo

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46. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Marcussi Palata Rezende - PG1
e-mail: marcussipr@hotmail.com

Advisor: Rubens Belfort Jr.

CAAE or SEI: 19386619.1.0000.8247

5. ABSTRACT (REQUIRED):

Title: Prospective and dichotomous study of biomarkers with swept?source OCT and OCT?angiography in naive patients with diabetic macular edema.

Author and Co-authors: Marcussi Palata Rezende, Fernanda Atoui Faria, Daniel Prado Beraldo, Julia Polido, Rubens Belfort Jr. and Thiago Cabral.

Purpose: We used state-of-the-art high-resolution retinal imaging to explore the treatment (loading dose of aflibercept) of diabetic macular edema (DME) among treatment-naive patients. Swept-source (SS) OCT and OCT-Angiography (SS-OCTA) were performed, and a dichotomous analysis was conducted to compare responders and treatment-resistant patients (responsive and resistant). Furthermore, treatment responses were evaluated based on the subdivision of choroidal thickness.

Methods: This prospective, noncomparative, interventional case series study examined the following biomarkers: best-corrected visual acuity (BCVA), central macular thickness (CMT), central choroidal thickness (CCT), avascular area of the superficial plexus (AASP), avascular area of the deep plexus (AADP), and vessel density (VD). Data from the baseline and 4-month examinations were compared.

Results: Twenty-eight eyes from 25 patients were included. Significant improvements were observed in BCVA (0.7250 ± 0.23 to 0.3957 ± 0.21; p

Conclusion: BCVA, CMT, CCT, AASP, AADP and VD were improved after treatment. The pretreatment biomarkers did not predict treatment response between the responsive and resistant. Regarding choroidal stratification, values within the normal range of CCT showed the greatest reductions, indicating that these values may be more responsive to treatment. Notably, this is the first study to analyze biomarkers provided by SS OCT and OCTA, stratify the choroid, and perform a dichotomous analysis.

Keywords: aflibercept, swept-source OCT, OCT angiography, diabetic macular edema, diabetic retinopathy, choroidal thickness, biomarkers.

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47. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Keita Takagi - PG0
e-mail: ktakagi@rohto.co.jp

Advisor: Rubens Belfort Jr.

CAAE or SEI: 23123.012345/2024-11

5. ABSTRACT (REQUIRED):

Title: Evaluation of the Vitamin D Ophthalmic Nanoemulsion

Author and Co-authors: KEITA TAKAGI; Rubens Belfort jr, Paulo Schor and Acacio Souza
Co-authors: Prof. Rubens Belfort Mattos, Prof. Paulo Schor, Prof. Acácio Alves de Souza Lima

Purpose: Develop and characterize a vitamin D nanoemulsion suitable for ophthalmic products.

Methods: 1. Particle size and PDI using dynamic light scattering.
2. pH and osmolarity measurement.
3. Sterility assessment via 0.22 ?m filtration and USP testing.
4. Preservative efficacy testing.
5. Stability study at 40°C/75% RH and room temperature storage conditions.

Results: Two formulations were prepared:
Formulation 1: containing vitamin D3, oil, and surfactants
Formulation 2: without vitamin D3, containing only oil and surfactants

The particle size and zeta potential of each formulation were measured.
Formulation 1: particle size = 30.19 nm; zeta potential = ?2.05 mV
Formulation 2: particle size = 30.11 nm; zeta potential = ?6.07 mV

Conclusion: Vitamin D3 is a fat-soluble compound. The first step in developing the formulation was to identify the ideal oil phase. The combinations of surfactants were investigated, taking into account their hydrophilic-lipophilic balance (HLB) values.
Sesame oil was selected as the oil phase, and the surfactant system consisted of Polyoxyethylene (40) stearate and Polyoxyethylene castor oil.

Keywords: Vitamin D, Nanoemulsion, Eye drops

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

Name: Frederico do Carmo Novaes - PG0
e-mail: fred.novaes@gmail.com

Advisor: Caio Vinicius Saito Regatieri

CAAE or SEI: 66256422.7.0000.0068

5. ABSTRACT (REQUIRED):

Title: Retinal OCT Metrics and Cognitive Performance in Individuals with Diabetes Mellitus

Author and Co-authors: Frederico Novaes, Daniela Larrubia, José Levi, Luis Felipe Nakayama, Fernando Malerbi, Caio Regatieri

Purpose: Cognitive impairment is a growing complication of diabetes mellitus (DM). Given the shared embryologic and microvascular features between the retina and brain, optical coherence tomography (OCT) may offer a noninvasive biomarker of diabetes-related neurodegeneration. This study investigated associations between retinal OCT parameters and cognitive performance measured by the Mini-Mental State Examination (MMSE) in individuals with diabetes.

Methods: In this cross-sectional study, diabetic patients underwent OCT imaging and MMSE assessment. Retinal parameters included macular cube volume and thickness, vascular density, and optic disc metrics in both eyes. Demographic and clinical data were analyzed using descriptive and comparative statistics. Correlations between MMSE and ocular parameters were evaluated with Pearson and partial correlations controlling for age, sex, diabetes duration, and body mass index (BMI). A multiple linear regression model examined the independent contribution of ocular metrics to MMSE.

Results: A total of 288 patients were included (mean age 67.9 ± 10.8 years; 54.1% female; diabetes duration 13.0 ± 9.3 years; BMI 30.1 ± 5.7 kg/m²; HbA1c 7.5 ± 1.8%). Mean blood pressures were 140.4/84.1 mmHg; mean eGFR 74.4 ± 20.1 mL/min/1.73 m². In unadjusted analyses, MMSE scores correlated modestly with macular cube volume and thickness in the left eye (r ? 0.16?0.17; p

Conclusion: In diabetic patients, retinal structural and vascular OCT measures showed weak, nonsignificant correlations with cognition after adjustment for systemic factors. OCT findings may mirror overall systemic disease burden rather than direct neurodegenerative changes.

Keywords: diabetes mellitus, cognition, OCT, retina, neurodegeneration, MMSE

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49. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Ricardo Danilo Chagas Oliveira - PG0
e-mail: rdchagas@gmail.com

Advisor: Caio Vinicius Saito Regatieri

CAAE or SEI: 83785424.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Long term outcomes of Yamane Technique Combined with Pars Plana Vitrectomy in Various Indications: A Retrospective Study

Author and Co-authors: Ricardo Danilo Chagas Oliveira; Adriano Cypriano Faneli; Caio Vinicius Saito Regatieri

Purpose: No previous studies have reported long-term visual outcomes and complication rates of Yamane technique fixation combined with Pars Plana Vitrectomy. This retrospective study aimed to describe the long-term clinical outcomes of the Yamane transconjunctival sutureless intrascleral intraocular lens (SIS IOL) fixation technique combined with pars plana vitrectomy (PPV) in patients with aphakia, IOL dislocation, IOL opacification, and lens luxation.

Methods: A retrospective analysis was conducted at a Private Hospital in Brazil. Demographic data, preoperative and postoperative best-corrected visual acuity (BCVA), indications for surgery, pre-existing ophthalmologic comorbidities, follow-up length, necessity for surgical reintervention, and postoperative complications were recorded.As preoperative and postoperative visual acuity did not follow a normal distribution, the Wilcoxon signed-rank test was used for statistical analysis.

Results: The study enrolled 50 patients with various surgical indications: aphakia (9), IOL dislocation (33), IOL opacification (4), and lens luxation (4). Participants, mean age 68.78 ± 15.02 years (range: 14?96), underwent an average follow-up of 11.08 ± 9.99 months (range: 0.39?36.39). BCVA significantly improved from 0.667 ± 0.486 logMAR to 0.523 ± 0.456 logMAR (p=0.0182). Surgical reintervention was needed in 18%, with 8% within three months. Seventeen complications occurred: corneal edema (20%), vitreous hemorrhage (6%), cystoid macular edema plus vitreous hemorrhage (2%), IOL luxation (4%), and IOL luxation plus vitreous hemorrhage in one patient.

Conclusion: The Yamane SIS IOL fixation technique in conjunction with PPV proved to be an effective and dependable surgical approach for complicated cases necessitating additional interventions, as demonstrated by the long-term follow-up results.

Keywords: Surgery; Surgical Retina; Retina; Intraocular Lenses; Suture Techniques

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50. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Stefano Neto Jai Hyun Choi - PG1
e-mail: stechoi91@hotmail.com

Advisor: Caio Vinicius Saito Regatieri

CAAE or SEI: 33842220.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: AI-Driven Teleophthalmology Framework for Rapid Diabetic Eye Screening

Author and Co-authors: Stefano Neto Jai Hyun Choi MP; Fernando Korn Malerbi MD PhD; Vagner Rogério dos Santos PhD; Caio Vinicius Saito Regatieri MD PhD.

Purpose: To demonstrate how an AI-driven teleophthalmology framework has optimized and accelerated the accurate and preventive referral of diabetic patients with suspected diabetic retinopathy to specialized ophthalmologic care.

Methods: The study was conducted in collaboration with the Department of Endocrinology at UNIFESP. A teleophthalmology service, based on a framework developed by the doctoral candidate and integrated with artificial intelligence, was designed for early detection of diabetic retinopathy and rapid referral of patients to the Retina and Vitreous Section at UNIFESP.

Results: A total of 1,524 patients participated in the study using the teleophthalmology framework with AI integration. Among them, 495 were referred to the specialized ophthalmology service, and 488 (98.5%) attended the consultation. Of these, 126 (25.8%) received therapeutic intervention, while the remaining 362 (74.2%) are being monitored annually for disease progression or regression. The average referral time was 13.5 days, compared to 20 days when using the framework without AI.

Conclusion: The AI-integrated framework significantly accelerated the referral of patients with suspected diabetic retinopathy to specialized ophthalmology services. All examinations were reviewed by fellows to confirm that no cases with abnormalities were missed. Patients identified with any level of diabetic retinopathy were promptly referred through the AI-supported system. These results indicate that the AI-integrated framework improved both the speed and accuracy of patient referrals.

Keywords: Telemedicine; Digital Health; Ophthalmology; Retina; Artificial Intelligence.

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51. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Adriano Cypriano Faneli - PG0
e-mail: adrianofaneli@gmail.com

Advisor: Cristina Muccioli

CAAE or SEI: 74296623.9.1001.5505

5. ABSTRACT (REQUIRED):

Title: PERFORMANCE OF A SMALL LANGUAGE MODEL VERSUS A LARGE LANGUAGE MODEL IN ANSWERING GLAUCOMA FREQUENTLY ASKED PATIENT QUESTIONS

Author and Co-authors: Adriano Cypriano Faneli, Rafael Scherer, Rohit Muralidhar, Marcus Guerreiro Filho, Luiz Beniz, Veronica Vilas Boas, Douglas Costa, Alessandro A. Jammal, Felipe A. Medeiros

Purpose: Large language models (LLM) have been shown to answer patient questions in ophthalmo logy similar to human experts. However, concerns remain regarding their use, particularly related to patient privacy and potential inaccuracies that could compromise patient safety.
This study aimed to compare the performance of an LLM in answering frequently asked patient questions about glaucoma with that of a small language model (SLM) trained locally on ophthalmology-specific literature.

Methods: We compiled thirty-five frequently asked questions on glaucoma, categorized into six do-
mains: pathogenesis, risk factors, clinical manifestations, diagnosis, treatment and prevention, and prognosis. Each question was posed to both a small language model (SLM) using a Retrieval-Augmented Generation (RAG) framework, trained on ophthalmology-specific literature, and to a large language model (LLM; ChatGPT 4o, OpenAI). Three glaucoma specialists independently assessed the answers using a three-tier accuracy rating scale (poor, borderline, and good). The majority consensus method was applied to assign a final evaluation for each answer, and a quality score was calculated based on the accuracy rating assigned by each evaluator. Readability grade level was assessed using four formulas: Flesch-Kincaid Level, Gunning Fog Index, Coleman-Liau Index, and the Simple Measure of Gobbledygook Index.

Results: The answers from the SLM demonstrated comparable quality with ChatGPT 4.0, scoring 7.9 ± 1.2 and 7.4 ± 1.5, respectively, out of a total of 9 points, respectively (p= 0.13). The accuracy rating was consistent overall and across all six glaucoma care domains. Both models provided answers considered unsuitable for healthcare-related information, as they were difficult for the average layperson to read.

Conclusion: Both models generated accurate content, but the answers were considered challenging forthe average layperson to understand, making them unsuitable for healthcare-related information. Given the specialized SLM?s comparable performance to the LLM, its high customization potential, lower cost, and ability to operate locally, it presents a viable option fordeploying natural language processing in real-world ophthalmology clinical settings.

Keywords: Online health information, ChatGPT4.0, Glaucoma, Large language model, Small language model.

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Poster guidelines:
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52. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Leticia Colodetti Zanandréa - PG0
e-mail: leticiaczanandrea@gmail.com

Advisor: Cristina Muccioli

CAAE or SEI: 91225825.5.0000.5071

5. ABSTRACT (REQUIRED):

Title: Clinical and Epidemiological Profile of Patients Treated for Ocular Tuberculosis: A 12-Year Review at HUCAM/UFES

Author and Co-authors: Leticia Colodetti Zanandréa

Purpose: To characterize the epidemiological and clinical/ophthalmological features of patients with ocular tuberculosis and to outline the diagnostic and management protocol used at the Uveitis Outpatient Clinic of the University Hospital, Federal University of Espírito Santo.

Methods: A 12-year case series study of patients diagnosed with ocular tuberculosis at the University Hospital of the Federal University of Espírito Santo. Data were collected from the Tuberculosis Treatment Registry Book of the Phthisiology Outpatient Clinic, as well as from physical and electronic medical records of the patients, with more than 25 variables analyzed.

Results: Mean age was 46.2 years (median 46), 53.8% females, 54% mixed-race. Comorbidities included hypertension (33.4%), diabetes (21.3%), rheumatologic disease (13.3%), and lifestyle factors (36.4%). One patient was HIV-positive, three had prior syphilis. Systemic TB occurred in 11.4%, mainly pulmonary (50%); 38% reported TB contact. Chest imaging was normal in 75.8%, PPD ?10 mm in 84.6%. Ocular complaints included decreased visual acuity (56% of eyes), hyperemia (20.6%), pain (16.4%), scotomas (6.8%), tearing (6%), itching (5.1%), photophobia (4.3%). Anterior segment findings: cells/flare (45%), synechiae (24%), anterior vitritis (23.2%), ciliary injection (12.9%), keratic precipitates (fine 12.9%, pigmented 7.7%, mutton-fat 7.7%), lens opacity (10.3%), corneal edema (5.1%), keratitis (4.3%), Descemet folds (4.3%), phlyctenules/scleritis/fibrosis (3.4% each), band keratopathy, iris atrophy/nodules, hypopyon, vesicular eyelid lesions (1.7% each), phthisis bulbi (0.8%), no alteration (23.3%). IOP 10?20 mmHg 75%, >31 5.1%, 21?30 4.3%, 0?9 0.2%, unreported 12.9%. Posterior findings: choroidal involvement (38.8%), multifocal (25.8%), focal/granuloma (10.3%), serpiginous-like (1.7%), tuberculoma (0.8%), optic neuropathy/neuroretinitis (17.2%), vasculitis/retinitis (16.3%), vitreous cells (10.3%), retinal detachment (8.6%), macular edema (7.7%), vitreous haze (4.3%), snowballs/snowbanks (0.8% each), unfeasible exam (7.7%), no alteration (25.8%).

Conclusion: Ocular tuberculosis presents varied anterior and posterior findings, often with normal chest imaging. PPD positivity and TB contact history were key for diagnosis. The study highlights the importance of early recognition, comprehensive ocular assessment, and structured protocols for effective management.

Keywords: Ocular Tuberculosis

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53. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Vivian Cristina Costa Afonso - PG0
e-mail: vivian_cris@yahoo.com.br

Advisor: Cristina Muccioli

CAAE or SEI: 67100823.9.0000.0088

5. ABSTRACT (REQUIRED):

Title: Ocular toxoplasmosis reactivation after ophthalmologic surgery: A clinical study comparing prophylaxis versus non-prophylaxis.

Author and Co-authors: Afonso V,Dib E, Finamor L, Furman AB, Muccioli C

Purpose: Ocular toxoplasmosis is a common cause of posterior uveitis. Complications of this ocular disease include cataract, retinal detachment, epiretinal membrane, and other ocular issues. In certain cases, these complications may require surgical intervention. Patients with history of ocular toxoplasmosis may also undergo surgical procedures for unrelated conditions, such as cataract surgery or other retinal diseases. Reactivation of ocular toxoplasmosis during the early postoperative period can severely affect visual acuity. This study aims to determine whether prophylactic treatment after surgery protects patients against the reactivation of ocular toxoplasmosis.

Methods: A prospective study was conducted at the Hospital Oftalmológico de Sorocaba between 2022 and 2025 with 45 patients (51 eyes) diagnosed with inactive ocular toxoplasmosis for over 6 months (confirmed by positive serology and scar of ocular retinochoroiditis). Participants were randomized into two groups: one received prophylaxis with sulfamethoxazole and trimethoprim (one capsule, three times per week), while the control group received no prophylactic treatment. Both groups were monitored for 60 days.

Results: Forty-five patients were randomized into two groups: the control group (22 patients, 25 eyes) and the prophylaxis group (23 patients, 26 eyes). At the primary end point, the control group showed a higher prevalence (9 cases) compared to the prophylaxis group (2 cases). The chi-square test indicates that the difference in recurrence rates between groups is statistically significant ($p = 0.0343$), suggesting that prophylaxis was effective. Additionally, uveitis relapse occurred early in the prophylactic group (5.5 days) compared with the control group with no prophylaxis (27.0 days), with a statistically significant difference ($p = 0.0026$, Student t-test).

Conclusion: The risk of ocular toxoplasmosis reactivation after surgery remains unclear. Heringer et al. found that reactivation following intraocular procedures is uncommon, but it may lead to blindness. In contrast, Bosh-Driessen et al. reported a 36% recurrence rate within four months after cataract surgery. This study suggests that prophylaxis may be effective in reducing recurrent ocular toxoplasmosis in ocular surgical patients.

Keywords: Ocular Toxoplasmosis

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54. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Guilherme Macedo Souza - PG0
e-mail: gmacedo4@gmail.com

Advisor: Rubens Belfort Jr.

CAAE or SEI: 83523924.1.0000.5505

5. ABSTRACT (REQUIRED):

Title: Ophthalmological Structural Assessment in Adults Residing in the Municipality of Barcelos, Brazilian Amazon Region

Author and Co-authors: Paula Marinho, Diego Casagrande, Marcos Cohen, José Levi Cavalcante, Ariane Luttecke, Kevin Waquim, Flávio Carvalho, Mauro Gobira, Elton Morais, Ivan Maynart, Solange Salomão, Adriana Berezovsky e Barcelos Ocular Research Project (BORP)

Purpose: To obtain structural ocular measurements of the retina, optic nerve, and anterior chamber angle, and correlate these measurements with the ophthalmological clinical condition. To determine the frequency of ocular diseases in the city of Barcelos, AM.

Methods: Cross-sectional prospective study, based on the evaluation of structural parameters of the anterior and posterior segments of the eye, in a large-scale sample of inhabitants from the Amazon region. The following exams will be performed: visual acuity, biometry, tonometry, wide-angle posterior pole retinography, optical coherence tomography (OCT) of the retina and optic nerve, in addition to measurements related to the anterior chamber angle and cornea. The selected patients, or their respective legal guardians, must agree to participate in the study and sign a free and informed consent form, previously approved by the ethics and research committee of EPM/UNIFESP.

Results: in progress

Conclusion: in progress

Keywords: Public Health, Blindness, Eye diseases

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55. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Giovanna Provenzano Sá - PG1
e-mail: giovanna.provenzano@unifesp.br

Advisor: Miguel Noel Burnier Jr.

CAAE or SEI: 8.2023 - McGill

5. ABSTRACT (REQUIRED):

Title: The value of diagnostic vitrectomy: Histocytopathology techniques for the diagnosis of lymphoma of the retina

Author and Co-authors: Giovanna Provenzano, Julia Valdemarin Burnier, Sabrina Bergeron, Emma Youhnovska,
Emily Marcotte, John Chen, Vincent Sun, Miguel Noel Burnier Jr

Purpose: Primary large B?cell lymphoma of the retina, vitreous, and central nervous system (CNS), is an intraocular tumor with an unspecific and insidious clinical presentation. Pars plana vitrectomy (PPV) and optical coherence tomography (OCT) are useful diagnostic tools for this malignant process. The aim of this study is to evaluate the diagnostic efficacy of PPV for these intraocular lesions under a modified diagnostic protocol with a clinical pathological correlation with OCT imaging.

Methods: A total of 115 samples were collected after a vitrectomy procedure (aspiration or vitrectomy cassette). The samples were centrifuged, and the precipitates were collected. A cell block was prepared and analyzed with multiple stains and an immunohistochemistry (IHC) panel, including B? and T?cell markers, as well as light chain markers, to establish the monoclonal nature of the tumor. Of the 115 samples, 9 (7.83%) were diagnosed with large B?cell lymphoma of the retina, vitreous, and CNS.

Results: The diagnostic PPV provided suitable vitreous samples to all patients with undetermined uveitis and/or intraocular tumor suspicion. A morphological and immunohistichemical (IHC) analysis enabled a conclusive diagnosis of retina, vitreous and CNS lymphoma in all patients submitted to the procedure.

Conclusion: Diagnostic vitrectomies for the large B?cell lymphoma of the retina, vitreous, and CNS is an
excellent tool for the diagnosis of this entity. A negative diagnostic PPV with a strong suspicious OCT image, where the neoplastic cells are located between the retinal pigmented epithelium and Bruch?s membrane, the latter procedure should be either repeated or a chorioretinal biopsy be performed. In contrast, a positive vitrectomy using the IHC panel for large B?cell lymphoma of the retina, vitreous, and CNS is pathognomonic of this condition. In addition, the OCT is an important tool to help in the diagnosis of this difficult entity.

