



# 19<sup>th</sup> RESEARCH DAYS

📅 DECEMBER, 7 - 8 | 2017



## POSTGRADUATE PROGRAM IN OPHTHALMOLOGY & VISUAL SCIENCES

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Organization



Sponsor





The meeting Research Days has been held annually since 1999 with the goals of motivating and improving the scientific achievements of the Postgraduate Studies Program on Ophthalmology and Visual Sciences of the Paulista School of Medicine, São Paulo Hospital, and the Federal University of São Paulo (UNIFESP).

Research Days includes presentation of all research developed by residents, fellows, and postgraduate students in the Postgraduate Studies Program on Ophthalmology and Visual Sciences. The entire meeting, including presentation of papers, posters and the discussions, are conducted in English.

The scientific studies at each educational level (resident, fellow, and postgraduate) that are judged to be the best receive an award.

Active discussions by the faculty and renowned invited researchers are highly encouraged during the entire Research Days meeting.

Registration is free and open to all Postgraduate programs in Brazil and Latin America. We consider the presentations delivered by our team of students at Research Days as the first step to preparing them to participate in and interact with colleagues at international meetings.

The 19th Research Days of UNIFESP-EPM will be held in São Paulo, December 7-8, 2017, at Marcos Lindenberg Amphitheater, located at 862 Botucatu Street.

Please visit our homepage <http://www.ofthalmounifesp.com.br/pg> for the complete Scientific Program and additional information.

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**Information**  
**Department of Ophthalmology and Visual Science**  
**Federal University of São Paulo - Paulista School of Medicine - São Paulo Hospital**  
**781 Pedro de Toledo Street, 2<sup>st</sup> floor – São Paulo, SP, Brazil**  
**Phone: (+55-11) 5576-4981**  
**e-mail: [pgsecretaria@oftalmo.epm.br](mailto:pgsecretaria@oftalmo.epm.br)**

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## ORGANIZATION

### Postgraduate Program Coordination

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Denise de Freitas

### Program Directors

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Norma Allemann

Denise de Freitas

### Scientific Committee

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Adriana Berezovsky	José Álvaro Pereira Gomes	Norma Allemann
Ana Luisa Hofling de Lima Farah	Juliana Maria Ferraz Sallum	Paulo Augusto de Arruda Mello
Augusto Paranhos Jr.	Lauro Augusto de Oliveira	Paulo Schor
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Cristina Muccioli	Mauricio Maia	Rubens Belfort Jr.
Denise de Freitas	Mauro Silveira de Queiroz	Solange Rios Salomão
Eduardo Büchelle Rodrigues	Campos	Tiago dos Santos Prata
Fábio Ramos de Souza Carvalho	Michel Eid Farah	Wallace Chamon
Ivan Maynard Tavares	Miguel Noel Nascentes Burnier	Walton Nosé

### Oral Presentation Awards Committee

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Luiz Alberto Soares de Melo Júnior

Maurício Maia

José Álvaro Pereira Gomes

### Poster Presentation Awards Committee

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Carolina Pelegrini Barbosa Gracitelli

Linda Christian Carrijo Carvalho

Priscila Cardoso Cristovam Miotto

Sung Eun Song Watanabe

Talita Trevizani Rocchetti

### Invited Speakers

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#### Jean Faber Ferreira de Abreu, MD, PhD

Adjunct Professor, Department of Neurology and Neuroscience  
UNIFESP - Federal University of São Paulo

#### Marcony Santhiago, MD, PhD

Professor, Department of Ophthalmology  
USC – University of South California  
USP – University of São Paulo  
UFRJ – Federal University of Rio de Janeiro

#### Niels Olsen Saraiva Camara, MD, PhD

Department of Immunology - Institute of Biomedical Sciences  
USP - University of São Paulo

#### Romulo Albuquerque, MD, DDS, PhD

Assistant Professor, Department of Ophthalmology & Visual Sciences  
University of Kentucky, USA

### Keynote Speakers

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#### Mauro Campos, MD

Adjunct Professor, Department of Ophthalmology & Visual Sciences  
UNIFESP – Federal University of São Paulo

#### Alessandra Commodaro, PhD

Department of Ophthalmology & Visual Sciences  
UNIFESP – Federal University of São Paulo

#### Rubens Belfort Jr, MD, PhD

Head Professor, Department of Ophthalmology & Visual Sciences  
UNIFESP – Federal University of São Paulo

#### Renato Ambrosio, MD, PhD

Adjunct Professor, Department of Ophthalmology  
UNIRIO - Federal University of Rio de Janeiro

#### Wallace Chamon, MD

Adjunct Professor, Department of Ophthalmology & Visual Sciences  
UNIFESP – Federal University of São Paulo  
UIC- University of Illinois at Chicago

SCIENTIFIC PROGRAM

December 07, 2017 - Thursday

8:00-8:05 AM	OPENING REMARKS	Mauro Campos
8:05-8:10 AM	POSTGRADUATE PROGRAM	Denise de Freitas
8:10-8:15 AM	PROGRAM HEADLINES	Norma Allemann
<b>SESSION 1</b>		
<b>PAPER PRESENTATION</b>		
8:15-9:25 AM	<b>ELECTROPHYSIOLOGY, EPIDEMIOLOGY, LOW VISION, STRABISMUS</b> <b>Moderators: Solange Rios Salomão, Adriana Berezovsky</b>	
8:15-8:22 AM	Visual function in low-grade optic pathway gliomas with and without neurofibromatosis type 1 assessed by transient pattern-reversal visually evoked potentials along childhood	Patrícia de Freitas Dotto PG1
8:25-8:32 AM	Validation of sweep-VEP objective visual acuity measurement in healthy adults	Tarciana de Souza Soares PG1
8:35-8:42 AM	High prevalence of pterygium contributing to vision impairment and blindness in the Brazilian Amazon Region	Arthur Gustavo Fernandes PG1
8:45-8:57 AM	Visual impairment and blindness in very elderly residents of Maués, Amazonas	Claudia Maria Osório Chaves PG1
8:55-9:02 AM	Impact of refractive correction on near visual acuity in older adults from Parintins: The Brazilian Amazon Region Eye Survey (Bares)	Cristina Cardoso Coimbra Cunha PG1
9:05-9:12 AM	A comparison of the Bayley scales of infant and toddler development and grating acuity measured by Teller acuity cards in babies and young children	Ana Carla Ramos Vieira da Costa PG1
9:15-9:22 AM	The use of botulinum toxin to treat infantile esotropia: a systematic review with meta-analysis	Dayane Christine Issaho PG1
9:25-9:45 AM	<b>INVITED LECTURE</b> <b>Title: Eye Care in Remote Areas</b>	<b>Mauro Campos, MD</b> Adjunct Professor, Department of Ophthalmology & Visual Sciences UNIFESP – Federal University of São Paulo
9:45-9:50 AM	<b>Discussion and Interview</b>	
9:50-10:10 AM	<b>INVITED LECTURE</b> <b>Title: PCR in Intraocular Infection</b>	<b>Alessandra Commodaro, PhD</b> Department of Ophthalmology & Visual Sciences UNIFESP – Federal University of São Paulo
10:00-10:20 AM	<b>Discussion and Interview</b>	
10:20-10:40 AM	<b>COFFEE BREAK</b>	
<b>SESSION 2</b>		
<b>PAPER PRESENTATION</b>		
10:40-11:20 AM	<b>UVEITIS</b> <b>Moderators: Cristina Muccioli, Rubens Belfort Jr</b>	
10:40-10:47 AM	Ocular findings in infants with microcephaly associated with presumed Zika virus congenital infection in Salvador, Brazil	Bruno de Paula Freitas PG1
11:00-11:07 AM	Principal results of the research Interferon-Gamma Release Assay (IGRA): Implications for the diagnosis and management of tuberculosis-related ocular inflammation	Yuslay Fernández Zamora PG1
11:20-11:50 AM	<b>INVITED LECTURE</b> <b>Title: Uveitis and Toxoplasmosis: 80 years of experience at Escola Paulista de Medicina. From Moacyr Álvaro to now.</b>	<b>Rubens Belfort Jr, MD, PhD</b> Head Professor, Department of Ophthalmology & Visual Sciences UNIFESP – Federal University of São Paulo