Keywords: Immunohistochemistry, lymphoma, retina, vitrectomy

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

Name: Emiliana dos Santos Valadares - PG0
e-mail: draemilianavaladares@gmail.com

Advisor: Cristina Muccioli

CAAE or SEI: 50133721.8.1001.5505

5. ABSTRACT (REQUIRED):

Title: National Epidemiological Study of Ocular Toxoplasmosis in Brazil

Author and Co-authors: Emiliana Valadares, Solange Rios Salomão, Cristina Muccioli

Purpose: Ocular toxoplasmosis (OT) is a leading cause of posterior uveitis and preventable visual loss in Brazil, yet national data are scarce. This study aimed to describe the epidemiologic, clinical, diagnostic, and therapeutic profiles of OT across Brazilian regions to identify geographical variations and guide future public health strategies.

Methods: A retrospective, descriptive, multicenter chart review was conducted in 11 uveitis reference centers across Brazilian regions. Consecutive cases with an initial diagnosis of active OT within the previous five years were included. Data were extracted through a standardized electronic case-report form covering demographic, environmental, clinical, laboratory, and therapeutic variables. Statistical analysis included descriptive and multivariate modeling using multiple linear regression to explore associations between regional, clinical, and visual outcome parameters.

Results: Sample of 219 patients. Regions: Southeast 58.4 percent, Central-West 22,8 percent, North 17,4 percent(South 1 case; Northeast no cases). Mean age was around 39 years, majority female and living in urban areas. Contact with cats and consumption of undercooked meat were reported by 61 percent and 48 percent, respectively. Bilateral involvement occurred in 22 percent of cases. Typical necrotizing retinochoroiditis represented 76 percent of lesions, while some atypical forms such as vasculitis or macular edema. Mean visual acuity at presentation was 20/160, improving after treatment, significant value. Classic triple therapy was prescribed in 62 percent and trimethoprim-sulfamethoxazole in 35 percent. Systemic corticosteroids were associated in 78 percent, initiated after antiparasitic therapy in majority of the cases. Recurrence in 28 percent of patients. Regional differences were statistically significant for exposure patterns and therapeutic approaches suggested environmental and socioeconomic influences.

Conclusion: This is the first national, multicenter epidemiologic assessment of ocular toxoplasmosis in Brazil. The results demonstrate marked regional heterogeneity in exposure, presentation, and management, highlighting the need for region-sensitive prevention, diagnosis, and treatment protocols to reduce visual morbidity and public health burden.

Keywords: ocular toxoplasmosis, epidemiology, uveitis, public health, visual outcomes

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57. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Diogo Gonçalves Dos Santos Martins - PG0
e-mail: dgs_martins@hotmail.com

Advisor: Paulo Schor

CAAE or SEI: 77387924.3.0000.5250

5. ABSTRACT (REQUIRED):

Title: Retinal Changes as Biomarkers of Microvascular Disease in Post-Stroke and Post-MI Patients

Author and Co-authors: Diogo Gonçalves dos Santos Martins; Thiago Gonçalves dos Santos Martins; Luís Mendes; Inês Pereira Marques; Ana Rita Marques; Paulo Schor

Purpose: Compare structural retinal changes between post-Stroke (CVA) patients and post-Acute Myocardial Infarction (AMI) patients, to investigate potential non-invasive biomarkers for different phenotypes of systemic microvascular disease.

Methods: Comparative study that analyzed retinal parameters using Optical Coherence Tomography (OCT) in two groups of patients: post-stroke (n=43) and post-myocardial infarction (n=51). The thickness of the Retinal Nerve Fiber Layer (RNFL), the Ganglion Cell Layer (GCL), total retinal thickness and volume, the optic disc topography, and the presence of Retinal Perivascular Ischemic Lesions (RIPL) were evaluated.

Results: Patients with stroke were significantly older (67.4 vs. 62.8 years; p=0.04). A significant reduction in GCL was observed in the stroke group compared to the MI group (Total GCL: 56.3 µm vs. 59.9 µm; p=0.01). RNFL tended to be thinner in the stroke group (Total RNFL: 34.4 µm vs. 37.0 µm; p=0.07). The prevalence of RIPL was higher in the stroke group (34% vs. 20%), although not statistically significant (p=0.15). There were no significant differences in optic disc parameters.

Conclusion: Stroke is associated with greater retinal neurodegeneration, evidenced by a significant reduction in the GCL, compared to myocardial infarction. These findings suggest that specific retinal changes, assessed by OCT, may reflect distinct pathophysiological mechanisms of cerebrovascular and cardiovascular diseases, positioning the retina as a potential "mirror" of cerebral microvascular health.

Keywords: Retinal Biomarkers; Stroke; Myocardial Infarction; OCT; Neurodegeneration; Microvascular.

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58. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Henrique Lage Ferreira Ferrer - R3
e-mail: henrique.ferrer@unifesp.br

CAAE or SEI: 90645125.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Ophthalmologic Assessment and Clinical Findings in the Evaluation of Patients Undergoing Cataract Surgery in an Academic Training Center

Author and Co-authors: Henrique Ferrer, Ugor Fernandes

Purpose: To analyze the ophthalmologic examination findings and preoperative ocular characteristics of patients who underwent phacoemulsification performed by ophthalmology residents in an academic surgical unit, as part of a broader project investigating the demographic profile and surgical performance of cataract cases at a university hospital.

Methods: This is a cross-sectional, observational study including approximately 2,000 patients who underwent phacoemulsification with intraocular lens implantation at the Cataract Surgery Unit of the Universidade Federal de São Paulo (UNIFESP) between March 2024 and March 2025. Data are collected from electronic medical records following ethical approval and informed consent from both patients and resident surgeons. The pre- and postoperative ophthalmologic examination includes best-corrected visual acuity, refraction, slit-lamp biomicroscopy of the anterior segment, intraocular pressure measurement using Goldmann tonometry, retinal mapping, and ocular biometry. Additional evaluations, such as fundus examination and postoperative visual outcomes, are documented to correlate clinical parameters with surgical performance.

Results: Data collection and descriptive analysis are ongoing. Preliminary review indicates heterogeneous ocular findings consistent with the population typically treated at a teaching hospital, including varying lens opacities, refractive profiles, and comorbid ocular conditions. Detailed statistical assessment will compare pre- and postoperative examination parameters according to the resident?s level of training and intraoperative complication rates.

Conclusion: The inclusion of systematic ophthalmologic data aims to complement the epidemiological and surgical performance analysis led by Fernandes et al., providing a more comprehensive understanding of patient characteristics and visual outcomes in cataract procedures performed by resident surgeons. Integration of clinical examination data with demographic and procedural metrics will contribute to improving both patient care and surgical training curricula in ophthalmology.

Keywords: cataract surgery. ophthalmologic examination. phacoemulsification. residency training. visual outcomes.

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59. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Pedro De Faria Gusmao - R4
e-mail: pedrofgusmao@hotmail.com

CAAE or SEI: 99999999.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: Randomized double-masked trial: single 4 mg sub-Tenon triamcinolone vs topical prednisolone 1% after uncomplicated cataract surgery.

Author and Co-authors: Pedro de Faria Gusmão; Richard Hida; Flavio Eduardo Hirai; Walton Nosé ? Department of Ophthalmology and Visual Sciences, Escola Paulista de Medicina/UNIFESP, São Paulo, Brazil.

Purpose: To compare the anti-inflammatory efficacy and safety of a single sub-Tenon triamcinolone acetonide 4 mg injection versus standard topical prednisolone acetate 1% following uneventful phacoemulsification with IOL implantation.

Methods: Prospective, randomized, double-masked trial at Hospital São Paulo (2025?2026), 80 adults undergoing standardized phaco with foldable IOL; study arm receives sub-Tenon triamcinolone acetonide 4 mg/0.4 mL; control arm receives tapering prednisolone acetate 1% drops; both receive topical moxifloxacin; masked examiner follow-up on POD 1, 7, 30, 60, 90; primary outcomes: anterior chamber inflammation by SUN grading, intraocular pressure by Goldmann, and macular status with OCT; secondary: ocular surface inflammation, pain, infection; statistical tests: t test/chi-square with significance at p

Results: Trial ongoing; expected non-inferiority for postoperative inflammation control and cystoid macular edema incidence, with similar rates of intraocular pressure spikes between groups

Conclusion: A single 4 mg sub-Tenon triamcinolone strategy may offer drop-sparing postoperative control with non-inferior efficacy and a manageable steroid-response risk; definitive conclusions await completion of data collection and analysis.

Keywords: cataract surgery; sub-Tenon triamcinolone; prednisolone acetate; postoperative inflammation; cystoid macular edema; intraocular pressure; randomized clinical trial.

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60. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Ugor Tomaz Fernandes - R4
e-mail: ugortf@hotmail.com

CAAE or SEI: 90645125.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Patient profile and surgical results evaluation of cataract surgery in a Teaching Hospital

Author and Co-authors: Ugor Tomaz Fernandes
Henrique Lage Ferreira Ferrer
Flávio Eduardo Hirai
Richard Yudi Hida

Purpose: To analyze the learning curve of phacoemulsification performed by residents in the Universidade Federal de São Paulo (UNIFESP) by the intraoperative complications rates in one year.

Methods: This transversal and observational study aims to analyze all cases of phacoemulsification performed by residents at UNIFESP, São Paulo, between March 2024 and March 2025. The cases will be stratified according to the degree of formation of the residents (first year resident, second year resident, third year resident and fourth year resident) and the surgical performance will be evaluated by the intraoperative complications rate. The data of intraoperative complications will be retrieved from the medical records. All procedures that involved other intervention than phacoemulsification or that was classified preoperatively as a complex case will be excluded. The statistical analysis will be done with the STATA software (STATA, version 13; StataCorp LP, College Station, TX) and it will evaluate the complication rate according to the degree of the residents along the year.

Results: The study will be initiated after the ethical committee approval and we expect that the intraoperative complications rate decrease along the year.

Conclusion: Probably there will be a decrease in the intraoperative complications rate in each group of residents, showing the learning curve of phacoemulsification surgery. Also, knowing the global complications rate of this procedure in this health service will help to better organize its assistance to the patients.

Keywords: Cataract surgery; phacoemulsification; complications rate; learning curve

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61. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Ítala De Moraes Vieira Gatti - PG1
e-mail: itala.gatti@unifesp.br

Advisor: Denise de Freitas

CAAE or SEI: 86352625.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Epidemiological and sociodemographic aspects of Acanthamoeba keratitis in contact lens wearers treated at a tertiary hospital in São Paulo

Author and Co-authors: Ítala M. V. Gatti, Luciana L. Rocha, Larissa P. Fagundes, Laura Caldas, Luiz Antônio Vieira, Denise de Freitas.

Purpose: To evaluate the epidemiological and sociodemographic profile of contact lens wearers affected by Acanthamoeba keratitis (AK) at a tertiary hospital in the state of São Paulo.

Methods: A prospective study was conducted using a structured questionnaire that addressed epidemiological and sociodemographic aspects. The study included 224 contact lens wearers diagnosed with AK from the External Eye Diseases and Cornea Department of the São Paulo School of Medicine, São Paulo Hospital, Federal University of São Paulo (UNIFESP). The diagnosis was confirmed by at least one of the following methods: microbiological culture, polymerase chain reaction (PCR), and/or in vivo cornea confocal microscopy.

Results: Of the patients assessed, 127 (57%) were female and 97 (43%) male, with an average age of 35.5 years. Most participants133 (59%) reported earning less than four times the minimum wage per month.
Regarding educational level, 109 (49%) had completed higher education, 87 (39%) had completed secondary education, 13 (6%) had completed primary education, and 15 (7%) had completed postgraduate studies. It was observed that 70 (32%) of cases of AK began in the summer and 68 (30%) in the fall.
Regarding contact lens use, 168 (75%) used soft lenses, 27(12%) scleral lenses, 21(9%) rigid gas-permeable lenses, and 8 (4%) colored soft lenses for cosmetic purposes. One case was linked to orthokeratology lens use.
More than 90% of patients lived in urban areas, in homes with piped water and water tanks.
Regarding lifestyle habits, 61% (136) of participants reported not consuming alcoholic beverages, 35% (79) said they drank up to three times a week, and 4%(9) drank more than three times a week. 89%(200) of participants reported not smoking; 3% (7) smoked up to three times a week, 4%(9) smoked four to six times a week, and 4%(8) smoked daily. Marijuana use was reported by 2%(4) of individuals, all at a frequency of one to three times a week.

Conclusion: It is important to implement preventive measures aimed at young adults. The higher incidence observed in females possibly reflects the predominance of this group among contact lens users, a hypothesis that warrants further investigation. It was also observed that lower income may represent an indirect risk factor, possibly by limiting access to adequate lens cleaning and maintenance solutions. In addition, the predominance of individuals with secondary or higher education suggests that behavioral factors, such as relaxation of hygiene measures during chronic use, may contribute to infection. These results highlight the need for continuous reinforcement of guidelines on contact lens handling and hygiene, especially during ophthalmological follow-up appointments.

Keywords: Acanthamoeba, contact lenses, infectious keratitis

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62. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Roberta Matschinske Van Den Berg - PG1
e-mail: betamats@hotmail.com

Advisor: Denise de Freitas

CAAE or SEI: Pro00119621 - MUSC

5. ABSTRACT (REQUIRED):

Title: Predicted Visual Impact of a Small Aperture Intraocular Lens in Reducing Higher Order Aberrations in Post-Radial Keratotomy Patients

Author and Co-authors: Roberta M. van den Berg, Sarah DeVaro, Karolinne Maia Rocha, Marcela Fetrin de Barros,
Stephen D. Klyce, Denise de Freitas

Purpose: The purpose of this study is to evaluate the potential impact of small aperture optics on corneal aberrations in post-RK patients.

Methods: Preoperative data was evaluated from 32 eyes of 23 post-RK patients. Scheimpflug tomography was used to obtain measurements of corneal HOAs at 6-mm, 4-mm, and 2-mm corneal plane aperture diameters. The data was extrapolated using a non-linear fit to estimate HOAs that would be obtained with the 1.6 mm effective pinhole IOL aperture at the corneal plane for individual patients.

Results: The average RMS HOAs estimated for the 1.6 mm aperture was 0.063 ± 0.015 ?m compared to 0.185 ± 0.029 ?m for the natural pupil size. A postoperative RK case with an IC-8® Apthera? unilateral implantation demonstrated a 70% reduction in HOAs by objective measurement and prediction, plus a 2-line improvement in CDVA.

Conclusion: Prediction modeling revealed that HOAs may be reduced in post-RK patients following pinhole IOL im-plantation, compared to the natural photopic pupil size. Furthermore, the approach can be used to guide which post-RK patients would benefit from a small aperture IOL during cataract surgery.

Keywords: post-RK; higher-order aberrations; pinhole effect

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63. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Ludmilla Nascimento Silva - PG1
e-mail: ludmila.nascimento@unifesp.br

Advisor: Luciene Barbosa

CAAE or SEI: 59847622.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Evaluation of Keratoconus Progression After Oral Riboflavin Supplementation Combined With Violet Light Exposure (KeraVio): A Pilot Study**

Author and Co-authors: Ludmila Nascimento, Kazuo Tsubota, Luciene Barbosa de Sousa, Richard Hida, Flávio Hirai,

Purpose: To determine whether patients with keratoconus will maintain keratometric stability six months after undergoing a 30-day protocol consisting of oral riboflavin supplementation combined with the use of violet light?emitting glasses (KeraVio). Secondary objectives include evaluating the safety of the KeraVio protocol by monitoring adverse events related to both interventions during clinical follow-up.

Methods: This is a randomized clinical trial conducted at the Federal University of São Paulo (UNIFESP) designed to evaluate the efficacy and safety of the KeraVio protocol in patients with keratoconus. Eligible participants (ages 8?20) with tomographically confirmed, nonprogressive keratoconus will be randomized into two groups (n = 18 per group): intervention (oral riboflavin 400 mg/day plus violet light?emitting glasses, TLG-003, for 30 days) and control (no treatment). All participants will undergo a comprehensive ophthalmic examination and complementary tests, including corneal tomography (Pentacam) with lens densitometry, epithelial mapping, and macular evaluation by OCT, and specular microscopy at baseline and at D30, D90, D120, and D180. Blood samples for serum riboflavin quantification will be collected at D0 and D30. The primary endpoint will be keratometric stability (?Kmax ? 1.0 D) between groups. Safety will be assessed through adverse event monitoring and clinical examination. Statistical analyses will be performed using Stata v.17, with p

Results: Data collection is currently in progress.

Conclusion: Data collection is currently in progress.

Keywords: keratoconus; oral riboflavin; violet light

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(LV) LOW VISION
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(TR) TRAUMA
(TU) TUMORS AND PATHOLOGY
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Deadline: 10/2025

FORMAT:
Abstract should contain:
Title
Author
Co-authors (maximum 6)
Purpose
Methods
Results,
Conclusion
Keywords

Poster guidelines:
90cm x 120cm

64. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Bruno Lucas Andrade - R1
e-mail: brunolucasandrade@hotmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Dematiaceous Fungal Keratitis Caused by Fonsecaea spp.: A Case Report

Author and Co-authors: Author: Bruno Lucas Andrade
Co-author: Cindy Lie Tabuse

Purpose: To report a rare case of dematiaceous fungal keratitis caused by Fonsecaea spp., emphasizing the diagnostic relevance of blackish corneal pigmentation and the role of confocal microscopy in early recognition

Methods: Retrospective review of patient?s medical records, microbiological results, and clinical evolution.

Results: A 41-year-old male construction worker from São Paulo with progressive visual loss and ocular pain in the right eye 45 days after corneal foreign-body removal. Initial treatments with topical moxifloxacin and oral acyclovir were ineffective. At presentation, slit-lamp examination revealed a central corneal ulcer with feathery borders, stromal thinning, and distinctive blackish pigmentation, suggestive of dematiaceous fungal infection. Best-corrected visual acuity was hand motion OD and 20/20 OS. In vivo confocal microscopy showed branching hyphae consistent with filamentous keratitis. Corneal scraping and cytology demonstrated numerous filamentous septate fungi. Fungal culture confirmed Fonsecaea spp.; bacterial and Acanthamoeba cultures were negative. Initial management included topical amphotericin B 0,15% hourly, oral ketoconazole 200mg twice daily, and cyanoacrylate glue with a therapeutic contact lens. Despite transient improvement, clinical worsening occurred with hypopyon formation, requiring intrastromal amphotericin B injection and addition of topical voriconazole 1% every 3h. Due to persistent corneal melting, an emergency penetrating keratoplasty was performed. Postoperatively, the graft remained transparent, and vision improved to counting fingers after 30 days.

Conclusion: Fonsecaea spp. is an uncommon yet vision-threatening cause of fungal keratitis. Recognition of dark corneal pigmentation is crucial for clinical suspicion of dematiaceous infection. Confocal microscopy and microbiological confirmation are essential for diagnosis, and timely escalation from medical to surgical management is key to preserving ocular integrity and visual function.

Keywords: fungal keratitis, Fonsecaea, dematiaceous fungi, corneal ulcer, penetrating keratoplasty

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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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Results,
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Keywords

Poster guidelines:
90cm x 120cm

65. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Pedro Fukui Umeta - R2
e-mail: pfukuiumeta3@gmail.com

CAAE or SEI: 91925325.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: Case Series: Clinical and Tomographic Findings in Unilateral Keratoconus

Author and Co-authors: Pedro Fukui Umeta, Flavio Hirai

Purpose: Primary Objective: To describe the clinical and tomographic profile of patients with highly asymmetric keratoconus ("unilateral keratoconus") treated at our service, characterizing the differences between the more affected and less affected eye.

Secondary Objectives:
-To evaluate epidemiological data (sex and age) of patients with highly asymmetric keratoconus.
-To identify ocular (contact lens use, eye rubbing) and systemic (history of atopy) risk factors associated with these cases.
-To describe the tomographic parameters (corneal curvature, elevation, pachymetry) of both eyes in patients with highly asymmetric keratoconus.
-To describe the tomographic parameters using the Belin-Ambrosio Display map for both eyes in patients with highly asymmetric keratoconus.

Methods: Study Design: This is a descriptive case series with a retrospective data collection.
Data Collection: We will analyze medical records and corneal tomography scans (Pentacam) of patients diagnosed with keratoconus who were seen at the Department of Ophthalmology at Escola Paulista de Medicina (UNIFESP) in 2024, and who meet the inclusion criteria for highly asymmetric keratoconus. Once a patient meets the eligibility criteria, data will be collected, including: sex, age, comorbidities, history of atopy and eye rubbing, contact lens use, indication and type of treatment performed, visual acuity, and detailed tomographic parameters of both eyes. The data will be kept confidential and will only be accessed by the researchers involved in the study. The Free and Informed Consent Form will be applied to eligible participant. The study will be submitted to and approved by the UNIFESP Research Ethics Committee (CEP) before data collection.
Inclusion Criteria: Patients with a keratoconus diagnosis but with significant asymmetry, defined by a final "D" value [Belin/Ambrosio Enhanced Ectasia Display (BAD)] of 5.0 or greater in the affected eye and 1.4 or less in the normal eye.
Exclusion Criteria: Patients with a history of prior refractive surgery or other corneal diseases that may mask the diagnosis of keratoconus.

Results: In progress

Conclusion: In progress

Keywords: Keratoconus, Unilateral keratoconus, Pentacam

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Poster guidelines:
90cm x 120cm

66. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Rafael Silveira Feitosa - R2
e-mail: rafaelsilveira200199@gmail.com

CAAE or SEI: 53829321.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Clinical, microbiological and therapeutic profile of fungal keratitis in a Brazilian referral center (2018?2024): preliminary results

Author and Co-authors: Rafael Silveira Feitosa, Aileen Miwa Tabuse, Ana Luisa Hofling de Lima Farah

Purpose: To present preliminary data on the clinical, microbiological, and therapeutic profile of fungal keratitis in a Brazilian referral center, providing a descriptive overview compared with a previous historical series (2012?2017).