<b>11:50AM-12:00PM</b>	<b>Discussion and Interview</b>		
<b>12:00-1:30 PM</b>	<b>LUNCH BREAK</b>		
<b>SESSION 3</b>	<b>PAPER PRESENTATION</b>		
<b>1:30-2:35 PM</b>	<b>RETINA AND VITREOUS, PHARMACOLOGY, GENETICS</b>		
	<b>Moderators: Maurício Maia, Juliana Sallum, Michel Eid Farah, Caio Regatieri</b>		
1:30-1:37 PM	Investigation of the antiangiogenic effect of intravitreal curcumin in experimental model of proliferative retinopathy	Thais Sousa Mendes	PG0
1:40-1:47 PM	Prospection of new anti-angiogenic drugs based on chemically modified heparins	Vinicius Ferreira Kniggendorf	PG1
1:50-1:57 PM	Anthocyanin analysis in a novel vital dye extracted from the acai fruit ( <i>Euterpe oleracea</i> ) for chromovitrectomy	Cristiane Siqueira Peris	PG1
2:00-2:07 PM	En face doppler OCT measurement of total retinal blood flow in diabetic retinopathy and diabetic macular edema	Eduardo Amorim Novais	PG1
2:10-2:17 PM	The correlation between CRB1 variants and the clinical severity of Brazilian patients with different inherited retinal dystrophy phenotypes	Fabiana Louise Motta	PG1
2:20-2:23 PM	Ocular abnormalities in mice following congenital Zika virus infection	Juliana Moura Bastos Prazeres	PG0
2:25-2:28 PM	PROM1 gene variations in Brazilian patients with macular dystrophy	Mariana Vallim Salles	PG1
<b>2:35-2:55 PM</b>	<b>INVITED LECTURE</b>		
	<b>Title: A new member of the VEGF family of molecules: soluble VEGFR-2</b>	<b>Romulo Albuquerque, MD, DDS, PhD</b>	
		Assistant Professor, Department of Ophthalmology & Visual Sciences University of Kentucky, USA	
<b>2:55-3:00 AM</b>	<b>Discussion and Interview</b>		
<b>3:00-3:40 PM</b>	<b>COFFEE BREAK &amp; POSTERS</b>		
<b>3:00-3:40 PM</b>	<b>POSTER SESSION 1</b>		
	<b>Retina and Vitreous (14), Tumors and Pathology (03), Uveitis (01), Epidemiology (03)</b>		
<b>SESSION 4</b>	<b>PAPER PRESENTATION</b>		
<b>3:40-4:30 PM</b>	<b>RETINA AND VITREOUS, ULTRASOUND</b>		
	<b>Moderators: Michel Eid Farah, Eduardo Büchelle Rodrigues, Norma Allemann</b>		
3:40-3:47 PM	Isolation of <i>Toxoplasma gondii</i> strains in patients with toxoplasmosis	Marisa Lucia Romani Paraboni	PG1
3:50-3:57 PM	Surgical management of macular holes with 3 years of follow-up	Oswaldo Ferreira Moura Brasil	PG1
4:00-4:07 PM	A new dye based on anthocyanins from the acai fruit ( <i>Euterpe Oleracea</i> ) for chromovitrectomy In Humans: results from A phase I trial	Rafael Ramos Caiado	PG1
4:10-4:17 PM	Eye growth and refractive errors in preterm infants	Ricardo Salles Cauduro	PG1
4:20-4:27 PM	Comparison of 577nm multispot versus standard single spot photocoagulation for diabetic retinopathy	Renato Magalhaes Passos	PG1
4:30-4:37 PM	Stem Cell Derived Therapy for Stargardt's Disease: A Phase I Trial	Rodrigo Antonio Brant Fernandes	PG1



4:40-5:00 PM

**INVITED LECTURE**

**Title: 3D retina surgery: imaging choroidal blood flow without contrast**

**Romulo Albuquerque, MD, DDS, PhD**

Assistant Professor, Department of  
Ophthalmology & Visual Sciences  
University of Kentucky, USA

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5:00-5:10 PM

**Discussion and Interview**

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5:10 PM

**END OF SESSION**

SCIENTIFIC PROGRAM

December 08, 2017 - Friday

SESSION 5		PAPER PRESENTATION	
8:00-9:40 AM	<b>GLAUCOMA</b> <b>Moderators: Augusto Paranhos Jr., Paulo Augusto Arruda Mello, Luiz Alberto Soares de Melo Júnior, Ivan Maynard Tavares, Tiago dos Santos Prata</b>		
8:00-8:07 AM	Can intraocular pressure variation parameters distinguish between eyes with stable and progressive glaucoma?	Ana Luiza Bassoli Scoralick Delgado	PG1
8:10-8:17 AM	Evaluation of occipital cortex in glaucoma patients using 3-Tesla magnetic resonance imaging	Carolina P. B. Gracitelli	Post-DOC
8:20-8:27 AM	Subtenon triamcinolone acetate as an adjunctive to mitomycin-enhanced trabeculectomy in primary glaucomas: A randomized clinical trial	Diego Torres Dias	PG0
8:30-8:37 AM	Comparison of vascular characteristics of open angle glaucoma and healthy controls	Elise V. Taniguchi	PG1
8:40-8:47 AM	Nailfold capillaroscopy and laser doppler flowmetry analyses in glaucoma: Comparison of vascular parameters between eyes with high and low-tension optic disc hemorrhage	Izabela Negrao Frota de Almeida	PG1
8:50-8:57 AM	Improvement of reading performance in patients with glaucoma	Koiti Uchida Hamada	PIBIC
9:00-9:07 AM	The association of ocular surface disease with quality of life in patients with glaucoma	Lilian Franca Machado	R3
9:10-9:17 AM	Effect of preoperative use of steroid eyedrops in glaucoma patient and its outcomes after trabeculectomy	Nikoly Tigani Fares	R3
9:40-10:00 AM	<b>COFFEE BREAK</b>		
10:00-10:20 AM	<b>INVITED LECTURE</b> <b>Title: Modeling chronic ocular pain and gaining new insights about neuronal regeneration</b>	<b>Romulo Albuquerque, MD, DDS, PhD</b> Assistant Professor, Department of Ophthalmology & Visual Sciences University of Kentucky, USA	
10:20-10:30 AM	<b>Discussion and Interview</b>		
SESSION 6		PAPER PRESENTATION	
10:30AM-12:30PM	<b>CORNEA AND EXTERNAL DISEASES, LABORATORY</b> <b>Moderators: Ana Luisa Hofling-Lima, Lauro Augusto de Oliveira, Fabio Ramos de Carvalho, Denise de Freitas, Luciene Barbosa de Sousa, José Álvaro Pereira Gomes</b>		
10:30-10:37 AM	Endothelial viability of Descemet stripping endothelial keratoplasty donor grafts prepared by femtosecond laser with endothelial applanation versus automated microkeratome dissection	Aline Silveira Moriyama	PG1
10:40-10:47 AM	Characterization of lacrimal inflammatory mediators in Keratoconus patients.	Gustavo Souza Moura	PG1
10:50-10:57 AM	Reverse smile with a new excimer treated biomaterial: new corneal shaping	Maria Carolina Markezan	PG1
11:00-11:07 AM	Outcomes of secondary penetrating keratoplasty graft failure managed by Descemet membrane endothelial keratoplasty	Nicolas Cesário Pereira	PG1
11:10-11:30 AM	<b>INVITED LECTURE</b> <b>Title: Immunometabolism: a new perspective of therapy</b>	<b>Niels Olsen Saraiva Camara, MD</b> Department of Immunology - Institute of Biomedical Sciences USP - University of São Paulo	
11:30-11:40 AM	<b>Discussion and Interview</b>		
11:40-11:47 AM	Corneal analysis and life quality in individuals with mild	Pablo Felipe Rodrigues	PG1