Methods: This is an ongoing retrospective, observational, descriptive study including patients diagnosed with fungal keratitis between January 2018 and December 2024 at the Cornea Service of UNIFESP. At this stage, a descriptive analysis of clinical, microbiological, therapeutic features and visual outcomes was performed. Further statistical analyses are currently in progress

Results: Seventy-two cases were included, predominantly male (72.2%) and aged 40?65 years (63.9%). Ocular trauma was the main predisposing factor (58.3%). Fusarium was the leading isolate (45.8%), followed by Candida spp. (9.7%) and Curvularia spp. (5.6%). Most ulcers were central (80.6%), deep stromal (68.1%), with hypopyon in 40.3%. Therapeutic keratoplasty was required in 26.4%, with recurrence in 9.7%. Adjunctive procedures included intracameral amphotericin B (37.5%) and intrastromal amphotericin B (33.3%). Final visual acuity was 20/40.

Conclusion: This is an ongoing study. Preliminary descriptive results indicate that fungal keratitis remains a severe condition with poor visual prognosis, predominantly caused by Fusarium and often requiring surgical intervention. Ongoing statistical analyses will further clarify prognostic and therapeutic implications.

Keywords: Fungal keratitis; Fusarium; Candida; Antifungal therapy; Therapeutic keratoplasty

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Keywords

Poster guidelines:
90cm x 120cm

67. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Carolina Rodrigues Cunha Guimaraes Drumond - R3
e-mail: crcg.dru@gmail.com

CAAE or SEI: 81670824.1.0000.5505

5. ABSTRACT (REQUIRED):

Title: The use of plasma in the treatment of dry eye in Meibomian gland dysfunction

Author and Co-authors: Carolina Rodrigues Cunha Guimarães Drumond, MD; Chiara Luana Reinert da Silva, MD; Vanessa Favero Demeda, MD; José Álvaro Pereira Gomes, MD, PhD

Purpose: The purpose of the present study is to compare the efficicacy between MiBo Thermoflo and Jett plasma in tarsal conjunctiva and lid margin in the treatment of dry eye associated with meibomian gland dysfunction.

Methods: The study was conducted at the Department of Ophthalmology of the São Paulo School of Medicine and enrolled 13 patients diagnosed with moderate to severe dry eye disease, all of whom had previously undergone conventional therapeutic approaches. The Jett Plasma treatment was administered in four sessions over a 28-day period, targeting the conjunctiva and eyelid margins with the aim of enhancing meibomian gland function. Clinical outcomes were assessed using the Ocular Surface Disease Index (OSDI), non-invasive tear break-up time (NIBUT), conjunctival hyperemia, tear meniscus height, and corneal fluorescein staining, with evaluations performed at baseline and one month following the final treatment session.

Results: A statistically significant reduction in OSDI scores was observed (mean decrease of 22.49 points; p

Conclusion: Despite a lot of treatments for Meibomian gland dysfunction exists, there isn?t a definitive and effective treatment. Plasma procedures, such as Jett Plasma, are being used in dermatological and small surgeries, and have potential for improving meibomian gland flow and MGD treatment. More studies are necessary to compare current treatment options with Jett Plasma technology.

Keywords: Meibomian Gland disfunction; Cornea

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Poster guidelines:
90cm x 120cm

68. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Beatriz Cavalcante Moita - R4
e-mail: beatrizcavalcantem95@gmail.com

CAAE or SEI: 59843422.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Association between keratitis caused by Acanthamoeba and dacryoadenitis

Author and Co-authors: Beatriz Cavalcante, Denise de Freitas, Ítala Gatti, Luiz Antonio Vieira, Livia de Moura

Purpose: To determine the incidence of dacryoadenitis in patients affected by keratitis caused by Acanthamoeba

Methods: Thirty patients treated at the Outpatient Clinic for External Eye Diseases and Cornea at Escola Paulista de Medicina ? Hospital São Paulo (UNIFESP) will be included, with a confirmed diagnosis of keratitis caused by Acanthamoeba, as determined by confocal microscopy, culture, or PCR. All patients will undergo ocular Doppler ultrasound examination on the first day of evaluation and after clinical resolution of the infection. Those who present ptosis or other clinical signs suggestive of active dacryoadenitis will undergo additional ultrasound examination during follow-up. Inclusion criteria: all new cases of keratitis caused by Acanthamoeba.
Criteria for cure: absence of signs and symptoms, including eye pain, excessive tearing, ptosis, and marked conjunctival hyperemia.
Exclusion criteria: patients with corneal coinfection or autoimmune diseases that may affect the lacrimal gland, such as Sjögren's syndrome

Results: To be described according to the study findings

Conclusion: To be drafted after analysis of the results

Keywords: Keratitis, Acanthamoeba, dacryoadenitis

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Poster guidelines:
90cm x 120cm

69. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Livia Sandis Barbosa - R4
e-mail: liviasandis.b@hotmail.com

CAAE or SEI: 00000000.0.0000.0000

5. ABSTRACT (REQUIRED):

Title: Clinical Evaluation of the Effect of Tacrolimus Eye Drops on Corneal Wound Healing in Patients Undergoing High-Risk Corneal Transplantation

Author and Co-authors: Livia Sandis; Luciene Barbosa de Sousa

Purpose: Evaluate the effect of tacrolimus eye drops on corneal wound healing

Methods: A longitudinal, prospective, interventional study will be conducted with 30 patients undergoing elective high-risk corneal transplantation at Hospital São Paulo. Eligible participants (over 18 years old, both sexes) include those with a history of retransplantation, anterior synechiae, previous glaucoma, or corneal neovascularization affecting more than two quadrants.
After transplantation, the donor cornea will be de-epithelialized, and patients will be randomly assigned to one of two groups: one receiving 0.1% tacrolimus eye drops and the other receiving the vehicle solution. Both groups will receive standard postoperative medications, including topical antibiotic and 1% prednisolone acetate, without therapeutic contact lens use.
Follow-up examinations will occur on postoperative days 1, 3, 7, and 10, assessing corneal healing through slit-lamp biomicroscopy, standardized photography, and fluorescein staining. The de-epithelialized area will be quantified using ImageJ software to ensure accuracy.
Data analysis will compare the total epithelial closure time between the two groups.

Results: To be described according to the study findings

Conclusion: To de drafted after analysis of the results

Keywords: Tacrolimus; Corneal transplantation; Corneal wound healing; Epithelialization

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Keywords

Poster guidelines:
90cm x 120cm

70. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Lívia Moura Alvares - R4
e-mail: liviamouraalvares@gmail.com

CAAE or SEI: 59843422.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Evaluation of the efficacy of using polyhexamethylene biguanide 0.02% intra- stromal corneally in individuals with Acanthamoeba keratitis unresponsive to conventional topical treatment

Author and Co-authors: Lívia de Moura Alvares
Co-authors: Prof. Dra Denise de Freitas, Dra Ítala de Moraes Vieira Gatti, Prof. Dr Luiz Antônio Vieira

Purpose: The purpose is to evaluate the efficacy of intrastromal corneal injection of 0.02% polyhexamethylene biguanide (PHMB) in individuals with Acanthamoeba keratitis who show poor response to conventional topical therapy, as well as to assess the potential adverse effects associated with intrastromal corneal administration of 0.02% PHMB.

Methods: This prospective interventional study will include 20 patients diagnosed with Acanthamoeba keratitis unresponsive to conventional topical therapy with chlorhexidine digluconate and polyhexamethylene biguanide. Participants will be recruited from the Ocular Surface and Cornea Diseases Sector of the Federal University of São Paulo (UNIFESP). Diagnosis will be confirmed by culture and/or in vivo confocal microscopy, and cases with active coinfection will be excluded. After obtaining informed consent, patients will receive intrastromal corneal injections of 0.02% PHMB under slit-lamp visualization using an insulin syringe. The injection will target the clear corneal area adjacent to the lesion. Injection depth will be verified by corneal OCT. The procedure will be repeated weekly for three consecutive weeks, with follow-up visits over five weeks. Clinical improvement will be defined as pain reduction and/or regression of slit-lamp findings such as limbitis, corneal infiltrate, or edema. Worsening will be indicated by progression of these signs or new corneal/scleral thinning. Additionally, a five-year retrospective chart review will identify previous cases of Acanthamoeba keratitis treated with intrastromal biguanide, allowing comparison of treatment protocols and outcomes.

Results: The results will be presented according to the findings of the study.

Conclusion: The conclusion will be formulated after analysis of the results.

Keywords: 1. Acanthamoeba 2. Keratitis 3. Polyhexamethylene Biguanide

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Poster guidelines:
90cm x 120cm

71. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Rafael Martins Queiroz Barbosa - R4
e-mail: rafaelmqbarbosa@gmail.com

CAAE or SEI: 11111111.1.1111.1111

5. ABSTRACT (REQUIRED):

Title: Agreement Study Comparing Maximum Corneal Curvature (Kmax) Values Obtained by Pentacam HR and Anterion (SS-OCT) in Patients with Advanced Keratoconus

Author and Co-authors: Rafael Martins Queiroz Barbosa, Marcelo Brancalhão Tojar

Purpose: To evaluate the agreement between maximum corneal curvature (Kmax) values obtained by Pentacam HR (Scheimpflug technology) and Anterion (swept-source OCT) imaging systems in patients with normal corneas and keratoconus. This prospective, observational, cross-sectional clinical study aims to determine whether these two widely used corneal tomography devices can be used interchangeably in clinical practice for diagnosing and monitoring corneal ectasias.

Methods: Sixty participants (120 eyes) will be enrolled and divided equally into two groups: normal corneas (n=30) and keratoconus at different stages (n=30). All participants will undergo examinations with both devices on the same day by experienced, masked operators. Three consecutive measurements will be obtained with each device following standardized protocols. The examination order will be randomized, with a 15-minute stabilization period between devices. Statistical analysis will include intraclass correlation coefficient (ICC), Bland-Altman analysis, paired t-test, and linear regression analysis.

Results: This section should be completed after data collection and analysis. Since this is a study protocol, results are not yet available. Expected outcomes include: ICC values for agreement between devices, 95% limits of agreement, mean difference between measurements, systematic bias assessment, and intra- and inter-observer reproducibility for each device

Conclusion: This section should be completed after completing the study. The conclusion should address whether: (1) adequate agreement exists between Pentacam HR and Anterion for Kmax measurements, (2) the devices can be used interchangeably in clinical practice, (3) correction factors are needed, and (4) any differences are within clinically acceptable limits (?1.0 D). Expected impact includes providing robust scientific data on device interchangeability, contributing to evidence-based clinical decision-making, and standardizing diagnostic protocols for corneal ectasias

Keywords: Keratoconus, Corneal topography, Pentacam HR, Anterion, Swept-source OCT, Scheimpflug imaging, Maximum corneal curvature, Kmax, Agreement study, Bland-Altman analysis, Corneal tomography, Ectasia

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(EP) EPIDEMIOLOGY

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72. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Sylvia Maria Affonso Da Silva - PG0
e-mail: sylvia.maria@unifesp.br

Advisor: Paulo Schor

CAAE or SEI: 89550025.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Social and Ethical Innovation in Brazilian Biomes: Cooperative Models for Sustainable Development and Social Mobility

Author and Co-authors: Sylvia Maria Affonso da Silva, Paulo Schor, Gabriella Marques, Ana Maria Diniz

Purpose: This research investigates how social and ethical innovation can contribute to social mobility and the reduction of inequalities in vulnerable municipalities within Brazilian biomes. It seeks to understand how cooperative models and participatory methodologies can be used to promote inclusive, sustainable, and context-based development. Moving beyond a narrow technological focus, the project considers innovation as a process rooted in education, ethics, and collective well-being?where creativity and responsibility toward people and ecosystems coexist.

Methods: Grounded in Amartya Sen?s capability approach and Latin American perspectives on social development, the study applies a participatory and collaborative research-action methodology. Fieldwork will include interviews, participatory workshops, and observation of cooperative practices, as well as the analysis of socioeconomic indicators before and after the implementation of community innovation initiatives. The project will also construct and test local innovation indicators capable of measuring social, environmental, and educational impacts.

Results: Expected results include identifying how cooperative and ethical innovation models strengthen local economies, empower communities, and promote sustainable social mobility. By aligning academic research, public policy, and citizen participation, the project aims to propose practical instruments for the inclusion of social innovation in public university programs and policy frameworks.

Conclusion: This research emphasizes that innovation must be guided by ethical principles, community dialogue, and respect for local ecosystems. It reaffirms the potential of universities to act as transformative institutions in the pursuit of equitable and sustainable development, aligned with the commitments of COP30 and the United Nations Sustainable Development Goals.

Keywords: ethical innovation, cooperative, innovation, creativity, social mobility

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73. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Eduardo Alfredo Caldas Queruz - PIBIC
e-mail: eduqueruz@rede.ulbra.br

Advisor: Ivan Maynart Tavares

CAAE or SEI: 61284725.7.0000.5405

5. ABSTRACT (REQUIRED):

Title: Childhood Ocular Cancer Mortality in Brazil, 1980?2022: A Nationwide Time-Series Analysis.

Author and Co-authors: Eduardo Alfredo Caldas Queruz, Jose de Paula Barbosa Neto, Daniel Trahtman de Boer, Carla Renata Donato Macedo, Luiz Fernando Teixeira.

Purpose: To delineate the mortality profile of malignant ocular neoplasms in Brazilian children.

Methods: We undertook a population-based, retrospective study of deaths among children aged 0-14 years during 1980-2022, using the Mortality Information System (SIM/MS) within the Ministry of Health database (DATASUS). Underlying causes were ascertained with the International Classification of Diseases (ICD): the 9th revision for 1980-1995 (ICD-9 190.0-190.9) and the 10th revision for 1996-1998 (ICD-10 C69.0-C69.9).
We analyzed all deaths from malignant ocular neoplasms in children aged 0 to 14 years, stratified age into 0?4, 5?9, and 10?14 years, and summarized case distributions by tumor type, age group, sex and federal state.

Results: From 1980-2022, 1,769 deaths were attributed to malignant ocular neoplasms in children. Retinal tumors were preponderant, comprising 1,402 deaths (79.25 percent) when combining ICD-9 190.5 and ICD-10 C69.2. Mortality from retinal tumors was heavily concentrated in early childhood, with approximately 80 percent occurring at ages 0-4, and substantially fewer at 5-9 and 10-14 years. The overall sex distribution was nearly even, with a modest male excess (911 male deaths versus 858 female deaths). Among non-retinal sites, the principal categories were eye, unspecified (ICD-9 190.9; ICD-10 C69.9), with 175 cases (9.89 percent), and orbit (ICD-9 190.1; ICD-10 C69.6), with 105 cases (5.93 percent). Geographically, the cumulative burden was greatest in Sao Paulo, with 319 cases (18.03 percent), and lowest in Roraima, with 4 cases (0.22 percent).

Conclusion: Over the past four decades, childhood ocular cancer mortality in Brazil has been largely driven by retinal tumors, predominantly retinoblastoma, accounting for approximately 80 percent of deaths, most of which occur between ages 0 and 4.
These findings highlight the need for improved ophthalmologic evaluation during early childhood, a crucial period for visual development and the prevention of various diseases, including retinoblastoma, which can be life-threatening.
In parallel, nearly 10 percent of deaths were attributed to unspecified malignant neoplasms of the eye, underscoring the need for more accurate and standardized epidemiological reporting.

Keywords: Retinoblastoma; Malignant ocular neoplasms; Children, Retinal tumors; Mortality; Epidemiology.

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74. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Gustavo Moreira Umehara - R1
e-mail: gm.umehara@gmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Global Vision, Unequal Voices: A Scientometric Analysis of Gender and Geographic Disparities at ARVO (2013?2023)

Author and Co-authors: Gustavo Moreira Umehara, Beatriz Karine Taba Oguido, Luis Filipe Nakayama

Purpose: The Association for Research in Vision and Ophthalmology (ARVO) meeting is the world?s largest and most influential Ophthalmology scientific congress. Each year, thousands of researchers from diverse institutional and social backgrounds present their work, making the meeting a unique reflection of global trends in ophthalmic research. Scientometric analyses of ARVO abstracts offer valuable insights into the evolution of scientific collaboration and representativeness. This study aimed to characterize authors?s demographic and geographic profile and the temporal trends in gender diversity and international collaboration.

Methods: We conducted a retrospective scientometric analysis of all abstracts presented at the ARVO Annual Meeting from 2013 to 2023. Metadata were extracted from ARVO website, including author names, affiliations, and presentation year. Countries were standardized to ISO3 codes and classified according to the World Bank income level. Author gender was inferred using the GPT-4 API. International collaboration was defined as the presence of authors from at least two different countries within a single abstract. Analyses were performed in Python using pandas, geopandas, and matplotlib, generating descriptive statistics, temporal trends, and a global map of author distribution.

Results: A total of 270,909 authors were identified among 46,437 abstracts. Of 127 countries analyzed, 54.53% of the authors originated from the United States, while Brazil ranked 12th (1.48%), leading Latin America. Low- and middle-income countries (LMICs) accounted for 9.96% of the total. Female representation reached 38.04%, rising from 35.88% in 2013 to 40.58% in 2023. International collaboration rose from 18.41% to 24.35% in the same period.

Conclusion: This study provides an overview of demographic and geographic diversity among ARVO Annual Meeting. Although participation from female researchers and authors from LMICs has gradually increased over time, these groups remain underrepresented. The growing rate of international collaboration underscores the expanding global interconnectedness of ophthalmic research and highlights ARVO?s central role as a catalyst for inclusion, diversity, and scientific advancement in vision science worldwide.

Keywords: Scientometrics, Bibliometrics, Artificial Intelligence, Ophthalmology

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75. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Hugo Xavier Rocha Filho - R3
e-mail: hugoxavierrochafilho@hotmail.com

CAAE or SEI: 91975925.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Ophthalmological Knowledge Assessment: A Comparative Study Among Medical Students, Recently Graduated General Practitioners and Leading Artificial Intelligence Models

Author and Co-authors: Hugo Rocha, Midori H. Osaki, Amanda Welter, Erico B.P.P. Sant? Anna, Gustavo O. Lima, Daniel B. Ferreira, and Tammy H. Osaki

Purpose: This study aims to compare the fundamental ophthalmological knowledge of medical students and recently graduated general practitioners with the performance of two major artificial intelligence (AI) models, Gemini and ChatGPT 4.0.

Methods: A 20-item questionnaire was developed, comprising original questions based on the most critical ophthalmological knowledge for a general practitioner and key topics from the main medical residency selection exams in Brazil. The questionnaire was administered to both AI models, Gemini and ChatGPT 4.0, for performance evaluation. The study is currently in progress, with the same questionnaire set to be applied in-person to a cohort of recently graduated physicians and final-years medical students from the Federal University of São Paulo (UNIFESP).

Results: The preliminary results from the AI cohort demonstrated a high level of accuracy, with both Gemini and ChatGPT 4.0 achieving a score of 95% on the questionnaire. Data collection and analysis for the physician and medical student cohort are pending.

Conclusion: The initial findings suggest that leading AI models possess a high degree of accuracy regarding the essential ophthalmological knowledge required for general practice. Further data, upon completion of the human cohort evaluation, will be crucial to determine how this performance compares to that of newly qualified doctors and to discuss the potential implications for medical education and clinical support.

Keywords: Ophthalmology, Artificial Intelligence, Medical Education, General Practice, Knowledge Assessment

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76. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Daniel Trahtman de Boer - R3
e-mail: boer.daniel@unifesp.br

CAAE or SEI: 00000.000000/0000-00

5. ABSTRACT (REQUIRED):

Title: Development and validation of a low-cost 3D-printed simulator for Phaco Chop training in ophthalmology residency at the Federal University of São Paulo (UNIFESP)

Author and Co-authors: Daniel Trahtman de Boer, Wallace Chamon Alves de Siqueira, Rafael Freire Kobayashi

Purpose: O develop, implement, and validate a reproducible physical simulator for Phaco Chop training in phacoemulsification, aiming to improve technical competence, safety, and educational outcomes among ophthalmology residents.

Methods: This experimental pilot study will include the digital modeling, budgeting, 3D printing, and iterative adjustment of the simulator, followed by technical validation sessions with expert surgeons. After approval on Plataforma Brasil and by the UNIFESP Research Ethics Committee, eligible residents will be selected for supervised training sessions conducted within the university?s WetLab infrastructure. Outcomes evaluated will include OSACSS scores, time and attempts to successfully fracture the nucleus, rates of success and complications, movement fluidity, and self-assessment metrics (SURG- TLX, SE-12), with blinded video evaluations and longitudinal monitoring of skill transfer.

Results: The study expects to observe significant improvements in technical scores and efficiency for the intervention group, lower rates of complications, enhanced skill transfer to actual surgeries, and high participant acceptance. The cost-effective and scalable nature of the simulator is anticipated to enable broader adoption and impact across training centers.

Conclusion: A reproducible, affordable 3D-printed simulator for Phaco Chop training can democratize access to standardized microsurgical education, reduce patient risk, and accelerate the learning curve for ophthalmology residents in Brazil.

Keywords: Phaco Chop, 3D-printed simulator, surgical training, phacoemulsification, ophthalmology education, simulation-based learning

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77. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Glauco S. A. Aquino - Fellow
e-mail: glaucoaaquino@gmail.com

CAAE or SEI: 87901925.5.0000.5505

5. ABSTRACT (REQUIRED):

Title: Influence of Aerobic Activity on Intraocular Pressure, Anterior Chamber Morphological Changes, and Choroidal Perfusion in Different Ametropias

Author and Co-authors: Glauco Sérgio Avelino de Aquino, Beatriz Stauber Araújo, Filipe de Oliveira, Bárbara Oliveira da Eira, Jonathan Luiz Igreja, Juan Fulgencio Welko Mendoza, Rodrigo Cozar Silva, Gustavo Vieira Lima dos Santos, Hugo Castelo Branco Felix de Andrade, Murilo Jo

Purpose: To evaluate variations in intraocular pressure (IOP) and ocular structural and circulatory changes induced by aerobic activity in individuals with different ametropias, analyzing the correlation of these variations to better understand the physiological implications of these responses in the pathophysiology of glaucoma.

Methods: An interventional study will be conducted at the Department of Ophthalmology, UNIFESP, with a planned sample of 50 volunteers aged 18?40 years, free of systemic or ocular diseases, and with baseline IOP

Results: In progress.