	keratoconus submitted to sequential or simultaneous corneal crosslinking and intrastromal corneal ring implantation		
11:50-11:57 AM	Purpureocillium lilacinum: a challenging keratitis	Aline Couto Carneiro	R3
12:00-12:07 PM	Effect of conditioned medium on corneal epithelial cells wound healing	Renata Ruoco Loureiro	PG1
12:10-12:17 PM	Microbial spectrum of Candida keratitis at the Bascom Palmer Eye Institute in Florida and the Paulista School of Medicine in Brazil: a 28-year retrospective study	Rodrigo Sidi Morizot	PG0
12:20-12:27 AM	Galectin-1 and -3 as prospective biomarkers in keratoconus patients	Rossen M Hazarbassanov	Post-DOC
<b>12:30-1:30 PM</b>	<b>LUNCH BREAK</b>		
<b>SESSION 7</b>	<b>PAPER PRESENTATION</b>		
<b>1:30- 2:30 PM</b>	<b>REFRACTIVE SURGERY, BIOENGINEERING AND CATARACT, OCULOPLASTICS, LACRIMAL SYSTEM</b> <b>Moderators: Paulo Schor, Wallace Chamon, Walton Nosé, Mauro Campos, Renato Ambrósio Jr.</b>		
1:30-1:37 PM	Development and validation of machine learning classifier combining tomography and biomechanics to the diagnosis of corneal ectasia	Bernardo Teixeira Lopes	PG1
1:40-1:47 PM	Temporal comparison of BUT and Schirmer in patients submitted to laser and blepharoplasty	Juliana de Filippi Sartori	PG1
1:50-1:57 PM	High-speed video analysis to evaluate the effect of botulinum toxin-A in patients with facial dystonia	Midori Hentona Osaki	PG1
2:00-2:07 PM	Orbital lymphatic vessels in humans: a new paradigm	Renato Wendell Damasceno	Post-DOC
2:10-2:17 PM	Lacrymal Recanalyzer: Recanalization of the nasolacrimal duct (RNLD) with high frequency	Eduardo Alonso Garcia	Post-DOC
2:20-2:27 PM	Evaluation of the dry eye in the experimental model of Sjögren Syndrome (SJS)	Lucimeire Carvalho Nova	PG1
<b>2:30-2:50 PM</b>	<b>INVITED LECTURE</b> <b>Title: Hybrid Brain-Computer Interface and Cross-Modal Feedbacks</b>	<b>Jean Faber Ferreira de Abreu, MD, PhD</b> Adjunct Professor, Department of Neurology and Neuroscience UNIFESP - Federal University of São Paulo	
<b>2:50-3:00 PM</b>	<b>Discussion and Interview</b>		
<b>3:00-3:20 PM</b>	<b>INVITED LECTURE</b> <b>Title: Advanced Corneal Imaging for Cornea and Refractive Surgery</b>	<b>Renato Ambrosio, MD, PhD</b> Adjunct Professor, Department of Ophthalmology UNIRIO - Federal University of Rio de Janeiro	
<b>3:20-3:30 PM</b>	<b>Discussion and Interview</b>		
<b>3:30-4:10 PM</b>	<b>COFFEE BREAK</b>		
<b>3:30-4:10 PM</b>	<b>POSTER - SESSION 2</b> <b>Glaucoma (6), Cornea and External Diseases (5), Laboratory (1), Refractive Surgery (1), Cataract (3), Bioengineering (5), Oculoplastics (1), Trauma (1)</b>		
<b>4:10-4:30 PM</b>	<b>INVITED LECTURE</b> <b>Title: Differentiating Indexes: Diagnostic Tools or Risk Factors</b>	<b>Marcony Santhiago, MD, PhD</b> Professor, Department of Ophthalmology USC – University of South California USP – University of São Paulo UFRJ – Federal University of Rio de Janeiro	
<b>4:30-4:40 PM</b>	<b>Discussion and Interview</b>		
<b>4:40-5:00 PM</b>	<b>INVITED LECTURE</b> <b>Title: Ethics and Retraction in Science</b>	<b>Wallace Chamon, MD</b> Adjunct Professor, Department of Ophthalmology & Visual Sciences	



## Postgraduate Program in Ophthalmology & Visual Sciences

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UNIFESP – Federal University of São Paulo  
UIC- University of Illinois at Chicago

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5:00-5:10 PM	<b>Discussion and Interview</b>
5:10 – 5:30 PM	<b>FINAL REMARKS AND AWARDS ANNOUNCEMENT</b> <i>Denise de Freitas, Mauricio Maia, José Álvaro P Gomes and Luiz Alberto Soares</i>
5:35 PM	<b>ADJOURN</b> <i>Organizing Committee</i>

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**POSTERS**

**December 07, 2017 - Thursday**

**3:00- 3:40 PM**

**POSTER SESSION 1**

**Retina and Vitreous (14), Tumors and Pathology (03), Uveitis (01), Epidemiology (03)**

Electrical Stimulation Therapy in Patients with Retinitis Pigmentosa	Bruno de Queiroz Alves	Fellow
Measurement of foveal avascular zone dimensions in eyes with retinal vein occlusion using optical coherence tomography angiography	Bruno Mauricio Rodrigues Oliveira	R2
Ophthalmic manifestations in patients with microcephaly and congenital Zika virus infection	Cristiane Bezerra da Cruz Costa	PG0
Identification of the lesion and evaluation of the presence of choroidal neovascularization activity secondary to age-related macular degeneration with OCT-A versus traditional methods of retinography, angiography and SS-OCT	Daniela S Calucci	PG0
Choroidal thickness comparison of non edematous and edematous macular areas in patients with diabetic macular edema using EDI-OCT	Dante Akira Kondo kuroiwa	R1
Evaluation of the effectiveness of a diagnostic support system in ophthalmology	Elmar Torres Neto	PG0
Intravitreal Injections Of Ziv-Aflibercept For Diabetic Macular Edema - A Pilot Study	Gabriel Costa Andrade	PG1
Optical coherence tomography angiography features in retinal artery occlusion	Guilherme Eiichi da Silva Takani	R2
Acute Cholangitis and Purtscher-like retinopathy: A case report	Irineu Kenji Ogoshi Junior	R1
Choroidal Subfoveal Thickness evaluation in patient with Inflammatory Bowel Disease with Swept Source OCT	Luis Filipe Nakayama	R3
Functional and anatomic evaluation of diabetic macular edema pre and post intravitreal anti-VEGF therapy.	Luisa Salles de Moura Mendonça	PG0
A Randomized Clinical Trial To Compare The Healing Process Of Idiopathic Macular Hole With Different Surgical Techniques	Luiz Filipe Adami Lucatto	PG1
Evaluation of Ocular Surface and Choroidal Thickness In Patients With Inflammatory Bowel Disease	Marina Lourenço Conti	R3
Migration of the intravitreal dexamethasone implant to the anterior chamber: multicenter study from the Panamerican Collaborative Retina Research Group	Mariana Batista Gonçalves	Fellow
Hydrogel polymer biocompatibility in vitreoretinal surgery.	Ramon Antunes de Oliveira	PG0
Failure of subconjunctival interferon for ocular surface squamous neoplasia	Brunella Maria Pavan Taffner	Fellow
The potential impact of Extracellular Vesicles in patients with Uveal Melanoma	Carmen Adelaide Baptista da Luz-Pessuti	Fellow
Masquerade Syndromes	Ever Ernesto Caso Rodrigues	Fellow
Adjacent Retinochoroiditis: pathognomonic of toxoplasmosis?	Paula Marques Marinho	Fellow
Quality of life in individuals with glaucoma: the utility project	Murilo Ubukata Polizelli	R2
Comparison of quality of life and utility scores between individuals with diabetic retinopathy and keratoconus: the utility project	Veronica Haysa Yamada	R3
Acanthamoeba keratitis in a referral center in Southeast Brazil	Felipe Marques de Carvalho Taguchi	R3

POSTERS

December 08, 2017 - Friday

3:30-4:30 PM

POSTER - SESSION 3

**Glaucoma (6), Cornea and External Diseases (5), Laboratory(1), Refractive Surgery (1), Cataract (3), Bioengineering (5), Oculoplastics (1), Trauma (1)**

Comparison of Reading Performance in Patients with and without Glaucoma	Andre Hiroshi Bando	PIBIC
Acute angle closure glaucoma in childhood: a case report	Jenifer Shen Ay Wu	R1
Comparison of inflammation, intraocular pressure and discomfort in patients undergoing laser iridotomy with pilocarpine or white light	Mariana Kawamuro	R2
A successful use of scleral Tutoplast for recovering a glaucoma drainage device after multiple exposures: a case report.	Marilia Cirillo Rollo	R1
Structure and function longitudinal changes after surgical intraocular pressure reduction in open angle glaucoma patients	Roberto Murad Vessani	Post-doc
Vascular Evaluation of Open Angle Glaucoma and Healthy Eyes Using Optical Coherence Tomography Angiography	Elaine Regina Sato Watanabe	R2
Ocular surface findings in the treatment of Rosacea: comparison between doxycycline and isotretinoin	Fabio Mendonça Xavier Andrade	Fellow
Efficacy and safety of riboflavin-ultraviolet type A rays inducing cross-linking of corneal collagen in patients aged 8 to 16 years with progressing keratoconus.	Júlia Gomes Fernandes Polido Cabral	PG0
Corneal Transplantation In Patients With Acanthamoeba Keratitis	Luciana Lopes Rocha	R4
Prevalence of cataract-myriasis-glaucoma syndrome in Acanthamoeba keratitis	Matheus Porto Sticca	R4
Necrotizing Streptococcus pyogenes infiltrating conjunctiva and Tenon's capsule: a case report	Paulo Alberto Cervi Rosa	R1
Definition of a Methodology To Establish a Reference Pattern of the Measure of Drop Volume of Eyedrops - A Quality And Reliability Study	Alexandre Xavier da Costa	PG1
Ultraviolet-A Absorbance Analysis in Thin Porcine Corneas Pre and Post Crosslinking	Renan Mendonça Rodrigues	PG0
The use of 2% methylcellulose and the postoperative intraocular pressure (IOP)	Camila Mendes Costa Campelo	Fellow
Evaluation of initial dexterity and rate of phacoemulsification complications during learning period	Ibraim Viana Vieira	PG0
The importance of Galectin 3 in Exfoliation syndrome	Natalia Mussi	PG0
Cost-effectiveness of refraction using a smartphone-powered refraction system	Aline Lutz de Araujo	PG0
Multisensory sleeves for eyedrop bottles to help patients with impaired vision	Ana Luiza Fontes de Azevedo Costa	PG1
Technological Development: Visual Impairment and Smart Cities	Caio Henrique Marques Teixeira	PIBIC
Innovation into Healthcare as Technological Irrationality: A Criticism to the Invention of Needs	Marlon Ribeiro Silva	PG1
Teaching ophthalmology to humans and machines	Thiago Gonçalves dos Santos Martins	PG1
Botulinum toxin efficacy as a temporary management for involuntional entropion	Isabel Moreira Borelli	R3
Intralenticular Copper Foreign Body: Case Report	Diego Lisboa Araújo	R1

## 2017 Research Days Abstract Form

### 2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):

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

**(EF) ELECTROPHYSIOLOGY**

### 1. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Patricia de Freitas Dotto - PG1

**e-mail:** [patdotto@gmail.com](mailto:patdotto@gmail.com)

**Service:** (EF) ELECTROPHYSIOLOGY

**CEP Number:** 112324/16

### 3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Paper**

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Purpose  
Methods  
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Conclusion  
Keywords

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### 5. ABSTRACT (REQUIRED):

**Title:** Visual function in low-grade optic pathway gliomas with and without neurofibromatosis type 1 assessed by transient pattern-reversal visually evoked potentials along childhood

**Author and Co-authors:** Patrícia de Freitas Dotto, M.D.1, Adriana Berezovsky, Ph.D.1, Andrea Cappellano, M.D., Ph.D.2, Nasjla Saba da Silva, M.D.2,, Paula Yuri Sacai, Ph.D.1, Frederico Adolfo B. Silva, M.D.2, Daniel Martins Rocha, M.Sc.1, Solange Rios Salomão, Ph.D.1

<sup>1</sup>Laboratório de Eletrofisiologia Visual Clínica, Depart

**Purpose:** To describe visual function assessed by pattern-reversal visually evoked potentials (PRVEP) in low-grade optic pathway gliomas (LGOPG) with and without clinical evidence of neurofibromatosis type 1 (NF1) along childhood.

**Methods:** Participants were children diagnosed with LPOPG referred for PRVEP testing and were assigned into two diagnostic groups: those without NF1 (non-NF1-OPG) and those with NF1 (NF1-OPG). Each diagnostic group was subdivided into two age groups: younger (age < 8 years) and older (age >=8 years). A control group composed age-adjusted children was included. PRVE was recorded from each eye using 60' and 15' checks. Parameters of N75-P100 amplitude ( $\mu$ V), P100 peak time (ms) and VA were analyzed by one-way ANOVA.

**Results:** Participants were 30 LGOPG (15 males, mean age =  $9.2 \pm 3.8$  years) and 19 controls (12 males, mean age =  $10.4 \pm 4.9$  years). The younger group had 6 Non-NF1-OPG (3 males, 3 white), 7NF1-OPG (5 males, 5 white) and 8 Controls (6 males, 4 white), with comparable ages ( $p=.471$ , ANOVA). 60'PRVEP in BVEs presented comparable P100 peak times (ms) among groups but reduced amplitudes in Non-NF1-OPG (mean $\pm$ sd= $8.3\pm 3.8\mu$ V) compared to NF1-OPG (mean $\pm$ sd= $17.4\pm 13.7\mu$ V) and controls (mean $\pm$ sd= $22.1\pm 8.7\mu$ V) ( $p=.047$ , ANOVA with Dunnett's post-test). For 15' PRVEP, parameters in BVE were similar among groups. WVEs were mostly non-detectable in Non-NF1-OPG for both check sizes.

**Conclusion:** Visual pathway dysfunction could be characterized as reduced amplitudes and prolonged latencies in children with LGOPG. Abnormalities were more pronounced, bilateral, and asymmetric in older children with Non-NF1-OPG.