Conclusion: This study aims to integrate morphofunctional, physiological, and autonomic data to clarify the influence of aerobic exercise on ocular dynamics across different ametropias. Understanding these interactions may broaden knowledge regarding IOP regulation and the role of refractive and autonomic factors in the pathophysiology of glaucoma. The findings are expected to support the use of aerobic exercise as a non-pharmacological adjunct strategy for ocular pressure control and the prevention of glaucomatous degeneration, reinforcing the importance of a multidimensional approach in preventive ocular health.

Keywords: Vessel Area Density, Glaucoma, Exercise, Aerobic activity, Anterior chamber changes

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78. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: André Hiroshi Bando - PG0
e-mail: andre.h.bando@gmail.com

Advisor: Carolina Pelegrini Gracitelli

CAAE or SEI: 77747823.1.0000.5264

5. ABSTRACT (REQUIRED):

Title: The Reliability and Performance of a Virtual Reality Headset in Brazilian Pediatric Patients

Author and Co-authors: Bando, AH.[1]; Nakayama, LF.[1]; Almeida, MR.[1]; Rossetto, JD.[2,3]; Rolim-de-Moura, C.?; Barreto, LS.[2]; Kolln, LP.[2]; Land, M.?; Skalicky, SE6, 7; Gracitelli, C.P.B.[1]

Purpose: Compare VisuALL portable visual field results with Humphrey Visual Field computerized perimetry in non glaucoma Brazilian children to assess diagnostic accuracy and patient satisfaction.

Methods: A pilot cross-sectional study with crossover design was conducted involving 28 children aged 4-18 years without ophthalmological comorbidities or prior visual field examination experience.
One eye per participant was randomly assigned to undergo either HVF or VRH for the initial examination, followed by crossover to the alternate test within one month. Group 1 started with HVF followed by VRH, while Group 2 began with VRH followed by HVF. All examinations were performed by trained technicians, and participants underwent complete ophthalmological evaluation prior to testing, including:
Dynamic and static refraction
Biometry
Anterior biomicroscopy
Fundoscopy under midriasis with slit lamp and 78D or 90D

Results: The study population had a mean age of 10.6 ± 4.6 years, with 51.7% female participants and 48.3% of mixed race. No statistically significant differences were observed between groups regarding age (p=0.479), gender (p=0.885), or race (p=0.199). Visual field parameters showed no significant differences between HVF and VRH for mean deviation (MD: mean difference 3.44; 95% CI: -1.52 to 10.48; p=0.613) or pattern standard deviation (PSD: mean difference -0.24; 95% CI: -1.84 to 1.33; p=0.711) (Table 1.) . However, significant differences emerged in test reliability metrics:
Fixation loss: 0% on VRH vs. 0.4 ± 0.3% on HVF (p = 0.0001)
Overall reliability: 96% for VRH vs. 31% for HVF (p

Conclusion: Our findings indicate significantly better reliability indexes of VRH compared to HVF, while maintaining overall agreement across global parameters. VRH may represent a promising and valuable examination for obtaining more reliable and accurate results in pediatric assessments

Keywords: Glaucoma; alternative visual field; virtual reality;

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79. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Bruno Henrique Vieira Escute - PG1
e-mail: brunescute@gmail.com

Advisor: Carolina Pelegrini Gracitelli

CAAE or SEI: 74423823.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Evaluation Of Visual Function In Patients With Glaucomatous Optic Neuropathy

Author and Co-authors: Bruno Henrique Vieira Escute
Roberto Murad Vessani
Tiago dos Santos Prata
Sérgio Henrique Teixeira
Augusto Paranhos Júnior
Carolina Pelegrini Barbosa Gracitelli

Purpose: To evaluate the agreement and reproducibility of visual field parameters in patients with glaucomatous optic neuropathy using three different automated perimeters, and to compare the short-term fluctuation in visual field data obtained from each device.

Methods: This cross-sectional clinical study included 40 eyes from 40 individuals with glaucoma at different stages of disease severity. Functional testing was performed using three automated perimeters: AP-7000(Kowa Co. Ltd., Tokyo, Japan), Humphrey Field Analyzer (HFA 750i, Carl Zeiss Meditec, Dublin, CA, USA), and Octopus 600 (Haag-Streit AG, Koeniz, Switzerland).Each participant underwent testing under standardized conditions and according to the manufacturers? threshold strategies.The results were analyzed to determine the agreement, reproducibility, and short-term fluctuation among the instruments.At this stage, demographic and baseline ocular data have been analyzed. Statistical analysis will further assess interdevice agreement using ICC for MD,PSD, and VFI,as well as Bland-Altman plots to visualize the limits of agreement.

Results: A total of 41 patients were included, with a mean age of 65.5 ± 6.5 years. Of these, 61.0% were female. Mean IOP was 13.8 ± 3.5 mmHg, and mean best-corrected visual acuity (VA) was 0.14 ± 0.14 logMAR.Reproducibility analysis revealed excellent repeatability for the HFA with MD (ICC = 0.926; 95% CI: 0.87?0.96; p

Conclusion: Automated perimetry using different platforms demonstrated high agreement and reproducibility for global indices (MD, PSD, and VFI). Only small short-term fluctuations in visual field measurements are expected after complete statistical analysis.These results reinforce the reliability of modern threshold strategies across devices for assessing visual function in glaucoma patients.

Keywords: Visual Field; Visual Function; Automated Perimetry; Glaucoma; Reproducibility; Ophthalmology

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Name: Guilherme Barreto de Oliveira Ribeiro - PG1
e-mail: guilhermebor@gmail.com

Advisor: Carolina Pelegrini Gracitelli

CAAE or SEI: 55780822.1.0000.5505

5. ABSTRACT (REQUIRED):

Title: The use of a new wireless type IV polysomnography to evaluate the association between obstructive sleep apnea syndrome and glaucoma: a prospective cross-sectional study.

Author and Co-authors: Guilherme Barreto de Oliveira Ribeiro Geraldo Lorenzi-Filho Diego Munduruca Domingues Sergio Henrique Teixeira Tiago dos Santos Prata Augusto Paranhos Jr. Carolina Pelegrini Barbosa Gracitelli

Purpose: Obstructive sleep apnea syndrome (OSAS) is associated with glaucoma. Polysomnography (PSG) is the gold standard for the diagnosis of OSA. This study aims to evaluate the association between OSAS with objective functional and structural parameters in patients with glaucoma by using a new wireless type IV PSG called Biologix.

Methods: This is a prospective, cross-sectional study, in which 56 glaucoma patients were enrolled until now. It included only primary open-angle glaucoma and normal tension glaucoma cases. All patients performed a complete ophthalmological exam. It was used a spectral domain optical coherence tomography for the measure of retinal nerve fiber layer (RNFL), ganglion cell layer (GCL) morphological

Results: The study included 56 glaucoma patients. The mean age was 60.82 ± 8.41 years, and 62.5% were female. The average mean deviation (MD) of both eyes was ?6.61 ± 6.91 dB. The mean retinal nerve fiber layer (RNFL) thickness was 73.21 ± 11.05 µm, the mean ganglion cell complex (GCC) thickness was 71.08 ± 9.88 µm, and the mean peripapillary superior vessel perfusion density was 38.88 ± 3.30%. There was a significant association between peripapillary superior vessel perfusion density and Pittsburgh questionnaire (? 0.32, p 0.016), and between RNFL mean and NoSAS questionnaire (? ?0.29, p 0.030). Both mean deviation and GCC mean were significantly correlated with NEI-VFQ-25 (? 0.48, p 0.001; ? 0.31, p 0.018, respectively). Significant structure?function correlations were found between MD and RNFL (? 0.41, p 0.002) and between MD and GCC (? 0.49, p

Conclusion: This study concluded that there is a significant associations between sleep apnea risk and both structural and functional parameters of glaucoma. Quality of life was also related to functional and structural outcomes. Despite these findings, a larger sample is still necessary to better explore the relationship between OSAS and ocular structural, functional, and vascular parameters.

Keywords: Glaucoma; Obstructive Sleep Apnea; Polysomnography; OCT;

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81. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Paula Azevedo Alhadeff - PG1
e-mail: paula.alhadeff@unifesp.br

Advisor: Ivan Maynart Tavares

CAAE or SEI: 39677420.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: The effectiveness of the current clinical paradigm for the diagnosis of glaucoma

Author and Co-authors: Paula Alhadeff, MD; Ivan Maynart Tavares, MD, PhD; Donald C Hood MD,PhD; Carlos G De Moraes, MD, PhD

Purpose: to evaluate the effectiveness of the current clinical paradigm for the diagnosis of glaucoma

Methods: One eye of 70 patients suspected or with mild open-angle glaucoma and 50 healthy subjects will be prospectively tested with 24-2 and 10-2 VF, macular, and disc OCT cube scans, and retinography. Three general ophthalmologists will classify whether each patient has glaucoma based only on the OCT Cirrus report. These results will be compared to artificial intelligence developed by Unifesp to diagnose glaucoma based only on OCT, and it will also be compared to the current clinical paradigm for the diagnosis of glaucoma by three glaucoma specialists, which is retinography, 24-2VF, and OCT Cirrus Report. Lastly, these results will be compared to the classifications of a customized one-page report developed by Columbia University. Three individuals trained in analyzing this report will classify the same patients. The report contains features of OCT scans with VF information.

Results: We are still collecting the data

Conclusion: No conclusion yet. We are still collecting the data

Keywords: glaucoma; visual field; OCT; retinography

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82. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Luís Armando Gondim - PG0
e-mail: l.armandovitorino@gmail.com

Advisor: Tiago dos Santos Prata

CAAE or SEI: 28060619.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Optic nerve head hemoglobin levels in patients with primary open-angle glaucoma: an investigation of diagnostic and progression indices

Author and Co-authors: Luís Armando Vitorino Alves de Souza Gondim, Janaina Andrade Guimarães Rocha, Fábio Nishimura Kanadani, Augusto Paranhos Jr., Carolina Pelegrini Barbosa Gracitelli, Sérgio Henrique Teixeira, Márcio Henrique Mendes, Tiago dos Santos Prata

Purpose: To assess the accuracy of the Glaucoma Discriminant Function (GDF) index, adjusted for optic disc size and visual field pattern standard deviation (PSD), using the Laguna ONhE software.

Methods: For this study, we enrolled patients with primary open-angle glaucoma and healthy participants, as controls. After inclusion, all patients underwent fundus photography and analysis of optic nerve head hemoglobin (ONH-Hb) levels using the Laguna ONhE software. The mean optic disc area and GDF were calculated in the control group. Simple linear regression was performed to determine the correlation coefficient and coefficient of determination between optic disc area and GDF. Based on these results, the percentage adjustment of the GDF value per 0.1 mm² of disc area was determined. The area under the ROC curve (AUC) was calculated for the unadjusted GDF, the GDF adjusted for optic disc area, and the GDF adjusted for visual field PSD.

Results: We included 93 patients with primary open-angle glaucoma (mean age, 64,55 years; 151 eyes) and 38 healthy controls (mean age, 62,07 years; 65 eyes). The mean optic disc area and GDF in the control group were 2.19 mm2 and 17.94, respectively. The mean visual field deviation in the case group was -8,31. There was a significant correlation between disc area and GDF (p = 0,0013). For each 0.1 mm2 of disc area, the GDF changed by 7.29%. The sensitivity, specificity, and AUC of the unadjusted GDF were 80.8%, 96.9%, and 0.903, respectively. The sensitivity, specificity, and AUC of GDF adjusted for disc area were 81.5%, 100%, and 0.951, respectively. The sensitivity, specificity, and AUC of the GDF adjusted with the PSD were 89.9%, 95.2%, and 0.965, respectively. Adjusted AUCs were larger than the unadjusted AUCs (DeLong test; p = 0,0434).

Conclusion: The GDF adjusted for both optic disc area and PSD values have a larger AUC than the conventional unadjusted GDF. These values may help increase the accuracy of the GDF in patients with large physiological cup-to-disc ratios, in whom the unadjusted GDF may lead to worse specificity.

Keywords: Glaucoma, Hemoglobina, Laguna.

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83. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Júlia Maggi Vieira - PG1
e-mail: juliamaggi27@gmail.com

Advisor: Tiago dos Santos Prata

CAAE or SEI: 77155123.8.0000.5505

5. ABSTRACT (REQUIRED):

Title: Analysis of ocular biomechanics in different phenotypic patterns of glaucomatous optic nerve damage

Author and Co-authors: Júlia Maggi Vieira, Fábio Nishimura Kanadani, Carolina Pelegrini Barbosa Gracitelli, Sérgio Henrique Teixeira, Augusto Paranhos Jr., Tiago Santos Prata

Purpose: To analyze corneal biomechanics in eyes with glaucoma, ocular hypertension and healthy eyes (controls), and to compare biomechanical parameters between different phenotypes of glaucomatous optic nerve damage.

Methods: A cross-sectional observational study is being currently carried-out including three groups: control, ocular hypertensive, and glaucomatous eyes. The glaucomatous group will be further divided into four phenotypic patterns of optic nerve damage based on retinography features: senile sclerotic, myopic, generalized cup enlargement and focal ischemic. All images will be analyzed by two glaucoma specialist. The opinion of a third specialist will be used for adjudication in cases of disagreement. Eyes deemed as inconclusive will be excluded from the analysis. The following corneal biomechanical parameters will be collected and compared among the groups using the Corvis ST: stress-strain Index (SSI), stiffness parameter at A1 (SPA1), biomechanically-corrected intraocular pressure (bIOP) and central corneal thickness (CCT).

Results: The study is currently in the data collection phase. Statistical analysis will be performed once data acquisition is completed, and the findings will be presented in due course.

Conclusion: The study of ocular biomechanics may provide new insights, improving diagnosis, follow-up and treatment of glaucoma, particularly in early stages. Although corneal biomechanics has been well studied in keratoconus and corneal disorders, its application in glaucoma remains an emerging field. This research aims to contribute to a better understanding of the biomechanical aspects of glaucoma.

Keywords: ocular biomechanics; glaucoma; corvis ST; optic nerve damage

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84. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Bárbara Mendonça Paiva Antonio José - R1
e-mail: barbarampaj@gmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Secondary Glaucoma Associated with Granulomatosis with Polyangiitis: A Case Report and Literature Review

Author and Co-authors: Bárbara Mendonça Paiva Antonio José
Prof. Dr. Luiz Alberto Soares de Melo Jr.
Mariana Mello Gonçalves Rodrigues

Purpose: To describe and analyze a rare case of secondary glaucoma associated with granulomatosis with polyangiitis (GPA) in a young patient with a single functional eye, and to discuss diagnostic and therapeutic challenges in light of the current literature.

Methods: This is a descriptive case report of a 26-year-old male patient with GPA and necrotizing scleritis, followed at the Glaucoma Sector of UNIFESP. Data collection included medical records, intraocular pressure (IOP) measurements, visual acuity, functional tests (visual fields), and structural imaging (OCT, UBM, ultrasound, gonioscopy). A descriptive analysis of clinical course, therapeutic response, and anatomical and functional outcomes was performed.

Results: The patient presented anatomical alterations secondary to necrotizing scleritis, leading to secondary angle-closure glaucoma. Despite medical therapy with topical hypotensive agents and oral acetazolamide, IOP fluctuations were documented over time. Imaging demonstrated scleral thinning, iris anteriorization, and narrow angles. Functional testing showed reduced visual acuity but preservation of some visual function in the single functional eye.

Conclusion: Secondary glaucoma associated with GPA poses significant diagnostic and therapeutic challenges, especially in young patients with a single functional eye. Thorough anatomical assessment, close IOP monitoring, and individualized treatment strategies are essential to preserve residual vision. This case contributes to the understanding and management of secondary glaucoma in autoimmune diseases.

Keywords: Granulomatosis with Polyangiitis; Necrotizing Scleritis; Secondary Glaucoma; Angle-Closure; Autoimmune Diseases; Case Report; Single Functional Eye.

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85. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Daniela Bueno Larrubia - R2
e-mail: danielarrubia@gmail.com

CAAE or SEI: 66256422.7.0000.0068

5. ABSTRACT (REQUIRED):

Title: Cognitive Performance and Structural Glaucoma Markers in Diabetes.

Author and Co-authors: LARRUBIA, D. B.; CAVALCANTE, J. L. T. ; MARTINS, C. N. ; NOVAES, F.C; MALERBI, F. K.; NAKAYAMA, L. F.; REGATIERI, C. V. S.

Purpose: Glaucoma and cognitive impairment are neurodegenerative conditions that may share common microvascular and metabolic pathways, particularly in individuals with diabetes mellitus (DM). This study evaluated whether global cognitive performance or specific cognitive domains are associated with structural markers of glaucoma, as measured by optic disc excavation ratios.

Methods: In this cross-sectional study, 217 individuals with DM who underwent optic nerve imaging were analyzed. Structural glaucoma was defined as a vertical cup-to-disc ratio (C/D) ? 0.7 in at least one eye. Logistic regression models were constructed using clinical covariates (age, sex, diabetes duration, HbA1c, BMI, kidney function, systolic blood pressure) with and without the total Mini-Mental State Examination (MMSE) score. Five-fold cross-validation was used to assess model discrimination (AUC) and calibration (Brier score). Additional models explored the predictive value of individual MMSE subitems (MME-1 to MME-11).

Results: Among 217 participants (mean age 68 ± 11 years; 56 with structural glaucoma), the base clinical model achieved an AUC of 0.49 ± 0.08 and a Brier score of 0.17.
Adding total MMSE did not improve discrimination (AUC 0.49 ± 0.09, ?AUC = ?0.001, p = 0.53).
In multivariable logistic regression, MMSE was not independently associated with glaucoma (OR 1.04, 95% CI 0.93?1.16, p = 0.53).
Exploratory analysis of MMSE subdomains showed no significant predictors; the best-performing item (MME-9) achieved AUC = 0.52, p = 0.20.

Conclusion: Cognitive performance, whether assessed globally or by specific MMSE subdomains, was not associated with structural glaucoma in individuals with diabetes. These results suggest that neurodegeneration of the optic nerve and systemic cognitive decline may represent parallel but independent processes within the diabetic neurovascular spectrum.

Keywords: Diabetes mellitus, Glaucoma, Cognitive performance, Mini-Mental State Examination, Optic nerve, Neurodegeneration

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86. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Mariana Mello Gonçalves Rodrigues - R4
e-mail: mello.mariana@unifesp.br

CAAE or SEI: 45077500

5. ABSTRACT (REQUIRED):

Title: Structure?Function Correlation Between Visual Field and Optical Coherence Tomography in Glaucoma Patients

Author and Co-authors: Mariana Mello Gonçalves Rodrigues, Wellison Martins da Silva, Paula Azevedo Alhadeff, Luiz Alberto Soares de Melo Jr
Department of Ophthalmology and Visual Sciences, Universidade Federal de São Paulo (UNIFESP/EPM)

Purpose: To evaluate the correlation between structural measurements obtained by optical coherence tomography (OCT) and functional losses measured by standard automated perimetry (SAP) in patients with glaucoma, in order to further elucidate the structure?function relationship in glaucomatous optic neuropathy.

Methods: This observational cross-sectional study included one eye of 50 patients suspected or with mild open-angle glaucoma. All participants underwent OCT imaging (measuring peripapillary retinal nerve fibre layer (RNFL) thickness, ganglion cell complex (GCC)/macular thickness) and visual field testing (Humphrey 24-2/10-2 or equivalent). Correlations between OCT parameters and visual field indices (mean deviation and visual field index) will be analysed using Spearman correlation coefficients, and regression models will be applied to assess predictive value of structural measures for functional sensitivity.

Results: The data is under analysis.

Conclusion: The data is under analysis.

Keywords: glaucoma, optical coherence tomography, visual field, retinal nerve fibre layer, ganglion cell complex, structure?function correlation.

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87. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Andrea Oliveira da Silva - PG1
e-mail: andrea.oliveira@unifesp.br

Advisor: Ivan Maynart Tavares

CAAE or SEI: 77813923.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Use of online cognitive-behavioral protocol for caregivers of children treated in pediatric ophthalmology outpatient clinics and early visual stimulation: assessment of outcomes for mental health and quality of life.

Author and Co-authors: Andrea Oliveira da Silva
Ivan Maynart Tavares
Célia Regina Nakanami

Purpose: To evaluate the outcomes of a baseline Cognitive Behavioral (online) intervention for the mental health and quality of life of parents/caregivers of children attending pediatric ophthalmology and early visual stimulation services.

Methods: Participants will initially be presented with a free and informed consent form, a sociodemographic questionnaire, and the application of four assessment instruments: 1. Depression, Anxiety, and Stress Scale (DASS-21); 2. Parental Stress Scale; 3. Child Visual Function Questionnaire (CVFQ); 4. SF-36 Quality of Life Questionnaire. 1. At baseline, the moment preceding the cognitive-behavioral therapy intervention. 2. Before completing the eighth session. 3. After three and six months of the intervention. The sessions will be conducted through a digital platform and audio-recorded over eight consecutive weeks, each lasting 50 minutes.

Results: In progress.

Conclusion: Research in the data collection phase. No conclusions are available.

Keywords: Eye diseases, early visual stimulation, caregivers, cognitive-behavioral therapy, mental health, quality of life.