**Keywords:** visually evoked potentials; optic pathway glioma; pattern reversal; visual pathways

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**(EF) ELECTROPHYSIOLOGY**

### 2. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Tarciana de Souza Soares - PG1

**e-mail:** [sstarciana@yahoo.com.br](mailto:sstarciana@yahoo.com.br)

**Service:** (EF) ELECTROPHYSIOLOGY

**CEP Number:** 1763153

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Purpose  
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Poster guidelines:  
**90cm x 120cm**

### 5. ABSTRACT (REQUIRED):

**Title:** Validation of sweep-VEP objective visual acuity measurement in healthy adults

**Author and Co-authors:** Tarciana de Souza Soares, Paula Yuri Sacai, Carina Verna, Adriana Berezovsky, Solange Rios Salomão

**Purpose:** Visual acuity (VA) is considered the vital sign of visual function in ophthalmic practice. In suspicious cases of functional visual loss, in which reduced VA scores are not consistent with clinical findings, the use of an objective measurement of VA is desirable. The electrophysiological method of swept visually evoked potentials (sweep-VEP) is widely used to measure grating acuity in non-verbal and pre-verbal children with ocular and/or neurological conditions, but its usefulness in cases suspected of functional visual loss is still to be determined. The purpose of this study is to validate this method by the comparison between objective grating acuity measured by sweep-VEP and subjectively informed optotype acuity in healthy adults for its future use in functional visual loss assessment.

**Methods:** This study was approved by the Committee on Ethics in Research of UNIFESP (1.763.153). Participants were healthy volunteers recruited among UNIFESP's students, their relatives and friends. Inclusion criteria were informed consent, age  $\geq 18$  years, presenting visual acuity of 20/20 or better from both eyes, absence of ocular or neurological diseases and absence of previous ocular surgeries. Monocular measurements of grating visual acuity (GVA) were obtained by sweep VEP PowerDiva system with sinusoidal black-and-white vertical grid stimuli ranging from 2- 28 cycles/degree generated in a monochromatic high-resolution monitor positioned at 150 cm. In the same visit optotype acuity was measured from each eye using a retro-illuminated logMAR chart with tumble E optotypes presented at 4 meters. The correlation between VA scores from these two methods was investigated by Pearson correlation test, with  $p < 0.05$  as statistical significance cut-off.

**Results:** Twenty healthy adult volunteers (16 females) aging from 20 to 57 years (mean =  $28.4 \pm 9.8$  years) were evaluated to estimate both objective and subjective visual acuity. Objective GVA ranged from -0.04 to 0.12 logMAR (mean =  $0.01 \pm 0.04$ ), and optotype acuity ranged from -0.2 to 0.0 logMAR (mean =  $-0.10 \pm 0.06$ ). Positive and significant correlation was found ( $r = 0.732$ ,  $p < 0.0001$ ) between the two methods for 20 eyes randomly selected.

**Conclusion:** The current results validate the measurement of grating visual acuity as a useful method to determine objectively visual status. Further studies are needed to determine the usefulness of sweep-VEP grating acuity in the diagnosis of functional visual loss.

**Keywords:** visual acuity, grating, adults

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**(EP) EPIDEMIOLOGY**

### 3. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Arthur G. Fernandes - PG1  
**e-mail:** [arthur\\_abz@yahoo.com.br](mailto:arthur_abz@yahoo.com.br)

**Service:** (EP) EPIDEMIOLOGY  
**CEP Number:** 11830313.6.1001.5505

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Keywords

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### 5. ABSTRACT (REQUIRED):

**Title:** High prevalence of pterygium contributing to vision impairment and blindness in the Brazilian Amazon Region

**Author and Co-authors:** Arthur Fernandes, Adriana Berezovsky, Marcia Higashi, Nivea Nunes, Marcos Cohen, Solange R Salomão

**Purpose:** Pterygium is an ophthalmic disease highly prevalent in equatorial regions, however, it is not often considered as a potential cause of visual impairment. Our purpose was to determine the prevalence of pterygium and its contribution to visual impairment and blindness in adults living in the Brazilian Amazon Region.

**Methods:** BARES is a population-based cross-sectional study. Eligible subjects 45 years of age and older were enumerated through a door-to-door household survey and invited for an eye exam. Pterygium was assessed by ophthalmologists through slit-lamp examination and classified according to the laterality (unilateral or bilateral), location (nasal, temporal or both), and size (<3mm, &#8805,3mm not reaching the pupillary margin, or &#8805,3mm reaching the pupillary margin). Visual impairment was considered as best-corrected visual acuity (BCVA) <20/63 and blindness BCVA <20/200. Associations of pterygium with gender, age, education and area of residence were evaluated through multiple logistic regression.

**Results:** A total of 2384 eligible persons were enumerated and 2041 (85.6%) were examined. The prevalence of any pterygium in either eye was 58.7% [95% Confidence Interval (CI): 56.6%-60.9%] and for bilateral pterygium was 39.2% [95%CI: 37.1%-41.4%]. Most of the cases were bilateral (66.7%), only nasal (78.0%), and <3mm (67.9%). Male gender [OR=1.69, 95%CI: 1.35-1.94, p=0.001] was associated to pterygium occurrence in either eye. Older age [OR=2.01, 95%CI: 1.40-2.89, p=0.001] and rural residency [OR=1.64, 95%CI: 1.16-2.30, p=0.008] were associated to pterygium >3mm not reaching the pupillary margin. Older age [OR=3.66, 95%CI: 1.91-7.04, p=0.001] was associated with pterygium reaching the pupillary margin. Pterygium was the main cause of visual impairment and blindness in 14.3% and 3.9% of the cases, respectively.

**Conclusion:** Pterygium was highly prevalent in older adults and it is an important cause visual impairment and blindness even when the best refractive correction is provided. These findings reinforce the need of strategic actions to prevent and to provide services for early diagnosis and treatment of this disease.

**Keywords:** Pterygium; Epidemiology

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### 4. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Claudia Maria Osório Chaves - PG1

**e-mail:** [claudiamachaves@gmail.com](mailto:claudiamachaves@gmail.com)

**Service:** (EP) EPIDEMIOLOGY

**CEP Number:** 940092

### 5. ABSTRACT (REQUIRED):

**Title:** Visual Impairment And Blindness In Very Elderly Residents Of Maués, Amazonas

**Author and Co-authors:** Cláudia Maria Osório Chaves

Marcela Colussi Cypel

Rubens Belfort Jr

Solange Rios Salomão

**Purpose:** To determine the frequency and causes of visual impairment/blindness in very elderly residents of urban areas from the city of Maués, AM.

**Methods:** This is an ongoing observational study in which all residents of urban Maués aged 80 years and older were invited for a comprehensive eye exam along with a questionnaire to describe nutritional habits. Uncorrected (UCVA), presenting (PVA) and best-corrected visual acuities (BCVA) were taken from each eye. Additional tests as intraocular pressure measurement, biomicroscopy and fundus exam were also performed. If necessary glasses prescription, surgery or other kinds of treatment were provided free-of-charge.