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88. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Fernanda Melo Gadelha Sarmento - R1
e-mail: fernanda.gadelha@unifesp.br

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Septic cavernous sinus and ophthalmic veins thrombosis: case report

Author and Co-authors: Fernanda Melo Gadelha Sarmento
Vinícius de Almeida Rodrigues Silva e Souza
Luiz Fernando Teixeira
Paulo Gois Manso
Luciana da Cruz Noia

Purpose: To report a case of septic cavernous sinus and ophthalmic veins thrombosis

Methods: Review of medical records

Results: Male, 63-year-old, referred to the emergency room due to left eye pain and decreased visual acuity after being punched 10 days earlier. He presented with left eye decreased visual acuity (20/400), proptosis, conjunctival injection, pain, ophthalmoplegia and poor general condition. A skull and orbital Computed Tomography showed left postseptal cellulitis and left orbital compartment syndrome. An emergency lateral canthotomy was performed, intravenous antibiotic therapy with ceftriaxone and vancomycin was initiated and evaluation by the Infectology team, hospitalization and laboratory tests were requested. After two days of treatment, he had improvement in general condition, left eye visual acuity (20/100) and laboratory tests, though left ophthalmoplegia persisted. A skull and orbital Magnetic Resonance Imaging (MRI) showed bilateral orbital cellulitis complicated by left ophthalmic vein and cavernous sinus thrombosis, which could have septic etiology. Antibiotics were continued. After two days, he presented with right eye proptosis and ophthalmoplegia. A new MRI showed thrombosis persistence involving the right ophthalmic vein. Anticoagulation with enoxaparin 1 mg/kg 12/12h was initiated with the Neurology team supervision and antibiotics maintained. After 3 weeks of treatment, there was complete resolution of ophthalmoplegia in both eyes and left eye visual acuity was 20/40. He was discharged with oral ciprofloxacin for 4 more weeks and rivaroxaban until further evaluation

Conclusion: Septic cavernous sinus thrombosis is a rare complication of face and neck infections with high mortality rates. Control of the primary infection and early diagnosis are essential. Anticoagulation must be individualized, since there is no consensus in the literature. Multidisciplinary care is necessary to increase positive outcomes and reduce mortality

Keywords: Septic cavernous sinus thrombosis, ophthalmic veins thrombosis, postseptal cellulitis

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Methods
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Conclusion
Keywords

Poster guidelines:
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89. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Henry Nakano Sahao - R1
e-mail: henry.sahao@gmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: RHINO-ORBITAL MUCORMYCOSIS IN A DIABETIC PATIENT

Author and Co-authors: Henry Nakano Sahao, Rafael Silveira Feitosa

Purpose: To report a case of rhino-orbital mucormycosis in a diabetic patient, emphasizing the importance of early recognition, prompt antifungal therapy, surgical intervention, and multidisciplinary management to improve outcomes

Methods: The patient?s medical record was reviewed.

Results: A 42-year-old male patient with type 2 diabetes, poorly adherent to insulin, was admitted for glycemic decompensation and systemic symptoms. He developed bilateral eyelid pain and erythema, progressive vision loss in the left eye to no light perception. Ophthalmic examination on the right eye: visual acuity of 20/40, intraocular pressure of 12 mmHg, normal conjunctiva and cornea. Left eye: no light perception, friable orbital tissue, edema and periorbital necrotic areas. Initial management included hospitalization for broad-spectrum antibiotic therapy and brain/orbit CT and MRI, which revealed extensive left pre- and post-septal cellulitis, pansinusitis, neuritis and pachymeningeal thickening. Nasal mucosa biopsy was initially negative for fungi. A multidisciplinary discussion was arranged.

Due to the aggressiveness of the disease, poor antibiotic response, and central nervous system involvement, left-sided sinusotomy and orbital exenteration were indicated, with support from neurosurgery, rhinology and head and neck surgery. The infectious diseases team initiated treatment with endovenous liposomal amphotericin B, isavuconazole and linezolid.

Cultures later confirmed fungal elements consistent with Mucorales hyphae on biopsy. Aerobic cultures grew multisensitive S. epidermidis and S. hominis.

Conclusion: Rhino-orbital mucormycosis is a rapidly progressive and life-threatening infection that requires a high suspicion in uncontrolled diabetics. Prompt antifungal therapy, aggressive surgery, and early multidisciplinary management are essential to improve survival and prevent intracranial spread.

Keywords: Mucormycosis; Rhino-orbital; Diabetes mellitus; Amphotericin B; Orbital exenteration

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90. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Lilian Emi Ohkawara - PG0
e-mail: lilian.ohk@gmail.com

Advisor: Tammy H. Osaki

CAAE or SEI: 76357523.9.0000.5505

5. ABSTRACT (REQUIRED):

Title: Evaluation of retinal nerve fiber layer changes in patients with hemifacial spasm

Author and Co-authors: Lilian Ohkawara, Gustavo Ludwig, Midori H. Osaki, Gustavo Gameiro, Tulio Loyola, and Tammy H. Osaki

Purpose: The impact of forced eyelid closure on the intraocular pressure (IOP) has been documented in existing literature. Patients with Hemifacial Spasm (HFS) may experience a higher susceptibility to increased ipsilateral IOP due to the persistent anomalous eyelid movements, and consequently, this could lead to alterations in the ipsilateral retinal nerve fiber layer (RNFL) and increased risk of glaucoma. The aim of this study was to assess the effects of the eyelid spasms on IOP, as well as a possible impact on the RNFL.

Methods: In this prospective study, 16 patients with HFS and 11 age matched healthy subjects were recruited. Standardized IOP measurements in both affected and unaffected eyes in patients with HFS were taken with Goldmann tonometer before treatment with botulinum toxin application and bilaterally in the control group. Measurements of the RNFL with optical coherence tomography (OCT) were also performed in both groups.

Results: Still in progress

Conclusion: Still in progress

Keywords: hemifacial spam, retinal nerve fiber layer

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91. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Bárbara Moreira Ribeiro Trindade Dos Santos - R2
e-mail: bmrts99@gmail.com

CAAE or SEI: 80417524.2.0000.5505

5. ABSTRACT (REQUIRED):

Title: ARTIFICIAL INTELLIGENCE TECHNOLOGY FOR BLINK ASSESSMENT

Author and Co-authors: Bárbara Moreira Ribeiro Trindade dos Santos, Midori H. Osaki, Gustavo A. Bonesso, Juliana Y. Washiya, Carlos G. Godoy, Regina C. Coelho and Tammy H. Osaki

Purpose: Blinking can be affected by several conditions. Objective assessment of blinking requires methods capable of capturing facial images of the patient, along with specialized software to recognize and analyze eyelid movements. Most studies on blinking rely on manual counting of eyelid movements or on complex two-step systems that involve the use of external cameras for image capture and desktop software for subsequent analysis. These methods are generally impractical for clinical use. We developed a smartphone application that provides blink analysis directly on the mobile device.

Methods: The software employs a machine learning model to identify the eye opening status. Blinking was recorded bilaterally using an iPhone 13 under standardized conditions. Participants with ocular or neurological disorders that could affect blinking were excluded. Blink analysis generated by the app was compared with manual counts from the recorded videos. Accuracy was evaluated using the root mean square error (RMSE).

Results: Videos from 34 participants were analyzed; 3 were excluded for poor quality. Mean age was 36.8 ± 13.1 years. The app detected an average of 20.66 ± 12.06 blinks/min, compared with 20.78 ± 12.31 blinks/min manually counted, yielding an RMSE of 0.088, indicating high detection accuracy.

Conclusion: The developed application demonstrated reliable performance in blink analysis. An improved version of this system could facilitate blink assessments in various conditions, allowing doctors to monitor disorders such as blepharospasm, and facial paralysis.

Keywords: Blink detection; Artificial intelligence; Mobile application; Dry eye

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92. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Fernanda Matos e Oliveira - R2
e-mail: matosfernanda00@gmail.com

CAAE or SEI: 91975925.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Profile of Patients Undergoing Surgery for Ectropion, Entropion, and Trichiasis at Hospital São Paulo

Author and Co-authors: Fernanda Matos. Tammy Osaki

Purpose: General Purpose
To analyze the clinical, etiological, and surgical profile of patients who underwent surgery for correction of ectropion, entropion, and trichiasis at Hospital São Paulo in the past 5 years.

Specific Purposes
- Determine the predominant age group, ethnicity, and gender.
- Classify the types of entropion (congenital, involutional, spastic, cicatricial).
- Classify the types of ectropion (congenital, involutional, cicatricial, mechanical, paralytic).
- Classify cases of trichiasis (primary or acquired) and their causes.
- Determine the surgical techniques utilized.
- Assess the frequency of surgical recurrence for each condition.

Methods: Study Type: Retrospective, observational, and descriptive study.
Study Location: Hospital São Paulo (UNIFESP).
Population and Sample: All patients who underwent surgery for correction of ectropion, entropion, and trichiasis between September 2021 and August 2025 will be included.
Inclusion Criteria: Patients undergoing surgery for correction of ectropion, entropion, or trichiasis during the study period.
Exclusion Criteria: Patients operated for other eyelid conditions.
Variables to Be Collected:
- Demographics: age, sex, ethnicity.
- Clinical: diagnosis (ectropion, entropion, or trichiasis), laterality, type of condition, cause (involutional, cicatricial, etc.).
- Surgical: technique used, date of surgery, recurrence (yes/no), time to recurrence.

Data Collection: Data will be obtained via review of electronic and physical medical records by a previously trained team. Records will be exported in anonymized and de-identified form. All data will be stored in a digital database after the de-identification process. Only research team members will perform anonymization and only they will have access to complete data.
Statistical Analysis: Data will be entered into an electronic spreadsheet (Excel) and analyzed using statistical software (SPSS or R). Descriptive analyses (mean, median, proportions) will be used and, when applicable, association tests (chi-square, Student?s t-test), with a significance level of 5%.

Results: IN PROGRESS

Conclusion: IN PROGRESS

Keywords: Ectropion, Entropion, Trichiasis

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93. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Luiza Sousa Soares - R3
e-mail: luiza.soares@unifesp.br

CAAE or SEI: 80417524.2.0000.5505

5. ABSTRACT (REQUIRED):

Title: Ophthalmologic Characterization in Myasthenia Gravis: Correlation of Clinical Stage with ophthalmological assessment

Author and Co-authors: Luiza Sousa Soares, Midori H. Osaki, Tulio Eschiapati, Acary Oliveira and Tammy H. Osaki

Purpose: This study aims to investigate ophthalmologic parameters in patients diagnosed with myasthenia gravis across different clinical stages. The objective is to analyze ocular parameters, in order to better understand how these features change with disease progression and treatment. Additionally, the study intends to identify possible ophthalmologic indicators that may reflect disease severity in myasthenia gravis.

Methods: This is a prospective observational study conducted at the Division of Neuromuscular Disorders, in collaboration between the Departments of Ophthalmology and Visual Sciences and Neurology at UNIFESP. The study includes patients diagnosed with myasthenia gravis (MG) who are under regular follow-up. Patients were assessed regarding presence of eyelid ptosis, diplopia, fatigability test, MG clinical stage and treatment status.

Results: Still in progress

Conclusion: Still in progress

Keywords: myasthenia gravis, ptosis, diplopia

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94. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Amanda Thum Welter - R4
e-mail: amandatwelter@gmail.com

CAAE or SEI: 91975925.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Comparative Assessment of Oculoplastics Knowledge Between Specialists, Residents, and Artificial Intelligence Systems

Author and Co-authors: Amanda Welter, Midori Osaki, Tammy Osaki

Purpose: This study primarily aims to compare the accuracy and quality of responses to clinical cases and specific questions focusing on Oculoplastics provided by Oculoplastics specialists, Ophthalmology residents, and two Artificial Intelligence systems (ChatGPT and Gemini). The goal is to evaluate the performance among specialized clinical experts, ophthalmology residents and AI in this highly technical area.

Methods: This is an observational, comparative, and cross-sectional study. Participants will include Oculoplastics specialists (Group 1) and Ophthalmology residents (Group 2: 1st, 2nd and 3rd year residents) from the Federal University of São Paulo. A questionnaire containing 20 questions specifically on Oculoplastics will be created based on respected global reference materials. Participants will have limited time to answer in person and without consultation, and their participation will be voluntary and anonymized. The same 20 questions will be presented to ChatGPT and Gemini, recording their first response. All responses will be blindly evaluated and scored based on accuracy.

Results: The study is currently in progress.

Conclusion: This research is expected to provide valuable data on the current capabilities of large language models (ChatGPT and Gemini) in the highly specialized field of Oculoplastics. The results will contribute to the discussion regarding the role and necessity of specialized human expertise in complex medical diagnosis and treatment in the era of Artificial Intelligence.

Keywords: Artificial Intelligence, Oculoplastics, Specialist Knowledge, Clinical Judgment, Medical Education

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95. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Tulio Ruiz Eschiapati - R4
e-mail: tulioeschiapati@gmail.com

CAAE or SEI: 80417524.2.0000.5505

5. ABSTRACT (REQUIRED):

Title: Blink dynamics in myogenic ptosis using an AI-based smartphone application

Author and Co-authors: Tulio Ruiz Eschiapati, Midori H. Osaki, Luiza Soares, Acary Oliveira, Gustavo Bonesso, Carlos Gurjão, Regina Coelho, and Tammy H. Osaki

Purpose: The purpose of this study is to characterize and compare blink dynamics alterations in patients with ocular and generalized forms of myasthenia gravis. Specifically, we aim to assess the clinical manifestations and kinematic parameters of impaired and fatigable eyelid closure, explore the pathophysiological mechanisms underlying blink dysfunction involving the orbicularis oculi and levator palpebrae superioris muscles, and assess potential differences in blink behavior between ocular and systemic disease presentations. In addition, this study aims to assess if blink dynamics can predict fatigability and disease severity in myasthenia gravis.

Methods: This is a prospective observational study conducted at the Division of Neuromuscular Disorders, in a collaboration between the Departments of Ophthalmology and Visual Sciences, Neurology, and Institute of Sciences and Technology at UNIFESP. The study includes patients diagnosed with myasthenia gravis (MG) who are under regular follow-up and display either ocular or generalized forms of the disease.
Blink dynamics was recorded using a smartphone camera and Blink App, a customized AI-based mobile application, developed by our group for real-time blinking assessment on a smartphone platform, in order to quantify blink rate, amplitude, and completeness directly from smartphone video recordings. This method allows real-time kinematic analysis in a clinical setting without the need for specialized laboratory equipment.
The Blink App uses the smartphone camera to capture images, and a customized software has been developed to accurately identify the eyes, determine their opening status, and generate statistical insights from the blink analysis in real time. The software was built incorporating machine learning tools.

Results: Still in progress

Conclusion: Still in progress

Keywords: Ocular myasthenia gravis, Generalized myasthenia gravis, Blink dynamics

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96. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Helena Maria Costa Oliveira - PG0
e-mail: hmcoliveira@gmail.com

Advisor: Denise de Freitas

CAAE or SEI: 23089.003014/2023-52

5. ABSTRACT (REQUIRED):

Title: A systematic review of observational studies on the use, maintenance and care of contact lenses.

Author and Co-authors: Helena Maria Costa Oliveira, Denise de Freitas, César Lipener

Purpose: General objective: to identify good practices for the use, maintenance and care of contact lenses. Specific objective: create a manual that allows the user to learn and review these guidelines.

Methods: A systematic review of observational studies on the use, maintenance and care of contact lenses for optical, aesthetic, cosmetic and therapeutic purposes will be carried out. Search strategy to identify studies: electronic research will be used in the following databases: PubMed Central®/Medline, National Library of Medicine, National Institutes of Health, United States of America (USA), Latin American and Caribbean Literature in Sciences of Health (LILACS), The Cochrane Library and Elsevier Biomedical Database (EMBASE®), updated in month and year. Selection of articles: The studies will be selected by two authors independently from a list of articles resulting from the search strategy. A third evaluator will act as arbitrator of this process to define whether or not to include the study. Inclusion and exclusion criteria: It was planned to include observational studies that related the contact lens and its use and care. For this process, there will be no restrictions on date of publication. Data extraction: A form will be designed for data extraction and insertion into a Microsoft® Excel® spreadsheet with the methodological characteristics of the study, [1.] first author and year of publication, [2.] country of the study, [3.] study design, [4.] sample analyzed, [5.] methodology used [6.] results regarding the relationship between contact lenses, use, maintenance and care.

Results: The studies selected for this systematic review present in their results safe practices for the use of contact lenses, as well as how user education can be conducted to reduce the risk of complications over time.

Conclusion: The studies selected for this systematic review present in their results safe practices for the use of contact lenses, as well as how user education can be conducted to reduce the risk of complications over time.

Keywords: Compliance; Complications; Contact lenses; Education; Microbial keratitis, Contact lens solutions; Deposits; Efficacy; Follow-up; Infections; Maintenance; Surveillance; Tolerance; Compliance; Contact lenses; Hygiene; Patient education.

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

Poster guidelines:
90cm x 120cm

97. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Yandely Chihuantito Choquechambi - PG0
e-mail: yandelych@gmail.com

Advisor: Denise de Freitas

CAAE or SEI: 23089.038803/2025-76

5. ABSTRACT (REQUIRED):

Title: Efficiency of 3% H2O2 purchased from a pharmacy, neutralized in a case with a platinum disc, in the disinfection of corneal and scleral RGP lenses

Author and Co-authors: Yandely Chihuantito Choquechambi, Cesar Lipener, Denise de Freitas

Purpose: The purpose of this study is to evaluate whether H2O2 (3%, 10 volumes) purchased from a pharmacy, used with a kit with a platinum neutralization ring, will be significantly effective in disinfecting corneal and scleral RGP lenses.
Furthermore, it is essential to evaluate the post-disinfection residue in this method to ensure complete neutralization of the product with the platinum disk, reinforcing the efficacy and safety of the proposed procedure.

Methods: Materials and methods:
Controlled contamination of 30 corneal and scleral lenses will be performed in three groups of 10 lenses for each of the infectious agents: Pseudomonas aeruginosa, Staphylococcus aureus and Acanthamoeba. After contamination, the lenses will be disinfected for 6 hours using H2O2 and a platinum disc kit to neutralize the product.
The disinfection efficacy will then be evaluated using pre- and post-procedure cultures for each infectious agent.
Furthermore, the post-disinfection product residue will be evaluated to ensure complete neutralization of the 3% hydrogen peroxide, validating the efficacy and safety of the proposed protocol.
This study is expected to provide information on the efficacy of H2O2 in disinfecting RGP lenses, as there are no products with this component currently available on the market. Furthermore, it is significantly less expensive than commercially available products, thus contributing to safer and more accessible ophthalmic practices.

Results: We are currently in the data collection stage for the study

Conclusion: We are currently in the data collection stage for the study

Keywords: scleral lenses, Pseudomonas aeruginosa, Staphylococcus aureus, Acanthamoeba, infection

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2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):
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Poster guidelines:
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98. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Cristina Cagliari - PG1
e-mail: cagliari.c@gmail.com

Advisor: Paulo Schor

CAAE or SEI: 60508216.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Lentes de Contato Esclerais em Olhos Saudáveis: podemos melhorar a Performance Visual?

Author and Co-authors: Cristina Cagliari, Paulo Schor

Purpose: Evaluation of visual performance of healthy eyes during scleral contact lens wear

Methods: Volunteers with healthy eyes, normal corneal topographies, and who are exposed to screens (monitors, tablets, or cell phones) for more than 8 hours a day will be invited to participate in the study.

Volunteers will be recruited through an online form and will be divided into two groups: Group 1, consisting of emmetropes with 0.0 logMar vision on the Snellen chart who do not wear glasses or contact lenses, and Group 2, consisting of volunteers who wear contact lenses.

The lenses to be fitted will be provided by Mediphacos (Millennium XC).

Meetings will be held for ophthalmological evaluation, lens fitting, and training. Over the four-month follow-up period, participants will undergo tests to assess visual performance, including a reading speed test using validated MNRead charts and texts that simulate daily life. Furthermore, the Contact Lens Wearers Dry Eye Questionnaire (CLDEQ) will be administered at the beginning and end of the study.

Results: work in progress

Conclusion: work in progress

Keywords: contact lenses, scleral contact lenses, cornea, visual performance, dry eye

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(ST) STRABISMUS

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99. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Maurício Pessoa Lima Filho - R4
e-mail: mauricio160697@gmail.com

CAAE or SEI: 11111111.1.1111.1111

5. ABSTRACT (REQUIRED):

Title: REFRACTIVE ERRORS IN PRETERM INFANTS IN A TERTIARY CARE HOSPITAL IN AN EXPANDED COHORT STUDY

Author and Co-authors: Maurício Pessoa Lima Filho , Paula Damato Dias Barroso, Laísa Braz Stazauskas, Maria Gabriela de Melo Gusmão, Larah Rebeca Diógenes Holanda Machado, Paula Basso Dias
Advisor: Ana Paula Silverio Rodrigues

Purpose: To evaluate the prevalence and types of refractive errors in preterm infants and to investigate potential risk factors associated with abnormal refractive development. With the increased sample size, this study aims to allow a more detailed analysis of clinical characteristics in this population. Additional objectives include stratifying children by age group (1?3, 4?6, 7?10, and 11?16 years), identifying subgroups with high myopia, high hyperopia, and significant anisometropia, and comparing findings between infants with and without a history of retinopathy of prematurity (ROP) treatment, when applicable.

Methods: This is a cross-sectional study involving 110 children aged 1 to 16 years, all with a history of premature birth (gestational age between 22 and 36 weeks). The original cohort of 58 children was examined in 2024 during a hospital-based ophthalmologic campaign, and an additional 52 preterm children were included in 2025 using the same examination protocol. All participants underwent cycloplegic retinoscopy for refractive error assessment, with results classified by spherical equivalent in the worse eye. In the expanded sample, additional clinical data were collected, including ocular motility, presence of nystagmus, IOP measured by rebound tonometry, slit-lamp biomicroscopy, and binocular indirect ophthalmoscopy.
Refractive errors were categorized as myopia (? ?0.50 D), emmetropia (?0.50 D to +0.50 D), hyperopia (? +0.50 D), and mixed astigmatism. Anisometropia was defined as an interocular spherical equivalent difference ? 1.5 diopters.
In the current phase, analyses will be stratified by age group, severity of refractive error (including high myopia and high hyperopia), and ROP status (treated vs. untreated, when applicable). Statistical analysis will assess associations between gestational and clinical variables and the occurrence of refractive errors and anisometropia.

Results: Pending

Conclusion: Pending

Keywords: Preterm infants; Refractive errors; Anisometropia; Retinopathy of prematurity; Pediatric ophthalmology.

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Poster guidelines:
90cm x 120cm

100. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Gustavo Vieira Lima Dos Santos - R1
e-mail: gustavovls@hotmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Ophthalmic Artery Pseudoaneurysm Post-Enucleation in a Patient with Self-Evisceration

Author and Co-authors: Gustavo Vieira Lima dos Santos
Sergio Nakamura Junior

Purpose: To report a case of ophthalmic artery pseudoaneurysm post-enucleation in a patient with self-evisceration

Methods: Data were collected from anamnesis and clinical ophtalmological examination, including anterior segment biomicroscopy and fundoscopy. In addition, the patient underwent additional brain and orbit CT with contrast

Results: In this case report, we present a 84-year-old patient with advanced glaucoma experienced severe right eye pain and ocular content release. Examination revealed scleral lacerations and bleeding. Right eye enucleation was performed. Postoperatively, the patient developed complications including periorbital ecchymosis, acute renal failure, and wound dehiscence with significant bleeding. Imaging studies revealed a potential pseudoaneurysm of the right ophthalmic artery, likely a complication of the enucleation procedure. The patient underwent right eye enucleation. Postoperatively, complications included periorbital ecchymosis, bleeding, and acute renal failure. Significant bleeding occurred on postoperative days 4 and 5, with wound dehiscence. CT imaging revealed a pseudoaneurysm of the right ophthalmic artery. Interventional radiology successfully embolized the artery, stopping the bleeding. The wound was re-sutured, and the patient recovered without further complications. This case highlights the potential for serious complications following eye enucleation, emphasizing the importance of vigilant postoperative monitoring and prompt intervention

Conclusion: In conclusion, this case report emphasizes the importance of recognizing that enucleation may be associated with serious postoperative complications, including the rare occurrence of an ophthalmic artery pseudoaneurysm. Early diagnosis and appropriate intervention are critical to achieving favorable patient outcomes.

Keywords: Ophthalmic artery pseudoaneurysm; Ocular trauma; Enucleation complication; Endovascular embolization

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Poster guidelines:
90cm x 120cm

101. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Pedro Henrique Bronzatto - R1
e-mail: pedrohbronzatto@gmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Intralenticular foreign body: a case report

Author and Co-authors: Pedro Henrique Bronzatto, Bárbara Moreira Ribeiro Trindade dos Santos

Purpose: Intraocular foreign bodies (IOFBs) are a serious complication of penetrating ocular trauma, occurring in up to 40% of cases. Intralenticular foreign bodies (ILFBs) represent only a minority of IOFBs but may cause traumatic cataract, intraocular inflammation, or late complications such as siderosis and glaucoma. Early recognition and appropriate management are crucial for visual prognosis. Our objective is to describe a case of metallic ILFB, highlighting diagnostic approach, surgical management, and outcome.

Methods: Review of medical records

Results: A 48-year-old male construction worker presented with progressive visual loss in the left eye for 3 months after blunt ocular trauma with a metallic object. Best-corrected visual acuity (BCVA) was 20/20 in the right eye and counting fingers in the left. Slit-lamp examination revealed a self-sealing corneal scar, anterior capsular rupture, traumatic cataract, and a metallic ILFB. Intraocular pressure was normal in both eyes. Fundus examination of the left eye was impossible due to lens opacity, but ultrasonography excluded retinal detachment and vitreous foreign body. Ultrasound biomicroscopy confirmed an ILFB with preserved posterior capsule and zonular support. The patient underwent phacoemulsification with intraocular lens implantation six days after admission. At postoperative day 30, BCVA improved to 20/15 with no abnormalities on left fundus examination.

Conclusion: ILFBs account for 5?10% of IOFBs. Visual outcome depends on initial acuity, time to intervention, and material composition. Metallic fragments pose a risk of ocular siderosis, while inert fragments may remain stable. Surgery is indicated when cataract, inflammation, or toxicity risk is present. Phacoemulsification with lens implantation provides excellent results when the posterior segment is uninvolved. Although rare, ILFBs should be considered in penetrating ocular trauma. Prompt diagnosis and surgical management can restore visual function and prevent complications.

Keywords: Intraocular foreign body; Intralenticular foreign body; Traumatic cataract; Penetrating ocular trauma; Phacoemulsification; Ultrasound biomicroscopy

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Methods
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Conclusion
Keywords

Poster guidelines:
90cm x 120cm

102. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Vinicius De Almeida Rodrigues Silva E Souza - R1
e-mail: vinesouza70@gmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Challenge in Post-Traumatic Eyelid Reconstruction: A Case Report Using the Modified Veirs Rod

Author and Co-authors: Vinicius de Almeida Rodrigues Silva e Souza, Gustavo Garcia Agra Naufal, Henry Nakano Sahão, Antonio Morais da Silveira Junior, Ana Áurea Hilarião

Purpose: To report a case of post-traumatic canalicular reconstruction using a modified Veirs rod

Methods: The methodology employed utilized a modified Veirs rod, which is handcrafted from a 30 mm x 7 (22 G) needle, according to the following steps:

1) Manufacturing begins by separating the metallic portion from the synthetic one using a Kelly clamp, followed by polishing the ends of the needle.

2) The needle is then transformed into a rod measuring approximately 11 to 13 mm (modified Veirs rod).

3) Next, a 8-0 Silk suture with a needle is inserted into one end of the rod and secured using 6-0 vycril

Results: The use of Veirs rod modified is indicated for regular, oblique, and transverse canalicular lacerations. A potential drawback is the risk of suture rupture, which may lead to retention of the stent within the canaliculus, requiring a secondary procedure for removal.No intraoperative or postoperative complications were observed. In the present case, this technique was used in a patient with a one-year postoperative follow-up, demonstrating excellent surgical results, confirmed by patency of the operated canaliculus.

Conclusion: We report a case of traumatic canalicular laceration, a condition frequently encountered in ophthalmologic emergency departments across the country and affecting patients of various age groups. Surgical treatment is indicated in cases involving significant aesthetic deformity, canalicular involvement, or major facial trauma. The use of different surgical techniques should always be considered on a case-by-case basis, aiming for the best possible functional and aesthetic outcome. This requires careful consideration of the extent of the injury and the patient?s individual anatomy.

Keywords: Canalicular laceration, Emergency department, Veirs Rod, Ophthalmology

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Poster guidelines:
90cm x 120cm

103. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Antonio Morais Silveira Junior - R2
e-mail: antoniomsjr94@gmail.com

CAAE or SEI: 3619107

5. ABSTRACT (REQUIRED):

Title: Bridge Intra-Arterial Chemotherapy for Retinoblastoma ? Long-Term Analysis

Author and Co-authors: Antonio Morais, MD; Jose Roberto Falco Foneca, MD PhD; Carla Donato Macedo, MD; Luiz Fernando Teixeira MD, PhD

Purpose: The aim of this study was to evaluate the outcomes of bridge intra-arterial chemotherapy (IAC) for the treatment of intraocular retinoblastoma.

Methods: This retrospective, single-institution study included patients treated with IAC between April 2010 and April 2023. Bridge therapy was used in patients with insufficient weight (

Results: A total of 357 eyes from 300 patients were treated with IAC during the study period. Of these, 36 eyes (10%) underwent bridge IAC, comprising 145 infusion cycles. The median number of cycles per eye was four (mean: 4 cycles/eye). The median follow-up time was 49 months.
According to the International Intraocular Retinoblastoma Classification, 23 eyes (63.9%) were classified as Group D or E, representing the most advanced stages of the disease.
During follow-up, 32 eyes (88.9%) completed a single IAC course, whereas 4 eyes (11.1%) required a second course after recurrence.
Melphalan and topotecan were used in 47.2% of treated eyes, while a three-drug combination (melphalan, topotecan, and carboplatin) was administered in 44.4%. Melphalan monotherapy was used in 2.7% of eyes.
Intravitreal chemotherapy was used as an adjuvant treatment in 5 eyes (13.9%). No cases required plaque brachytherapy or external beam radiation.
The Kaplan?Meier estimates for overall ocular survival were 94% at one year, 94% at two years, and 89% at five years.
No instances of metastatic disease, extraocular extension, secondary leukemia, or neurological complications were observed during the follow-up period.

Conclusion: Bridge intra-arterial chemotherapy provided effective tumor control in most eyes, achieving an 89% five-year ocular survival rate.

Keywords: RETINOBLASTOMA; DRUG THERAPY; BRIDGE THERAPY

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104. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Matheus Ferreira Santos da Cruz - R3
e-mail: matheusfscruz@gmail.com

Advisor:

CAAE or SEI: 24821819.3.0000.5141

5. ABSTRACT (REQUIRED):

Title: Pseudoretinoblastoma at an ocular oncology referral center in Brazil: epidemiological analysis

Author and Co-authors: Matheus Ferreira Santos da Cruz, Carla D Macedo, Bruno A Miranda, Luiz Fernando Teixeira

Purpose: To determine the types and frequency of ocular conditions that simulate retinoblastoma (pseudoretinoblastoma) in an ocular oncology reference hospital in Brazil.

Methods: This study was a retrospective observational analysis carried out at GRAAC (Grupo de Apoio ao Adolescente e à Criança com Câncer), a tertiary pediatric oncology hospital. It involved 591 patients, referred to the ocular oncology clinic with a suspected diagnosis of retinoblastoma from January 2017 to September 2025. The researchers reviewed patient information regarding age, gender, and presenting signs and symptoms. Each patient underwent thorough a complete ocular examination under general anesthesia. Diagnosis was determined based on clinical observations and the outcomes of diagnostic tests.

Results: Of the 591 patients referred to our tertiary referral hospital, 473 (80%) were diagnosed with retinoblastoma, while 118 (20%) had a pseudoretinoblastoma diagnosis. There were 20 different pseudoretinoblastoma conditions, and the most common included Coats' disease (n = 36; 30.5%), ocular malformation (n = 25; 21,1%), pseudoleukocoria - normal fundus exam (n = 13; 11,0%), ocular toxocariasis (n = 6; 5%), coloboma (n = 6; 5%), medulloepithelioma (n = 5; 4,2%), genetic syndromes (n = 5; 4,2%), retinal Astrocytoma and Choristoma (n = 3; 2,5%), rhegmatogenous retinal detachment (n = 3; 2,5%), cataract (n = 3; 2,5%), lymphoid leukemia (n = 3; 2,5%), melanocytic nevus and choroidal melanoma (n = 3; 2,5%), Tuberous sclerosis (n = 2; 1,6%), Retinopathy of Prematurity (n = 2; 1,6%), persistent fetal vasculature (n = 1; 0.8%) and Persistent Vitreous Pigmentation (n = 1; 0.8%).

Conclusion: Pseudoretinoblastoma spectrum encompasses different diseases. One hundred and eighteen of 591 were PSRB conditions and the 3 most common causes in our study include Coats' disease, ocular malformation and pseudoleukocoria.

Keywords: Retinoblastoma, Pseudoretinoblastoma, Oncology

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Purpose
Methods
Results,
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Poster guidelines:
90cm x 120cm

105. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Rafael Torres Santos - R4
e-mail: torresdrrafael@gmail.com

CAAE or SEI: 3800063042019

5. ABSTRACT (REQUIRED):

Title: Machine learning classification of corneoconjunctival lesions based on AS-OCT biomarkers

Author and Co-authors: Rafael Torres dos Santos, Camile Fagundes Freitas de Tonin, Norma Allemann

Purpose: To validate a machine learning classification model, derived from a classification tree, that correlates anterior segment optical coherence tomography (AS-OCT) biomarkers to histopathological diagnoses of corneo-conjunctival lesions.

Methods: To test a classification and regression tree (CART) based on AS-OCT biomarkers in 25 corneo-conjunctival lesions submitted to biopsy and presenting a histopathological analysis. UNIFESP Ethics Committee approval under number 0380.0063.04/2019 AS-OCT biomarkers had to be inserted in the calculator, in order to test the presumptive diagnosis and this was compared with the histopathology diagnosis.

Results: The classification model demonstrated effectiveness in differentiating prevalent corneoconjunctival pathologies in the sample, supporting the generation of presumptive diagnoses based on AS-OCT images. For squamous cell carcinoma (n=11 eyes), the AS-OCT images consistently revealed predominantly hyper-reflective lesions with heterogeneous architecture, often showing evidence of invasion and affecting both tissue layers or only the epithelial layer. In cases of actinic keratosis (n=3 eyes), the model identified hyper-reflective epithelial thickening, with a generally regular/smooth surface and defined borders, without evidence of invasion. Conjunctival nevus (n=2 eyes) typically presented with conjunctival lesions featuring a regular/smooth surface and defined borders, although they exhibited variability in reflectivity and internal architecture. The application of AS-OCT biomarkers in the classification model allowed for a robust differentiation between these lesion types.

Conclusion: AS-OCT effectively detects structural biomarkers in corneoconjunctival lesions, acting as an ?optical biopsy?. The independently validated classification model of corneoconjunctival lesions based on AS-OCT biomarkers demonstrated high accuracy and reliability in the sample, confirmed by histopathology. This confirms its potential as a valuable machine learning-based diagnostic support tool in ocular oncology, allowing better diagnostic precision even for non-specialists and thus optimizing management.

Keywords: Optical Coherence Tomography, Ocular Surface Lesions, Classification Tree, Ocular Oncology, Ophthalmology, Machine Learning.

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Poster guidelines:
90cm x 120cm

106. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: André Moreira D'angelis - R1
e-mail: andre.dangelis@hotmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: A Rare Case of Sympathetic Ophthalmia in a Child Following Playtime Ocular Trauma

Author and Co-authors: André Moreira D?Angelis, Lucas Henrique Pereira, Carlos Eduardo de Souza, Luciana Finamor
Purpose: To describe a rare case of Sympathetic ophthalmia (SO) in a 7-year-old boy following penetrating ocular trauma during playtime, emphasizing early onset of disease, ocular and systemic symptoms, therapeutic management, and the importance of preventive awareness regarding childhood eye injuries.
Methods: Retrospective and descriptive report of consultations, examinations, and surgical interventions performed between December 2024 and October 2025.
Results: A previously healthy 7-year-old boy sustained a corneoscleral laceration of the right eye (OD) after being struck by a stone during play with friends. He underwent urgent anterior chamber reconstruction. Postoperatively, OD evolved with pupillary seclusion and traumatic cataract, with visual acuity reduced to hand movements. Approximately four weeks after the trauma, the patient developed decreased visual acuity in the left eye (OS) associated with nausea and vomiting. Ophthalmic examination revealed anterior chamber flare, a hyperemic and edematous optic disc, vitritis, and serous retinal detachment accompanied by lymphadenopathy. Visual acuity in OS was reduced to hand movements. Based on the clinical picture, sympathetic ophthalmia was diagnosed.
The patient received pulse intravenous corticosteroid therapy for three days, followed by oral corticosteroids. Methotrexate is being introduced as a steroid-sparing agent. During follow-up, OD visual acuity remained between light perception and hand movements, evolving with enophthalmos and aphakia. Imaging demonstrated progressive anatomic disorganization, and further surgical intervention was contraindicated, leading to prosthetic rehabilitation.
OS visual acuity ranged from 20/100 to 20/400, with regressive vitreous inflammation documented on serial B-scan ultrasonography. The patient remains under close follow-up at the Uveitis Service and has been referred for low vision rehabilitation sector.
Conclusion: Sympathetic ophthalmia is a rare, bilateral granulomatous panuveitis that typically develops after penetrating ocular trauma or intraocular surgery. While the latency period may vary from days to years, most cases occur within the first year after injury. This case illustrates an early-onset presentation in a child, which is particularly uncommon. In the acute phase, patients may also present with systemic symptoms such as nausea, vomiting, and signs of meningism, reflecting the inflammatory involvement of the meninges and posterior segment. This reinforces the need for a high index of suspicion when ocular and systemic symptoms coexist after ocular trauma. Early diagnosis and prompt initiation of immunosuppressive therapy?starting with systemic corticosteroids and adding steroid-sparing agents when indicated?are essential to control inflammation and preserve vision in the sympathizing eye. This case also underscores the importance of raising awareness among families regarding the risks of ocular trauma during childhood play. Prevention, through education and safety measures, remains a key strategy to avoid devastating complications. Despite the poor visual prognosis of the traumatized eye, timely recognition of SO allowed for stabilization of inflammation and functional preservation of the fellow eye. Multidisciplinary care and clear communication with families were fundamental components of successful management.
Keywords: Ocular Trauma; Sympathetic Ophthalmia; Multidisciplinary management

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107. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Gustavo Garcia Agra Naufal - R1
e-mail: gunaufal@hotmail.com

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Cytomegalovirus Retinitis unrelated to HIV: Two Case Reports

Author and Co-authors: Dr. Gustavo Garcia Agra Naufal
Dr. Lucas Henrique Pereira
Dra. Monica Rinkevicius
Dr. André Doi
Dr. Carlos Eduardo de Souza
Dra. Cristina Muccioli
Dr. Rubens Belfort Junior
Dra. Luciana Peixoto Finamor

Purpose: Cytomegalovirus (CMV) retinitis is a severe opportunistic infection that may cause irreversible visual loss. Although more commonly observed in patients with HIV/AIDS, it has been increasingly reported among individuals with other causes of immunosuppression, including malignant lymphoproliferative diseases and post-transplant states. This report aims to describe two oncologic patients with atypical presentations of CMV retinitis, emphasizing diagnostic challenges and management strategies

Methods: The patient medical record was reviewed

Results: Case 1: A 34-year-old woman with newly diagnosed T-cell non-Hodgkin lymphoma presented with bilateral visual loss after prolonged corticosteroid therapy. The initial diagnosis elsewhere was vasculitis secondary to Epstein?Barr virus, based on an isolated positive IgM result. Ophthalmologic examination revealed bilateral frosted branch angiitis and retinal detachment. Serum CMV PCR showed a viral load of 31,100 IU/mL, and vitreous PCR confirmed CMV infection. She received intravenous and intravitreal ganciclovir, showing partial visual recovery (20/150 in the left eye) and viral clearance.
Case 2: A female patient 18 days post?hematopoietic stem cell transplantation for acute myeloid leukemia developed painless decreased vision in the right eye. Fundoscopy revealed a fluffy white retinal lesion with vascular sheathing. The initial working diagnosis was fungal endophthalmitis. Systemic and intraocular workup was negative for fungi, and aqueous humor PCR confirmed CMV infection. She improved with systemic antiviral therapy coordinated between ophthalmology and hematology teams.

Conclusion: CMV retinitis should be promptly considered in patients with malignant lymphoproliferative diseases or post-transplant status who present with new-onset visual symptoms, even in the absence of systemic findings. Early diagnosis and multidisciplinary care are critical to optimizing visual outcomes.

Keywords: Cytomegalovirus retinitis; Posterior segment infection; Retinal inflammation

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108. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Luana Cabral Leão Leal - R1
e-mail: luana.cabral@unifesp.br

CAAE or SEI: 00000000.0.0000.0001

5. ABSTRACT (REQUIRED):

Title: Migratory Retinitis: A Clue to DUSN

Author and Co-authors: Luana Cabral Leão Leal, Lucas Henrique Pereira, José Levi Tavares Cavalcante, Carlos Eduardo de Souza, Luciana Peixoto Finamor

Purpose: To report a case of Diffuse Unilateral Subacute Neuroretinitis (DUSN) initially misdiagnosed as autoimmune uveitis, highlighting the role of migratory retinitis lesions and outer retinal changes as key diagnostic clues.

Methods: Retrospective review of medical records, multimodal imaging, and clinical evolution.

Results: A 33-year-old woman with a previous diagnosis of Behçet?s disease (2013) presented with decreased visual acuity in her left eye for 10 days following a viral prodrome. Fundus examination and multimodal imaging showed subtle inflammatory changes, leading to an initial diagnosis of atypical active Behçet?s disease. Systemic corticosteroid therapy (prednisone 70 mg/day) was initiated, followed by adalimumab due to partial improvement.

Over subsequent months, visual acuity continued to decline despite immunosuppressive therapy. Serial multimodal imaging revealed migratory retinitis lesions and progressive outer retinal layer disruption on OCT. The refractoriness to treatment prompted diagnostic reassessment, and the constellation of unilateral involvement, migratory lesions, and outer retinal changes led to the diagnosis of DUSN. Corticosteroids were tapered, and albendazole (400 mg/day for 30 days) was introduced. Although visual recovery was not achieved, inflammatory activity stabilized.

Conclusion: DUSN is a parasitic infection caused by the subretinal migration of nematode larvae, such as Ancylostoma caninum in South America and Baylisascaris procyonis in North America. The disease typically affects young individuals, presents unilaterally, and evolves insidiously, leading to progressive retinal damage and potential irreversible vision loss if not recognized early.

This case underscores the importance of considering DUSN in the differential diagnosis of unilateral uveitis, especially when migratory retinal lesions and outer retinal abnormalities on OCT are present and when there is lack of response to immunosuppressive therapy. Early identification and targeted therapy ? ideally laser photocoagulation of the larva when visible, combined with antiparasitic treatment ? are essential to prevent irreversible damage.

Keywords: DUSN, Migratory Retinitis, nematode larvae

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Poster guidelines:
90cm x 120cm

109. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Wakana Masu - R2
e-mail: wakanamasu@gmail.com

CAAE or SEI: 945294

5. ABSTRACT (REQUIRED):

Title: CHOROIDAL NODULES IN A TERTIARY EYE CARE CENTER IN BRAZIL: WHAT?S BEHIND THEM?

Author and Co-authors: Wakana Masu, Guilherme Macedo Souza, Carlos Eduardo de Souza,Cristina Muccioli, Luciana Peixoto Finamor

Purpose: To describe four cases of choroidal nodules in patients with positive Tuberculin Skin Test (TST, Mantoux test) and discuss the hypothesis that higher TST induration may correlate with a higher bacillary burden, suggesting a bacillary rather than purely immune-mediated mechanism.

Methods: Case series.

Results: Choroidal nodules may occur in infectious, inflammatory, and neoplastic diseases. We report four patients presenting posterior uveitis with elevated, yellowish choroidal nodules and strongly positive TST results, ranging from 18 to 45 mm (mean 30 mm).
All patients underwent systemic evaluation to exclude alternative infectious or inflammatory etiologies. Given the high prevalence of tuberculose in Brazil (39.8 cases per 100,000 inhabitants in 2023, with approximately 30% of Latin American TB cases occurring in the country), the clinical?epidemiological correlation strongly supported ocular tuberculosis.
In our cohort, after excluding other possible causes, the presentation was highly suggestive of choroidal granulomas secondary to tuberculosis. We hypothesize that higher TST induration reflects greater bacillary burden, consistent with literature suggesting that choroidal granulomas are more commonly associated with bacillary forms of the disease rather than purely immune-mediated hypersensitivity. Recognizing this pattern allows for early initiation of treatment and better visual outcomes.
All patients received standard RHZE therapy (rifampin, isoniazid, pyrazinamide, ethambutol), resulting in regression of the lesions and final best-corrected visual acuity better than 20/60 in all cases.