**Results:** A group of 361 participants was examined, in which 183 (50.69%) were male and 178 (49.31%) female. The age range was: 278 (77.01%) aged 80-90 years, 76 (21.05%) aged 91-100 years and 7 (1.94%) centenarians. Considering the better-seeing eye, normal PVA (20/32 or better) was found in 18 (5.0%) participants, 49 (13.61%) had mild visual impairment (<20/32 to &#8805,20/63), 93 (25,83%) had visual impairment (<20/63 to &#8805,20/200) and 200 (55,55%) had blindness (<20/200). After refraction exam, considering the BCVA 55 (15.28%), showed no visual impairment, 75 (20.83%) showed mild visual impairment, 73 (20.27%) had visual impairment and 157 (43.61%) had blindness. The main causes of blind eyes were: cataract in 374 (51.80%), age-related macular degeneration in 82 (11.36%), refractive error in 38 (5.26%), posterior capsule opacity in 27 (3.74%), corneal diseases in 26 (3.60%), glaucoma in 23 (3.19%), other optic nerve atrophy in 23 (3.19%), phtisis bulbi in 22 (3.05%), others retinal diseases in 10 (1.39%), diabetic retinopathy in 8 (1.11%), pterygium in 4 (0.55%), amblyopia in 1 (0.14%). The cause of blindness could not be determined in 37 (5,12%) eyes.

**Conclusion:** A high frequency of visual impairment and blindness was detected in this sample of very elderly people living in urban areas in the city of Maués. The major causes of blind eyes were avoidable with provision of cataract surgery followed by adequate post-operative actions as laser posterior capsulotomy and prescription of adequate glasses. These results reflect the limited access of this population to eye care services reinforcing the need of sustainable actions to improve eye health in remote areas of Brazil.

**Keywords:** visual impairment, elderly, vision, blindness, aging



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### 5. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Cristina Cardoso Coimbra Cunha - PG1

**e-mail:** [cristinacoimbracunha@gmail.com](mailto:cristinacoimbracunha@gmail.com)

**Service:** (EP) EPIDEMIOLOGY

**CEP Number:** 262482

### 5. ABSTRACT (REQUIRED):

**Title:** Impact Of Refractive Correction On Near Visual Acuity In Older Adults From Parintins: The Brazilian Amazon Region Eye Survey (Bares)

**Author and Co-authors:** Cristina C. Cunha, Adriana Berezovsky, Arthur G. Fernandes, Nívea N. Cavascan, Paula Sacai, Marcela Cypel, Sung Watanabe, Sérgio Munoz, João M. Furtado, Marcos J. Cohe, Galton C Vasconcelos, Jacob M Cohen, Mauro Campos, Rubens Belfort, Jr., Solange R. Salomão

**Purpose:** Determine the vision status and the impact of refractive correction and additional lenses on near visual acuity in a population of older adults from the Brazilian Amazon Region

**Methods:** Population-based, cross-sectional epidemiological study conducted using cluster random sampling to enumerate subjects &#8805;45 years of age. Eligible subjects were enumerated through door-to-door household survey and invited for visual acuity testing and eye exam. Uncorrected (UCNVA) and presenting (PNVA) near visual acuity were measured from each eye using a logMAR chart at 40 cm. Auto refraction followed by subjective refraction and additional lenses testing was performed to determine BCNVA. Near vision status was defined by lines of impairment considering UCNVA and PNVA. The impact of refractive correction was defined as lines of improvement from UCNVA to BCNVA and from PNVA to BCNVA.

**Results:** A total of 2384 eligible persons was enumerated, and 2041 (85.7%) were examined. Out of these, 2025 individuals who informed VA (4050 eyes) were included. Lines of impairment ranged from 0 (20/20) in 5 (0.12%) eyes to >10 lines (<20/200) in 438 (10.8%) eyes, with an average of 7.2±0.05 lines for UCNVA. For PNVA lines of impairment ranged from 0 in 147 (3.6%) eyes to > 10 lines in 362 (9.0%) eyes, with an average of 6.0±0.06 lines. For BCNVA lines of impairment ranged from 0 in 2034 (50.2%) eyes to >10 lines in 267 (6.4%) eyes, with an average of 2.32±0.06 lines.

Average UCNVA to BCNVA improvement was 4.9±0.04 lines, ranging from 0 (no improvement) in 413 (10.2%) eyes to &#8805; 10 lines in 167 (4.1%) eyes, with 3447 (85.1%) eyes improving &#8805; 2 lines. The average improvement from PNVA to BCNVA was 3.7±0.04 lines, ranging from 0 in 660 (16.3%) eyes to &#8805; 10 lines in 63 (1.6%) eyes, with 2982 (73.6%) eyes improving &#8805; 2 lines.

**Conclusion:** Near visual impairment was found in most participants both for uncorrected and presenting near visual acuity, reinforcing the limited access to refractive services in this population. There was a considerable improvement in lines of visual acuity after best optical correction mainly for those with younger age and lower education

**Keywords:** presbyopia; near visual acuity; Amazon

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Keywords

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### 6. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Ana Carla Ramos Vieira Costa - PG1

**e-mail:** [anacarlaavc@hotmail.com](mailto:anacarlaavc@hotmail.com)

**Service:** (LV) LOW VISION

**CEP Number:** 89773

### 5. ABSTRACT (REQUIRED):

**Title:** A Comparison of the Bayley Scales of Infant and Toddler Development and grating acuity measured by Teller acuity cards in babies and young children

**Author and Co-authors:** Ana Carla R Vieira da Costa, Nívea N Cavascan, Arthur G Fernandes, Adriana Berezovsky

**Purpose:** The Bayley Scales of Infant and Toddler Development-III (Bayley III) is a tool to measure the developmental status of young children in the first three years of life including cognitive and motor functioning. The purpose of this study was to evaluate the correlation between grating visual acuity and visual functionality through the Bayley III in healthy children.

**Methods:** Binocular grating acuity(BGA)was measured by Teller acuity cards(TAC)Bayley III in healthy participants with term birth aging from 1-42 months. The inclusion criteria were: normal visual behavior observed by parents, aligned eyes, normal pediatric development and absence of neurological condition. The Bayley-III contains cognitive(91 items),language(97 items),motor(138 items),social-emotional(35 items),and adaptive behavior(241 items). Only cognitive and motor domain were included for analysis in this study because of their direct repercussion on vision status. Scores from BGA(logMAR) and Bayley III scores for both cognitive and motor(gross and fine)skills were compared. The associations among the tests were evaluated through Pearson Correlation Coefficients. This protocol was approved by the Committee on Ethics in Research of UNIFESP and informed consent was provided from parents/guardians.

**Results:** A group of33 children(17 females--51 %)with ages ranging from 1.2 to 42.1 months(mean=18.7±10.2, median=14.9)was tested. BGA ranged from 0.01 to 1.04 logMAR(mean=0.34±0.26, median=0.32)and was within normal age limits for all participants. Cognitive raw data score ranged from11to90(mean=53.9±17.2, median=54.0),gross motor score ranged from12to72(mean=44.6±14.8, median=42.0)and fine motor score ranged from 4 to 90(mean=44.1±16.2, median=43). There was a significant correlation between BGA scores and cognitive, gross and fine motor scores respectively ( $r=-0.75$ ,  $p\leq 0.01$ ,  $r=-0.71$ ,  $p\leq 0.01$ ,  $r=-0.67$ ,  $p\leq 0.01$ ).

**Conclusion:** A high correlation was found in this cohort of healthy children between grating acuity threshold measured by TAC and cognitive and motor scores measured by Bayley III. These results showed might be a useful tool to assess the repercussion of visual impairment in the cognitive and motor development of young children in future studies.