Conclusion: In TB-endemic regions, strongly positive TST associated with choroidal nodules should raise suspicion for ocular tuberculosis. Prompt diagnosis and treatment can lead to good visual prognosis. Further studies correlating TST magnitude, microbiological confirmation, and imaging findings may help refine diagnostic strategies.

Keywords: Tuberculosis,choroidal nodules,uveitis

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110. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Lucas Henrique Pereira - R4
e-mail: lhpereira30@gmail.com

CAAE or SEI: 88695025.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Uveitis and Other Ocular Manifestations in Patients with Cutaneous Vitiligo at a Tertiary Referral Center

Author and Co-authors: Lucas Henrique Pereira, Caio Vinicius Saito Regatieri , Nilva Simeren Bueno Moraes, Anamaria da Silva Facina , Luiz Fernando Teixeira, Guilherme Macedo Souza , Bruno Massih de Oliveira , Júlia Penha Maróstica, Gustavo Gabriel Zonaro, Sérgio Nakamura Júnio

Purpose: Vitiligo, beyond its cutaneous manifestation, may reflect a systemic autoimmune process with possible ocular involvement. Evidence suggests that the immune response directed against melanocytes can also affect the uveal tract and the retinal pigment epithelium , favoring the development of uveitis. Thus, this study aims to investigate the frequency and patterns of uveitis and other ocular changes associated with vitiligo, seeking to correlate the degree of cutaneous involvement with ophthalmological findings and to reinforce the importance of systematic ocular screening in these patients.

Methods: A cross-sectional observational study will be conducted involving patients with mucocutaneous vitiligo followed at the Dermatology Department of the Federal University of São Paulo (UNIFESP). Participants will undergo a comprehensive ophthalmological examination, in addition to the application of specific questionnaires to assess ocular symptoms and the extent of skin involvement Patients who present findings suggestive of uveal inflammation will be referred to the Uveitis Sector of the Department of Ophthalmology for complementary evaluation and follow-up.

Results: The study is currently in the screening and patient inclusion phase, with data collection still in progress.

Conclusion: This study intends to expand the understanding of the interface between vitiligo and uveal inflammation, evaluating the frequency and patterns of ocular involvement in this population. Characterizing these manifestations, particularly subclinical uveitis, may support the recommendation for systematic ophthalmologic evaluation in patients with vitiligo. It is expected that the results will contribute to early diagnosis and integrated dermatologic-ophthalmologic management, helping to prevent potential visual damage resulting from unrecognized ocular inflammation.

Keywords: Vitiligo, Uveitis

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111. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Clara Elisa Castro - Fellow
e-mail: claracastro.doc@gmail.com

CAAE or SEI: 91362525.4.0000.5505

5. ABSTRACT (REQUIRED):

Title: Correlation Between Aqueous Humor Biomarkers and AI-Derived OCT Features in Diabetic Macular Edema Treated With Anti-VEGF

Author and Co-authors: Clara Elisa Castro

Purpose: To investigate the relationship between angiogenic and inflammatory aqueous humor biomarkers and structural optical coherence tomography (OCT) biomarkers identified by artificial intelligence (AI) in patients with diabetic macular edema (DME) undergoing anti-VEGF therapy. The study aims to determine whether specific biochemical and imaging profiles can predict treatment response and support precision-based management of DME.

Methods: This is a prospective, interventional, longitudinal, single-center study including adults (?18 years) with type 1 or 2 diabetes and center-involving DME. Participants receive three monthly intravitreal injections of bevacizumab followed by a treat-and-extend regimen. Aqueous humor samples are collected before the first injection and after six months to quantify VEGF-A, PlGF, ICAM-1, MCP-1, Ang-2, IL-6, and IL-8 using multiplex immunoassay. OCT scans (Spectralis®, Heidelberg) are performed at baseline and at 1, 3, 6, and 12 months and analyzed using a deep learning algorithm to identify morphological biomarkers including intraretinal cystoid spaces, disorganization of the retinal inner layers (DRIL), hyperreflective foci (HRF), integrity of the ellipsoid zone (EZ) and external limiting membrane (ELM), and subretinal fluid. Visual acuity, central retinal thickness (CST), and cytokine levels are correlated using non-parametric tests, and predictive modeling is explored with logistic regression. Treatment response is defined as a ?0.2 logMAR gain in best-corrected visual acuity and/or ?10% CST reduction at six months.

Results: Higher baseline inflammatory cytokine levels are expected to associate with increased retinal disorganization and suboptimal functional response to anti-VEGF therapy. AI-based OCT analysis may reveal image-derived biomarkers that correspond to biochemical inflammatory profiles, improving prediction of treatment outcomes.

Conclusion: Integrating aqueous humor biomarker quantification with AI-assisted OCT metrics may refine prognostic evaluation and foster a personalized approach to DME therapy, advancing precision medicine in retinal vascular disease.

Keywords: Diabetic macular edema; aqueous humor; biomarkers; anti-VEGF therapy; artificial intelligence; optical coherence tomography; deep learning; predictive modeling.

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112. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Hugo Castelo Branco Felix de Andrade - Fellow
e-mail: hugocbfa@gmail.com

CAAE or SEI: 87901925.5.0000.5505

5. ABSTRACT (REQUIRED):

Title: Effect of Aerobic Exercise on Macular Vascular Density Measured by Optical Coherence Tomography Angiography (OCT-A)

Author and Co-authors: Hugo Castelo Branco Felix de Andrade; Beatriz Stauber Araújo; Juan Fulgencio Welko Mendoza; Rodrigo Cozar Silva; Jonathan Luiz Igreja; Thiago Yuzo Hazuma; Murilo Jordão Pires da Silva; Gustavo Vieira Lima dos Santos; Glauco Sérgio Avelino de Aquino; Filip

Purpose: To evaluate the effect of a single session of acute aerobic exercise on the macular vascular density of the superficial and deep capillary plexuses in healthy individuals.

Methods: This prospective study included 16 healthy participants with best-corrected visual acuity of 20/20. Macular vascular density was measured using the Topcon Triton OCT-A device before and immediately after an aerobic exercise session on a treadmill. The exercise protocol was designed to reach a target of 70% of the maximum predicted heart rate for each participant. Data from both eyes were collected, analyzing five macular regions: foveal, temporal, superior, nasal, and inferior. Statistical analysis was performed using a paired t-test to compare pre- and post-exercise measurements. A p-value of less than 0.05 was considered statistically significant.

Results: Data from 32 eyes of 16 participants were analyzed. The paired t-test analysis revealed no statistically significant changes in vascular density in any of the five macular regions (foveal, temporal, superior, nasal, and inferior) for either the right eye or the left eye following the aerobic exercise session.

Conclusion: A single session of acute aerobic exercise, targeting 70% of the maximum heart rate, did not induce statistically significant changes in the macular vascular density of the superficial and deep capillary plexuses in this cohort of healthy individuals.

Keywords: Optical Coherence Tomography Angiography, Macular Vascular Density, Aerobic Exercise, Retina, Capillary Plexus.

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Methods
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Poster guidelines:
90cm x 120cm

113. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Juan Fulgencio Welko Mendoza - Fellow
e-mail: juanfwm@gmail.com

CAAE or SEI: 87901925.5.0000.5505

5. ABSTRACT (REQUIRED):

Title: Acute Changes in Peripapillary Microvascular Perfusion Induced by Moderate Aerobic Exercise Assessed With Swept-Source OCT Angiography

Author and Co-authors: Juan Fulgencio Welko Mendoza
Sung Eun Song Watanabe
Rodrigo Cozar Silva
Hugo Castelo Branco Felix de Andrade
Jonathan Luiz Igreja
Thiago Yuzo Hazuma
Beatriz Stauber Araújo
Murilo Jordão Pires da Silva
Gustavo Vieira Lima dos Santos
Glauco Sérgio

Purpose: To evaluate the acute effects of moderate aerobic exercise on peripapillary microvascular perfusion, measured by swept-source optical coherence tomography angiography (SS-OCTA) of the optic nerve head in healthy young adults.

Methods: In this prospective interventional study, 30 healthy volunteers (aged 18?40 years) underwent 15 minutes of treadmill exercise at moderate intensity (15 minutes running on treadmill). OCTA imaging was performed using a swept-source OCT system (Triton, Topcon, Tokyo, Japan; ? = 1,050 nm, 100 kHz) in OCTA mode (4.5 × 4.5 mm) centered on the optic disc. The radial peripapillary capillary (RPC) layer was segmented automatically (ILM to posterior RNFL). Vessel density (VD) and perfusion density (PD) were quantified with IMAGEnet 6 software. Only images with signal ? 7/10 and without motion or segmentation artifacts were included. The elapsed time from exercise cessation to imaging (t_pos, min) was recorded for each participant. Changes (? = post ? pre) were analyzed with linear mixed-effects models adjusted for t_pos (modeled with restricted cubic splines) and axial length. Sensitivity analyses were conducted for t_pos ? 2 and ? 5 minutes.

Results: We expect in preliminary analysis of 20 participants a transient increase in RPC vessel density immediately after exercise, consistent with short-term enhancement of optic nerve head perfusion. No significant changes in signal strength, segmentation accuracy, or ocular perfusion pressure were detected between pre- and post-exercise scans.

Conclusion: Short bouts of moderate aerobic exercise induce a brief, reversible increase in peripapillary microvascular perfusion measurable by SS-OCTA. The rapid normalization within minutes highlights the dynamic autoregulation of optic nerve head circulation. Precise timing of post-exercise imaging is essential for accurate interpretation of ocular perfusion changes. These findings support the use of Triton SS-OCTA 4.5 × 4.5 mm imaging as a reliable, reproducible, and sensitive modality for quantifying physiologic vascular responses in the human eye.

Keywords: Optical coherence tomography angiography; optic nerve head; radial peripapillary capillaries; exercise; ocular blood flow; autoregulation; Triton

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114. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Vanessa Oliveira Almeida Barbieri - PG0
e-mail: vanesabarbieri@terra.com.br

Advisor: Caio Vinicius Saito Regatieri

CAAE or SEI: 50815221.0.0000.0021

5. ABSTRACT (REQUIRED):

Title: Impact of Diabetes and Diabetic Retinopathy on Quality of Life: A Study in an Urban Center in Brazil

Author and Co-authors: Vanessa Oliveira Almeida Barbieri; Gabriel Almeida Barbieri; Pedro Henrique Bahia Araujo; Luciana Ribeiro Bahia; Fernando Korn Malerbi; Caio Vinicius Saito Regatieri.

Purpose: Diabetic retinopathy (DR) is a major microvascular complication of diabetes mellitus, with consequences that extend beyond visual impairment to include reduced productivity, diminished functional capacity, and a decline in overall quality of life. This study aimed to examine the association between the presence and severity of DR and quality of life among individuals with type 1 or type 2 diabetes mellitus, taking into account relevant clinical and social determinants.

Methods: A cross-sectional, population-based study was conducted in Campo Grande, Mato Grosso do Sul, including 600 adults diagnosed with diabetes mellitus, recruited from primary care units (n = 301) and a tertiary hospital (n = 299). DR was classified based on retinal images obtained through digital fundus photography or direct ophthalmologic examination, following the International Clinical Diabetic Retinopathy Severity Scale. Quality of life was assessed using the EuroQol-5D-3L questionnaire and the visual analogue scale (EQ-VAS). Data were collected on sociodemographic characteristics, comorbidities, and productivity loss (medical leave, unemployment, early retirement).

Results: Individuals with proliferative DR and/or diabetic macular edema showed greater impairments in mobility (p = 0.001), self-care (p = 0.017), and usual activities (p

Conclusion: Although EuroQol did not show significant differences in quality-of-life scores, proliferative diabetic retinopathy was associated with greater functional, social, and economic challenges. Depression and anxiety negatively impacted quality of life, highlighting the need for early diagnosis and risk control.

Keywords: Diabetic Retinopathy; Quality of life; Diabetes

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90cm x 120cm

115. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Beatriz Karine Taba Oguido - R1
e-mail: beatrizoguido.med@gmail.com

CAAE or SEI: 84339424.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Impact of Systemic Frailty on Retinal Microstructural Biomarkers in Diabetic Macular Edema

Author and Co-authors: Beatriz Karine Taba Oguido, Leonardo Ajuz do Prado Oliveira, Thiago Terzian Ganadjian, Gabriel Nunes Cavalcanti

Purpose: To analyze the association between systemic frailty, measured by the Modified Frailty Index-11 (mFI-11), and the presence of structural optical coherence tomography (OCT) biomarkers in patients with diabetic macular edema (DME), using a multimodal imaging approach.

Methods: This retrospective observational study included adult patients with diabetic retinopathy and DME who underwent intravitreal anti-VEGF therapy. OCT images acquired before and after the initial loading phase of three injections were analyzed. Multimodal imaging assessment included spectral-domain OCT and, when available, OCT angiography (OCTA).
The following OCT biomarkers were evaluated: central macular thickness (CMT), disorganization of the retinal inner layers (DRIL), presence of hyperreflective foci (HRF), and subfoveal neurosensory detachment (SND). Two masked graders independently assessed all scans.
Frailty was quantified using the mFI-11, calculated from 11 systemic clinical variables. Patients were stratified into low-, moderate-, and high-frailty groups. The prevalence and evolution of OCT biomarkers between baseline and post-treatment scans were compared among frailty groups. Statistical analyses included ANOVA and chi-square tests for categorical variables, and linear regression to assess associations between mFI-11 score and OCT structural parameters. A p-value

Results: Results and imaging analyses are still ongoing.

Conclusion: It is expected that higher frailty scores will correlate with a greater prevalence of inflammatory and degenerative OCT biomarkers?such as DRIL, HRF, and subfoveal detachment?suggesting a systemic-ocular link between physiological frailty and retinal microstructural alterations. Identifying these correlations may improve understanding of DME pathophysiology and support the integration of frailty assessment in imaging-based clinical decision-making.

Keywords: Diabetic macular edema, Modified Frailty Index, optical coherence tomography, biomarkers, anti-VEGF therapy.

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116. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Rebeca Azevedo Souza Amaral - R1
e-mail: rebeca.azsouza@gmail.com

CAAE or SEI: 49487921.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Expanding the clinical and genetic spectrum of RHO associated retinitis pigmentosa

Author and Co-authors: Rebeca A. S. Amaral, Olivia A. Zin, Rosane G. Resende, Debora N. Moraes, Mariana V. Salles, Gabriela D. Rodrigues, Fabiana L. Motta, Juliana M. F. Sallum

Purpose: This retrospective report explores the molecular mechanisms, and phenotype spectrum for RHO-associated RP in the Brazilian population.

Methods: Patients with molecular conformation with pathogenic variants in RHO gene were included. Clinical and genetic data were analyzed. Segregation analyses were included when possible.

Results: Medical records of 42 patients from 33 families with RHO-associated RP who visited 4 different centers in Brazil were reviewed. We concluded 22 disease causing variants in RHO and among them 4 were novel unreported variants and identified in 3 unrelated families (c.317G>T; c.937-2A>T; c.272_283del). The majority was missense variant. The most prevalent variant was c.551A>G (p.Gln184Arg).identified in 7 patients (21%) from 4 different families. One patient presented the splice donor variant c.530+1G>C in homozygous state classified as pathogenic. Patients had clinical diagnose of classic RP or sectorial RP with or without cystoid macular edema (CME).

Conclusion: We provide information on the clinical and genetic features of RHO-associated RP in Brazil population and here we expand this first report of the spectrum of RHO gene disease causing variants frequency.

Keywords: retinitis pigmentosa, rhodopsin, inherited retinal dystrophies

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117. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Rodrigo Cozar Silva - R1
e-mail: rodrigo.cozar@unifesp.br

CAAE or SEI: 87901925.5.0000.5505

5. ABSTRACT (REQUIRED):

Title: Study of the influence of aerobic activity on choroidal thickness in different ametropias

Author and Co-authors: Rodrigo Cozar Silva, Juan Fulgencio Welko Mendoza, Hugo Castelo Branco Felix de Andrade, Jonathan Luiz Igreja, Thiago Yuzo Hazuma, Beatriz Stauber Araújo, Murilo Jordão Pires da Silva, Gustavo Vieira Lima dos Santos, Glauco Sérgio Avelino de Aquino, Filip

Purpose: The choroid is a highly vascularized layer of the eye, located between the retina and the sclera. It?s responsible for supplying oxygen and nutrients to the outer retina, as well as removing metabolic waste. The choroid also contributes to thermoregulation of the posterior segment and modulation of intraocular pressure. Structurally, it is part of the uveal tract and consists of several layers, including Bruch?s membrane, the choriocapillaris, and medium and large vascular layers. This project?s main objective is to evaluate structural changes and variations in choroidal thickness (CT) in individuals with different ametropias before and after aerobic activity.

Methods: This interventional study will enroll 50 volunteers aged 18 to 40 years, with baseline intraocular pressure below 21 mmHg and best-corrected visual acuity of 20/20, excluding individuals with significant aerobic activity, ocular surgery, certain medications, systemic or ocular diseases, or inability to exercise. Participants will undergo eye screening, questionnaires, and informed consent. Pre-test instructions include avoiding smoking, heavy exercise, fasting, and alcohol or caffeine. The exercise will consist of 10 minutes on a treadmill at 70% maximum heart rate (calculated by 220 minus age), monitored with cardiac and blood pressure equipment for 24 hours. CT was measured before and after exercise using a Swept Source OCT Triton device, employing the macular pre-set Rescan 3D(H) protocol with Line(H) scans (12.0 x 9.0 mm area, 12.0 mm overlap, 64 scans) to capture high-resolution images of the full retina. CT values for the central foveal circle were obtained using Topcon IMAGEnet 6 software, utilizing the thickness map feature. Measurements were defined as the distance from the automatically drawn line at Bruch?s Membrane to the Choroid Inner Surface.

Results: So far, a total of 28 eyes from 14 participants have been evaluated. The mean choroidal thickness before exercise was 292 ?m (SD 77.86), and after exercise it was 297.5 ?m (SD 79.25). No significant difference was found between the pre- and post-exercise choroidal thickness values.

Conclusion: Based on the current data, no significant change in choroidal thickness was observed immediately after aerobic exercise among the evaluated participants. These preliminary results suggest that, under the studied conditions, moderate aerobic activity does not substantially alter choroidal thickness in healthy adults. Further analysis with a larger sample size may help clarify subtle effects and individual variations.

Keywords: Anaerobic exercise, choroidal thickness, morphological changes, systemic changes

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118. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Cindy Lie Tabuse - R2
e-mail: cindytabuse@gmail.com

CAAE or SEI: 64219922.3.0000.9667

5. ABSTRACT (REQUIRED):

Title: Evaluating Large Language Models for Multimodal Simulated Ophthalmic Decision-Making in Diabetic Retinopathy and Glaucoma Screening

Author and Co-authors: Cindy Lie Tabuse, David Restepo, Carolina Gracitelli, Fernando Korn Malerbi, Caio Regatieri, Luis Filipe Nakayama

Purpose: To assess the performance of GPT-4 in interpreting structured textual descriptions of retinal fundus photographs for diabetic retinopathy (DR) and glaucoma screening, and to examine whether the addition of real or synthetic clinical metadata influences its outputs.

Methods: Design: Retrospective diagnostic validation study.
Setting: Research conducted using a publicly available, annotated dataset of retinal fundus images and corresponding structured textual descriptions.
Participants: Three hundred annotated fundus images were included. Each image was paired with a structured description derived from its features. No direct patient involvement occurred.
Exposures: Model prompts included image descriptions alone or supplemented with either real or synthetic patient metadata. GPT-4 was asked to assign an International Clinical Diabetic Retinopathy (ICDR) severity score, determine referral necessity for DR, and estimate the cup-to-disc ratio for glaucoma referral.
Main Outcomes and Measures: Performance was evaluated using accuracy, macro and weighted F1 scores, and Cohen?s kappa. The impact of metadata inclusion was assessed with McNemar?s test and change rate analysis

Results: GPT-4 demonstrated moderate performance for ICDR severity classification, with an accuracy of 67.5%, macro F1 score of 0.33, weighted F1 score of 0.67, and Cohen?s kappa of 0.25. The correct identification of normal cases largely drove performance. When reframed as a binary referral task for DR, performance improved (accuracy 82.3%, F1 score 0.54, kappa 0.44). In contrast, performance for glaucoma referral was poor across all conditions (accuracy of 78%, F1 score

Conclusion: GPT-4 can simulate basic ophthalmic decision-making using structured prompts but lacks precision in complex tasks like glaucoma screening or fine-grained DR grading. Predictions rely primarily on textual image descriptions rather than metadata. While not clinically reliable, LLMs may assist in educational, documentation, or annotation tasks in ophthalmology.

Keywords: Diabetic Retinopathy, Glaucoma, Large language models, artificial intelligence, Ophthalmology

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119. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Gustavo Gabriel Zonaro - R2
e-mail: zonaro23@gmail.com

CAAE or SEI: 73378423.0.0000.5505

5. ABSTRACT (REQUIRED):

Title: Extensive macular atrophy with pseudodrusen-like appearance (EMAP) ? an OCT study of the foveal area in eyes with preserved visual acuity.

Author and Co-authors: ZONARO, G. G., BENYHE, E. S., PESQUERO, V. O., TIBURCIO, P. O., ALLEMAND, V. C. O. L., WATANABE, S. E. S.

Purpose: The aim of this study is to characterize the OCT findings of the outer retinal layers in the subfoveal region of patients diagnosed with EMAP who maintain normal visual acuity (20/30 or better).

Methods: This is a cross-sectional observational study. A total of 30 individuals diagnosed with EMAP were recruited from the Department of Ophthalmology and Visual Sciences at the Federal University of São Paulo and underwent the procedures described below:
- The patient's clinical history was obtained through an interview with the clinical team.
- Visual acuity for distance and near vision was measured monocularly using the optical correction presented for distance with a backlit ETDRS chart at 4 meters.
- OCT scans were obtained with fourth-generation devices available at the Department of Ophthalmology and Visual Sciences at UNIFESP and the São Paulo Institute of Studies and Research in Ophthalmology (Spectralis-OCT, Triton, and Solix).

Results: A total of 18 eyes from 9 patients were evaluated:
Pseudodrusen-like deposits were the most frequent finding, while RPE disorganization and RPE?Bruch separation occurred in most eyes. The ELM was largely preserved, and the EZ showed variable integrity, from fully intact to partially disrupted. The interdigitation zone was frequently absent, and outer nuclear layer thinning appeared occasionally. In eyes with normal visual acuity (20/20), all outer retinal layers were intact with only mild RPE?Bruch separation. In eyes with lower acuity (20/25?20/30), partial or complete ELM and EZ disruption, RPE disorganization, and thicker Bruch's membrane (BM) were more frequent, reflecting progressive structural damage.

Conclusion: In eyes with preserved visual acuity, early EMAP on OCT is characterized by diffuse ellipsoid zone (EZ) disruption over areas of thickened RPE-BM separation. Thickening of the BM at the fovea may be present even at baseline, while EZ disorganization progresses gradually, preceding later involvement of the external limiting membrane (ELM). Correlating these early structural alterations may provide insights into EMAP pathophysiology and help monitor disease progression while central vision is still preserved.

Keywords: Extensive Macular Atrophy with Pseudodrusen-like Appearance (EMAP); Optical Coherence Tomography (OCT); Ellipsoid Zone (EZ); External Limiting Membrane (ELM); Retinal Pigment Epithelium (RPE); Bruch?s Membrane; Pseudodrusen; Outer Retina; Visual Acuity.

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120. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: José Levi Tavares Cavalcante - R2
e-mail: joselevicavalcante@outlook.com

CAAE or SEI: 66256422.7.0000.0068

5. ABSTRACT (REQUIRED):

Title: Cognitive Performance and the Risk of Diabetic Retinopathy in a Clinical Cohort

Author and Co-authors: CAVALCANTE, J. L. T.; LARRUBIA, D. B.; NOVAES, F.C; MALERBI, F. K.; NAKAYAMA, L. F.; REGATIERI, C. V. S.

Purpose: Cognitive impairment and diabetic retinopathy (DR) are microvascular complications of diabetes mellitus (DM) sharing overlapping pathophysiological mechanisms. This study evaluated whether global cognitive performance, assessed by the Mini-Mental State Examination (MMSE), is independently associated with the presence and severity of DR

Methods: In this cross-sectional study, 949 individuals with diabetes underwent comprehensive ophthalmological and cognitive evaluations. The presence of any DR and severe DR (defined as proliferative DR or diabetic maculopathy) was determined from clinical and imaging records. Cognitive performance was measured by the total MMSE score and its 11 subitems. Logistic regression models were adjusted for age, sex, diabetes duration, HbA1c, BMI, kidney function (CKD-EPI), and systolic blood pressure to predict (1) any DR and (2) severe DR. Model performance was evaluated by the area under the receiver operating characteristic curve (AUC) with cross-validation

Results: Among the 949 participants (mean age 68 ± 11 years; 54% female), 14.0% had any DR and 7.2% had severe DR. The base clinical model achieved an AUC of 0.54 ± 0.07 for any DR and 0.59 ± 0.06 for severe DR. Adding the total MMSE score did not significantly improve model discrimination (?AUC +0.01 and ?0.004, respectively). In the adjusted regression, MMSE was not independently associated with any DR (OR 0.98, 95% CI 0.93?1.03, p=0.37) nor with severe DR (OR 0.96, 95% CI 0.90?1.03, p=0.28). Exploratory analyses of MMSE subdomains did not reach statistical significance; however, items related to attention and delayed recall showed modest trends toward an association with severe DR (AUC ? 0.60, p ? 0.09?0.12)

Conclusion: In this large diabetic cohort, global cognitive performance did not emerge as an independent predictor of the presence or severity of DR after adjustment for established clinical risk factors. Exploratory subdomain analysis suggests that impairments in attention and memory may parallel, but not predict, advanced DR. These findings indicate that cognitive decline and retinal microvascular damage likely represent parallel manifestations of shared systemic pathways rather than a direct causal relationship

Keywords: Diabetic Retinopathy, Cognitive impairment

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121. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Kristian Holanda Nogueira - R2
e-mail: kristian_nogueira@hotmail.com

CAAE or SEI: 33842220.7.0000.5505

5. ABSTRACT (REQUIRED):

Title: Normal Eyes, Hidden Clues: Retinal AI Models Supporting Systemic Diabetes Assessment

Author and Co-authors: NOGUEIRA, K. H.; NAKAYAMA, L.

Purpose: The human retina has long been regarded as the ?window to the soul,? reflecting both ocular and systemic health. Many retinal features are imperceptible to clinicians but can be detected by artificial intelligence (AI), which has demonstrated the ability to infer attributes such as sex, race, and educational level from fundus photographs. Building on this concept, we investigated whether deep visual embeddings extracted from normal retinal images?without visible ophthalmic abnormalities?contain information predictive of systemic diabetes.

Methods: Retinal images without diabetic retinopathy or other pathologies were selected from a labeled fundus dataset. Self-supervised embeddings were generated using two architectures (DINOv3 ViT-S/16 and ConvNeXt-Tiny). Multilayer perceptrons (MLPs), with and without PCA dimensionality reduction (128 components), were trained using patient-level splits to ensure independence. Hyperparameters were optimized through randomized search (AUROC, 3-fold CV). Models were evaluated both uncalibrated and after Platt calibration. Domain effects were analyzed through t-SNE visualization, camera classification, and per-camera metrics, with primary analysis restricted to Canon CR images to minimize device bias.

Results: In Canon CR test data (?20% diabetes prevalence; n=760), the ViT-S/16 model achieved an accuracy of 0.79 and AUROC of 0.80, while ConvNeXt-Tiny reached an accuracy 0.86 and AUROC 0.79. Calibration slightly increased precision and specificity without substantially altering discrimination. t-SNE visualization revealed residual clustering by acquisition device, though this effect was reduced when restricted to a single camera.

Conclusion: Deep representations of visually normal fundus images contain patterns moderately associated with systemic diabetes, suggesting that subclinical retinal signatures may reflect systemic metabolic health. Rather than serving as a population screening tool, AI-based retinal analysis could help guide clinicians in recommending systemic evaluation for patients with otherwise normal fundus examinations. This approach underscores the emerging role of oculomics in precision medicine, encouraging further work in interpretability, domain adaptation, and prospective validation to integrate retinal biomarkers into multidisciplinary care pathways.

Keywords: Retina, oculomics, diabetes

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122. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Sérgio Nakamura Junior - R2
e-mail: junior04@unifesp.br

CAAE or SEI: 88695025.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Retinochoroidal Manifestations in Adults with Cutaneous Vitiligo Followed in a Referral Center

Author and Co-authors: Caio Vinicius Saito Regatieri , Nilva Simeren Bueno Moraes, Anamaria da Silva Facina , Luiz Fernando Teixeira, Guilherme Macedo Souza , Bruno Massih de Oliveira , Júlia Penha Maróstica, Gustavo Gabriel Zonaro, Sérgio Nakamura Júnior,

Purpose: This cross-sectional study aims to determine the frequency and spectrum of pigmentary, functional, and structural retinochoroidal changes in adults with cutaneous vitiligo under specialized care. By correlating cutaneous involvement measured by VESplus with posterior pole outcomes, we hypothesize that patients with greater vitiligo extent present a higher frequency of retinal pigment epithelium (RPE) alterations and functional impairment detectable on multimodal imaging.

Methods: A total of 65 adults (?18 years) with mucocutaneous vitiligo will be recruited at the Vitiligo and Phototherapy Clinic of the Dermatology Department, EPM?UNIFESP. Participants will undergo a complete ophthalmic evaluation including periocular inspection, best-corrected visual acuity, slit-lamp biomicroscopy, applanation tonometry, gonioscopy, and fundus examination. Multimodal posterior pole imaging will be performed with OCT (Spectral-Domain and Swept-Source), wide-field fundus photography, infrared, and autofluorescence imaging (Optovue iScan80, Zeiss CLARUS 700, Topcon Triton, iCare EIDON), along with optical biometry (Alcon ARGOS). Standardized periocular photographs will be obtained for correlation analysis. Cutaneous extension and repigmentation will be quantified using the VESplus score. Statistical methods include descriptive analysis, Chi-square/Fisher tests, t-test/ANOVA, Pearson correlation, and Kolmogorov?Smirnov normality testing (?=0.05). Ethical approval and informed consent will be obtained in accordance with CNS Resolution 466/12, with anonymized data management.

Results: The study is currently in the screening and patient inclusion phase, with data collection still in progress.

Conclusion: The expected findings include a higher rate of pigmentary and functional retinochoroidal abnormalities in adults with vitiligo, particularly involving the RPE and choroid. Integration of VESplus scoring with retinal multimodal imaging may enable early detection and establish cutaneous?retinal correlations. These insights could support targeted screening of posterior segment changes and promote interdisciplinary collaboration between dermatology and ophthalmology in referral services.

Keywords: retina;vitreous;vitiligo

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123. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Thiago Terzian Ganadjian - R2
e-mail: thiagoterzian@hotmail.com

CAAE or SEI: 84339424.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Analysis of the Impact of Optical Coherence Tomography Biomarkers on the Response to Treatment of Diabetic Macular Edema with Intravitreal Anti-VEGF Injection

Author and Co-authors: Thiago Terzian Ganadjian, Leonardo Ajuz do Prado Oliveira, Gabriel Nunes Cavalcanti, Beatriz Karine Taba Oguido

Purpose: To analyze the impact of optical coherence tomography (OCT) biomarkers on the anatomical and functional response to intravitreal anti-VEGF therapy in patients with diabetic macular edema (DME), and to investigate whether these imaging features can predict treatment outcomes and support personalized therapeutic strategies.

Methods: This retrospective observational study includes adult patients diagnosed with diabetic retinopathy and DME who received three consecutive intravitreal anti-VEGF injections at 4?6-week intervals. Data will be collected from medical records, including demographic characteristics, systemic comorbidities, and ophthalmologic findings. OCT examinations will be performed before treatment and at 1, 3, and 6 months afterward, assessing biomarkers such as central macular thickness (CMT), hyperreflective foci, disorganization of retinal inner layers (DRIL), and subfoveal serous neuroretinal detachment. Best-corrected visual acuity (BCVA) will be measured using the ETDRS chart at each visit. Patients will be classified as responders or non-responders based on changes in CMT and BCVA. Statistical analyses will explore associations between OCT biomarkers and treatment response, adjusting for age, HbA1c levels, and baseline anatomical parameters. A p-value

Results: Data collection and analysis are currently ongoing.

Conclusion: It is expected that specific OCT biomarkers, such as the presence of hyperreflective foci, DRIL, and subfoveal neuroretinal detachment, will correlate with different responses to anti-VEGF therapy. These imaging features may serve as predictive factors for treatment efficacy in DME. Identifying such biomarkers can contribute to more individualized management strategies, improving visual outcomes and guiding therapeutic decisions, particularly for patients at risk of suboptimal response.

Keywords: Diabetic macular edema; Anti-VEGF; OCT; Biomarkers;

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124. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Leonardo Ajuz do Prado Oliveira - R3
e-mail: leonardoajuz.6066@gmail.com

CAAE or SEI: 84339424.3.0000.5505

5. ABSTRACT (REQUIRED):

Title: Correlation Between Frailty Score (mFI-11) and Anatomical and Functional Response to Anti-VEGF Therapy in Diabetic Macular Edema

Author and Co-authors: Leonardo Ajuz do Prado Oliveira, Gabriel Nunes Cavalcanti, Thiago Terzian Ganadjian, Beatriz Karine Taba Oguido, Caio Vinicius Saito Regatieri

Purpose: To evaluate the relationship between the Modified Frailty Index-11 (mFI-11) and the anatomical and functional response to intravitreal anti-VEGF therapy in patients with diabetic macular edema (DME).

Methods: This retrospective observational study included adult patients diagnosed with diabetic retinopathy and DME who underwent three consecutive intravitreal injections of anti-VEGF agents at 4?6-week intervals. Data were collected from medical records, including demographic characteristics, systemic comorbidities, and ophthalmologic findings. Best-corrected visual acuity (BCVA) was measured using the ETDRS chart at baseline, 1, 3, and 6 months. Spectral-domain optical coherence tomography (OCT) was used to measure central macular thickness (CMT).
Frailty was assessed using the mFI-11 score, which encompasses 11 clinical variables representing physiological vulnerability. Patients were categorized as responders or non-responders based on improvement in BCVA and reduction in CMT after treatment. Statistical analyses will include correlation tests and multivariate regression models to assess the association between mFI-11 scores and treatment outcomes, controlling for age, HbA1c levels, and baseline OCT parameters. A p-value

Results: Results and examinations are still ongoing.

Conclusion: It is expected that patients with higher mFI-11 scores, indicating greater systemic frailty, will demonstrate a poorer anatomical and visual response to anti-VEGF therapy. These findings may suggest that systemic frailty contributes to diminished therapeutic efficacy in DME. Understanding this relationship could support more personalized treatment strategies and improve outcomes in frail or elderly diabetic patients.

Keywords: Diabetic macular edema, Anti-VEGF therapy, frailty

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125. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Iago Diógenes Azevedo Costa - R4
e-mail: iagoazevedo07@gmail.com

CAAE or SEI: 6982020

5. ABSTRACT (REQUIRED):

Title: Impact of Mydriasis on Image Gradability and Automated Diabetic Retinopathy Screening with a Handheld Camera in Real-World Settings

Author and Co-authors: Iago Diogenes, David Restrepo, Lucas Zago Ribeiro, Andre Kenzo Aragaki, Fernando Korn Malerbi, Caio Saito Regatieri, Luis Filipe Nakayama

Purpose: Diabetic retinopathy (DR) screening in low- and middle-income countries (LMICs) faces challenges due to limited access to specialized care. Portable retinal cameras provide a practical alternative, but image quality, influenced by mydriasis, affects artificial intelligence (AI) model performance. This study examines the role of mydriasis in improving image quality and AI-based DR detection in resource-limited settings.

Methods: We compared the proportion of gradable images between mydriatic and non-mydriatic groups and used logistic regression to identify factors influencing image gradability, including age, gender, race, diabetes duration, and systemic hypertension. A ResNet-200d algorithm was trained on the mBRSET dataset and validated on mydriatic and non-mydriatic images. Performance metrics, such as accuracy, F1 score, and AUC, were evaluated.

Results: The mydriatic group had a higher proportion of gradable images (82.1% vs. 55.6%, P

Conclusion: Mydriasis improves image gradability and enhances AI model performance in DR screening. However, optimizing AI for non-mydriatic imaging is critical for LMICs where mydriatic agents may be unavailable. Refining AI models for consistent performance across imaging conditions is essential to support the broader implementation of AI-driven DR screening in resource-constrained settings.

Keywords: Retinopathy Screening; Artificial Intelligence

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126. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Joao Gabriel Alexander - R4
e-mail: jgalexander53@gmail.com

CAAE or SEI: 63654022.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: MICROPERIMETRIC EVALUATION OF TREATMENT OF CHRONIC CENTRAL SEROUS CHORIORETINOPATHY WITH TWO MICROPULSED LASER STRATEGIES

Author and Co-authors: João Gabriel Alexander, Pedro Leite Costa Franco, Luiz Roisman, Maurício Maia

Purpose: The objective of this study is to compare two micropulse laser treatment strategies, analyzing microperimetric results, pre and post treatment, in chronic cases of central serous chorioretinopathy (CSC).

Methods: This study is in progress. A prospective, masked, controlled and randomized study in a sample of approximately 30 patients. All laser sessions will be administered by a researcher who will not monitor or perform exams on patients during the study period. A 1:1 randomization will be applied. Inclusion criteria: patients with chronic CSC defined as symptoms of the disease for more than 3 months. Age between 20 and 60 years old. Exclusion criteria: patients with any previous treatment for CSC in the last 3 months, patients using corticosteroids and presence of subretinal neovascularization. Each patient will be followed for 6 months, with assessments at the end of the 1st, 3rd and 6th months after treatment. Macular sensitivity measured by microperimetry will be evaluated before treatment and during post-laser follow-up. Differences between quantitative variables will be analyzed using the Mann-Whitney test. The difference will be considered statistically significant when p

Results: In progress.

Conclusion: There are no studies in the literature comparing two strategies of micropulsed laser. The objective of this study, is, therefore, to compare the effectiveness of two micropulse laser treatment strategies already described in the literature, by measuring macular sensitivity with microperimetry.

Keywords: Central serous chorioretinopathy; micropulsed laser; microperimetry

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127. FIRST (PRESENTING) AUTHOR (REQUIRED):

Name: Pedro Leite Costa Franco - R4
e-mail: pedro.lcf@gmail.com

CAAE or SEI: 63654022.6.0000.5505

5. ABSTRACT (REQUIRED):

Title: Choroidal Thickness and Its Impact on Micropulse Laser Outcomes in Chronic Central Serous Chorioretinopathy

Author and Co-authors: Pedro Leite Costa Franco, João Gabriel Alexander, Luiz Roisman, Maurício Maia

Purpose: The objective of this study is to compare two micropulse laser treatment strategies, analyzing choroidal thickness pre and post treatment, in chronic cases of central serous chorioretinopathy (CSC). Additionally, it seeks to assess the differences in choroidal thickness variation between cases that responded favorably to treatment and those that did not.

Methods: This ongoing study is a prospective, randomized, controlled, and masked trial involving approximately 30 patients. Laser treatment sessions will be conducted by a researcher who will not be involved in monitoring or performing patient assessments during the study period. Patients will be randomly assigned to treatment groups using a 1:1 randomization ratio.
Inclusion criteria include patients aged 20 to 60 years with chronic central serous chorioretinopathy (CSC), defined as symptoms persisting for over 3 months.
Exclusion criteria include patients who have undergone any treatment for CSC in the past 3 months, those currently using corticosteroids, and individuals with subretinal neovascularization.
Each patient will be followed for 6 months, with evaluations at 1, 3, and 6 months post-treatment. Choroidal thickness measurements will be recorded prior to treatment and during follow-up. Statistical analysis of quantitative variables will be performed using the Mann-Whitney test, with significance set at p

Results: In progress.

Conclusion: We hope, with this study, to further elucidate the relationship between pre- and post-micropulse laser treatment choroidal thickness and treatment outcomes for CSC. By comparing different micropulse laser strategies, the results are expected to provide insights into optimizing therapeutic approaches and understanding the predictive value of choroidal thickness in determining treatment efficacy for chronic CSC.

Keywords: Central serous chorioretinopathy; micropulsed laser; choroidal thickness

aberezovsky@unifesp.br
adrianofaneli@gmail.com
aileenmiwa@gmail.com
amandatwelter@gmail.com
analhofling@gmail.com
andre.dangelis@hotmail.com
andre.h.bando@gmail.com
andrea.oliveira@unifesp.br
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hugocbfa@gmail.com
hugoxavierrochafilho@hotmail.com
iagoazevedo07@gmail.com
ilromero@gmail.com
itala.gatti@unifesp.br
italopo@yahoo.com.br
ivancorso@gmail.com
japgomes13@gmail.com
jgalexander53@gmail.com
joselevicavalcante@outlook.com
juanfwm@gmail.com
juliamaggi27@gmail.com
juliana@pobox.com
junior04@unifesp.br
kristian_nogueira@hotmail.com
ktakagi@rohto.co.jp
l.armandovitorino@gmail.com
laopadilha@gmail.com
larifp1510@gmail.com
laura.caldas@unifesp.br
leonardoajuz.6066@gmail.com
leticiaczanandrea@gmail.com
lhpereira30@gmail.com
lilian.ohk@gmail.com
liviamouraalvares@gmail.com
liviasandis.b@hotmail.com
luana.cabral@unifesp.br
lucaszagoribeiro@gmail.com
lucieneb@uol.com.br
ludmila.nascimento@unifesp.br
luiza.soares@unifesp.br
luizazimm@gmail.com
luizitocruz@gmail.com
luizlima9@gmail.com
marcus.guerreiro@unifesp.br
marcussipr@hotmail.com
marianabbd@gmail.com
marianachibaikeda@gmail.com
martinsrocha@gmail.com
mateusarruda025@gmail.com
matheusfscruz@gmail.com
matosfernanda00@gmail.com
mauricio160697@gmail.com
maurogobira19@gmail.com
mefarah@uol.com.br
mello.mariana@unifesp.br
miguel.burnier@mcgill.ca
mscampos@uol.com.br
nakayama.luis@unifesp.br
norma.allemann@pobox.com
olivia.zin@unifesp.br
palloma48santiago@gmail.com
paula.alhadeff@unifesp.br
paula.baptista@unifesp.br
pedro.lcf@gmail.com
pedro.nogueira@unifesp.br
pedrofgusmao@hotmail.com
pedrohbronzatto@gmail.com
pfukuiumeta3@gmail.com
pschor@pobox.com
psicoceciliavasconcellos@gmail.com
rafaelmqbarbosa@gmail.com
rafaelsilveira200199@gmail.com
raphael.barcelos@unifesp.br
rdchagas@gmail.com
rebeca.azsouza@gmail.com
renatoleca@terra.com.br
retina@femanet.com.br
rodrigo.cozar@unifesp.br
samico.gustavo@gmail.com
ssalomao@unifesp.br
stechoi91@hotmail.com
sylvia.maria@unifesp.br
taisestrela@hotmail.com
tammyosaki@gmail.com
thiagoterzian@hotmail.com
tiagorassi@gmail.com
torresdrrafael@gmail.com
tprata0807@gmail.com
tulioeschiapati@gmail.com
ugortf@hotmail.com
vanesabarbieri@terra.com.br
vanessa.favero@gmail.com
vilarinhogilvan@gmail.com
vinesouza70@gmail.com
vitordiasgomesbm@gmail.com
vivian_cris@yahoo.com.br
wakanamasu@gmail.com
wchamon@pobox.com
wnose@me.com
yandelych@gmail.com
zonaro23@gmail.com