**Keywords:** Teller Acuity Cards; Bayley Scales of Infant and Toddler Development-III; Visual Development.

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### 7. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Dayane Issaho - PG1  
**e-mail:** [dayissaho@gmail.com](mailto:dayissaho@gmail.com)

**Service:** (ST) STRABISMUS  
**CEP Number:** 52215

### 5. ABSTRACT (REQUIRED):

**Title:** The use of botulinum toxin to treat infantile esotropia: a systematic review with meta-analysis

**Author and Co-authors:** Dayane Cristine Issaho, MD  
Fabio Ramos de Souza Carvalho, PhD  
Marcia Keiko Uyeno Tabuse, MD, PhD  
Linda Christian Carrijo Carvalho, PhD  
Denise de Freitas, MD, PhD

**Purpose:** The purpose of this review was to examine the efficacy of botulinum toxin in the treatment of infantile esotropia and to evaluate the average response of BT and its complication rates.

**Methods:** A research was performed in the Latin American and Caribbean Literature on Health Sciences (LILACS), MEDLINE and Cochrane Central Register of Controlled Trial (CENTRAL). The database was searched between 28 December 2016 and 30 January 2017. The selection was restricted to articles published in English, Spanish or Portuguese. There were no date restrictions in the search.

**Results:** Nine studies were eligible for inclusion. The grouped success rate of BT treatment in infantile esotropia was 76% (95% CI = [61% - 89%]). For the success rate, 12 of 94.25% was observed, indicating a high heterogeneity ( $p < 0.001$ ).

The complication rates were also analyzed. The grouped consecutive exotropia (XT) rate was 1% (95% CI = [0% - 2%]). The grouped ptosis rate was 27% (95% CI = [21% - 33%]). The grouped vertical deviation rate was 12% (95% CI = [4% - 22%]).

The mean change of the deviation after BT injection was -30.7 (95% CI = -37.7, -23.8), demonstrating a significant improvement in alignment.

**Conclusion:** Botulinum toxin injection into medial recti muscles reveals to be a safe procedure and a valuable alternative to strabismus surgery in congenital esotropia, especially in moderate deviations.

**Keywords:** strabismus, infantile esotropia, botulinum toxin

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### 8. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Bruno de Paula Freitas - PG1

**e-mail:** [brunodepaulafreitas@hotmail.com](mailto:brunodepaulafreitas@hotmail.com)

**Service:** (UV) UVEITIS

**CEP Number:** 1370484

### 5. ABSTRACT (REQUIRED):

**Title:** Ocular Findings in Infants With Microcephaly Associated With Presumed Zika Virus Congenital Infection in Salvador, Brazil.

**Author and Co-authors:** Bruno de Paula Freitas, João Rafael de Oliveira Dias, Juliana Prazeres, Gielson Almeida Sacramento, Albert Icksang Ko, Maurício Maia, Rubens Belfort Jr.

**Purpose:** To evaluate the ocular findings in infants with microcephaly associated with presumed intrauterine Zika virus (ZIKV) infection in Salvador, Bahia, Brazil.

**Methods:** Twenty-nine infants with microcephaly with a presumed diagnosis of congenital ZIKV were recruited through an active search and referrals from other hospitals and health unities. The study was conducted between December 1 and December 21, 2015. All infants and mothers underwent systemic and ophthalmic examinations in the Roberto Santos General Hospital, Salvador, Brazil. Anterior segment and retinal, choroidal, and optic nerve abnormalities were documented using a wide-field digital imaging system. The differential diagnosis included toxoplasmosis, rubella, cytomegalovirus, herpes simplex virus, syphilis, and human immunodeficiency virus, which were ruled out through serologic and clinical examinations.

**Results:** Twenty-three of 29 mothers (79.3%) reported suspected ZIKV infection signs and symptoms during pregnancy, 18 in the first trimester, 4 in the second trimester, and 1 in the third trimester. Of the 29 infants (58 eyes) examined (18 [62.1%] female), ocular abnormalities were present in 17 eyes (29.3%) of 10 children (34.5%). Bilateral findings were found in 7 of 10 patients presenting with ocular lesions, the most common of which were focal pigment mottling of the retina and chorioretinal atrophy in 11 of the 17 eyes with abnormalities (64.7%), followed by optic nerve abnormalities in 8 eyes (47.1%), bilateral iris coloboma in 1 patient (2 eyes [11.8%]), and lens subluxation in 1 eye (5.9%).

**Conclusion:** Congenital infection due to presumed ZIKV exposure is associated with vision-threatening findings, which include bilateral macular and perimacular lesions as well as optic nerve abnormalities in most cases.

**Keywords:** Zika virus, microcephaly, global health, congenital zika syndrome, ocular findings

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

**Name:** Yuslay Fernandez Zamora - PG1

**e-mail:** [yuslay82@gmail.com](mailto:yuslay82@gmail.com)

**Service:** (UV) UVEITIS

**CEP Number:** 945294

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### 5. ABSTRACT (REQUIRED):

**Title:** Principal results of the research Interferon-Gamma Release Assay (IGRA): Implications for the diagnosis and management of tuberculosis-related ocular inflammation""

**Author and Co-authors:** Yuslay Fernandez Zamora, Luciana Peixoto Finamor, Paula Marinho, Ricardo P Casaroli-Marano, Denise Rodrigues, Cristina Muccioli.

**Purpose:** To describe the principal clinical features of presumed ocular tuberculosis (TBO) and the Interferon-Gamma Release Assays (IGRA) test results for the diagnosis and treatment of ocular tuberculosis.

**Methods:** Observational prospective study carried out during the period 2015-2017. Were included patients older than 18 years old with clinical features of suspected TBO. Patients with a positive result of either IGRA or tuberculin skin test (TST) and clinical features compatible with TBO, were treated with anti-tubercular therapy.

**Results:** In order to clarify a diagnosis of ocular inflammation, a total of 124 patients underwent the TST and IGRA tests. Sixty patients (48.4%) were positive for TST (&#8805;10mm) and 41 patients (33.1%) were positive for IGRA. Forty patients (32.2%) were positive for both IGRA and TST. By considering the ocular findings compatible with ocular tuberculosis and taking into account the tests results, a total of 42 patients (33.9%) were selected for anti-tubercular treatment. Of these patients, 37 (88%) were positive for both IGRA and TST. The principal clinical features of TBO were vasculitis (23.8%), multifocal choroiditis (19%), escleritis (16.7%) and anterior uveitis (14.3%). Others ocular findings were interstitial keratitis, posterior uveitis and serpiginous like choroiditis.

**Conclusion:** Diagnosis of ocular tuberculosis continues to be challenging. The combination of clinical signs, TST and IGRA test could be a good tool to improve the accuracy of diagnosis of TBO.

**Keywords:** Interferon-Gamma Release Assays, tuberculin skin test, diagnosis, ocular tuberculosis.

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### 10. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Thais Sousa Mendes - PGO  
**e-mail:** [thaismendesoft@gmail.com](mailto:thaismendesoft@gmail.com)

**Service:** (PH) PHARMACOLOGY  
**CEP Number:** 66113300

### 5. ABSTRACT (REQUIRED):

**Title:** Investigation of the antiangiogenic effect of intravitreal curcumin in experimental model of proliferative retinopathy

**Author and Co-authors:** Thais Sousa Mendes, Eduardo Amorim Novais, Emmerson Badaró, João Rafael de Oliveira Dias MD, Vinicius Kniggendorf, Camila Xavier, Bruna Ferraço Marianelli, Elmar Torres, Acacio Alves Souza Lima-Filho, Sung Watanabe, Michel Eid Farah, Eduardo Büchele Rodrigues

**Purpose:** To investigate the antiangiogenic effect of 0.1mg and 0.3 mg of intravitreal curcumin in an experimental model of proliferative retinopathy after intravitreal injection of vascular endothelial growth factor 165 (VEGF 165).

**Methods:** A prospective, interventional study. Six pigmented rabbits (chinchilla breed) underwent an intravitreal injection of VEGF 165 in their right eye and balanced salt solution (BSS) in the left eye. In group 1, rabbits received a 0.1mg curcumin intravitreal injection at day 7 and in group 2, rabbits received 3.0mg curcumin intravitreal injection at day 7. At baseline, clinical examination included anterior biomicroscopy, fundus exam, fundus photography, fluorescein angiography (FA), full-field electroretinogram (ERG) and spectral domain optical coherence tomography (SD-OCT). All exams were repeated during follow-up at week 1 and 2. In the second week after VEGF 165 injection, the rabbits were euthanized and all eyes were sent to histological evaluation.

**Results:** Seven days after intravitreal injection of VEGF 165, all eyes developed neovascularization of the retina. Intravitreal curcumin reduced neovascularization in all eyes at week 1 after the injection. SD-OCT and ERG responses were normal for both groups when compared to baseline and to the control eye. Histological evaluation showed no retinal major alterations in both groups.

**Conclusion:** Intravitreal curcumin may be effective in the treatment of experimental retinal neovascularization in animal model.

**Keywords:** curcumin, natural drug, antiangiogenic effect

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### 11. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Vinicius Ferreira Kniggendorf - PG1

**e-mail:** [vinicius\\_kdorf@yahoo.com.br](mailto:vinicius_kdorf@yahoo.com.br)

**Service:** (PH) PHARMACOLOGY

**CEP Number:** 572612071

### 5. ABSTRACT (REQUIRED):

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

**Author and Co-authors:** Vinicius F. Kniggendorf, Thatiane A. Russo, Maria Eduarda Perrud Sousa, Juliana L. Dreyfuss, Caio V. S. Regatieri

**Purpose:** Angiogenesis is the formation of new blood vessels from preexisting vasculature. Pathologic angiogenesis in the eye such as choroidal neovascularization secondary to wet age-related macular degeneration lead to severe visual impairment and dramatically affect the quality of life. The search for emerging therapies to treat neovascularization pointed heparin as good target since it has important functions as regulator of vessel growth. The purpose of this study is investigate the anti-angiogenic effect of chemically modified heparins (mHep) in vitro and in vivo using a model of laser induced choroidal neovascularization in rats.

**Methods:** Three mHEP were used in this study, O-N-desulfated (O-N), 2-0-desulfated (2-0), N-desulfated Re-N-acetylated (N-DRN) with no anti-coagulant or hemorrhagic effects. After 24 hours of treatment with mHep at 10ng/ml, 100ng/ml and 1000ng/ml or saline (PBS) the following tests were performed: Proliferation test in endothelial cells (EC) and the evaluation by direct cell counting, Anti-angiogenic assay by matrigel, cell viability by MTT test in EC and ARPE-19, EC migration assay in transwell. EC adhesion assay using fibronectin, laminin and gelatin as substrates. (CEUA: 5726120717)

**Results:** All mHep showed anti-proliferative effects in ECs after 24 hours of treatment. Dose-related effect was observed with better results in 1000ng/ml. The anti-angiogenic test in matrigel showed an inhibition in tube formation after the treatment with the 2-0 and N-DRN. EC or ARPE-19 cell viability was not affected by the the treatment with mHEPs on the different concentrations. The migration of EC was reduced after the treatment with mHeps 2-0 and N-DRN. Adhesion of EC on fibronectin, laminin and gelatin was reduced after treatment with O-N and 2-0.

**Conclusion:** The treatment of ECs with mHep aims to prospect a new drug to treat ocular angiogenesis. These three mHep have shown anti-angiogenic, anti-proliferative, anti-adhesive and anti-migratory effects on ECs but no effects on ARPE-19 retinal cells viability. In vivo studies using choroidal neovascular models will be used to further investigate the efficacy of these new molecules with anti-angiogenic potential.

**Keywords:** Angiogenesis, new therapies, modified heparins

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### 12. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Cristiane Siqueira Peris - PG1

**e-mail:** [periscristiane@gmail.com](mailto:periscristiane@gmail.com)

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Methods  
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### 5. ABSTRACT (REQUIRED):

**Title:** Anthocyanin Analysis In A Novel Vital Dye Extracted From The Acai Fruit (Euterpe Oleracea) For Chromovitrectomy

**Author and Co-authors:** Cristiane S. Peris, \* Rafael R. Caiado, MD, \* Acácio Alves Souza Lima-Filho, PhD, Eduardo B. Rodrigues, MD, PhD,\* Michel Eid Farah, MD, PhD\*, Joao Guilherme Palma Urushima\*, Raul Ragazzi, PhD , Mauricio Maia, MD, PhD\*

**Purpose:** The goals of this study were to classify and quantify the anthocyanins present in vital dye extracted from the acai fruit (Euterpe oleracea) as well to correct the Ph and osmolarity and perform Lyophilization process in order to develop a new dye for chromovitrectomy.

**Methods:** A vital dye extracted from the acai fruit was evaluated (Euterpe oleracea) in three different concentrations 10% (equivalent to 100mg of lyophilized extracted of the acai pulp diluted in 1ml PBS phosphate buffer solution in pH 7.00 and 300mOsm)<sup>1</sup>, 25% (equivalent to 250mg of lyophilized extracted of the acai pulp diluted in 1ml PBS phosphate buffer solution in pH 7.00 and 300mOsm )<sup>1</sup> and 35% (equivalent to 350mg of lyophilized extracted of the acai pulp diluted in 1ml PBS phosphate buffer solution in pH 7.00 and 300mOsm)<sup>1</sup>. The dye was produced by Ophthalmos SA using the HPLC (High-performance liquid chromatography) method. Mass Spectrometry was used to identify and compare distincts concentrations dye to five isolated basic anthocyanins molecules (ChromaDex Inc USA): 1-Cyanidin-3-0-glucoside, 2-Homoorientin, 3-Orientin, 4-Isovitexin and 5-Taxifolin.

**Results:** This study confirmed the presence of five anthocyanins in the vital dye of the acai fruit (Euterpe Oleracea), at the following quantity at distinct concentrations:

Cyanidin-3-0-glucoside	10%	836,55 ± 8,89mg/L	25%	795,36 ± 7,87mg/L
	35%	786,28 ± 22,96mg/L		
Homoorientin	10%	88,17 ± 0,13mg/L	25%	81,16 ± 1,43mg/L
	35%	84,03 ± 1,39mg/L		
Orientin	10%	65,49 ± 1,09mg/L	25%	60,13 ± 1,10mg/L
	35%	62,99 ± 0,27mg/L		
Taxifolin	10%	21,04 ± 0,69mg/L	25%	19,98 ± 0,84mg/L
	35%	20,81 ± 0,28mg/L		
Isovitexin	10%	14,45 ± 0,90mg/L	25%	13,54 ± 0,77mg/L
	35%	12,66 ± 0,21mg/L		

**Conclusion:** 5 major Anthocyanins are present in the vital dye extracted from the açaí fruit (Euterpe Oleracea) and the Cyanidin-3-0-glucoside is the main component. The pharmacological correction of Ph and osmolarity as well as lyophilization process were successful and this new dye may be an alternative for chromovitrectomy in humans.

**Keywords:** acai fruit, anthocyanins, chromovitrectomy, Euterpe oleracea



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### 13. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Eduardo Amorim Novais - PG1

**e-mail:** [eduardo@novais.md](mailto:eduardo@novais.md)

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Keywords

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### 5. ABSTRACT (REQUIRED):

**Title:** En Face Doppler OCT Measurement of Total Retinal Blood Flow in Diabetic Retinopathy and Diabetic Macular Edema

**Author and Co-authors:** Eduardo A. Novais, ByungKun Lee, Eric M. Moulton, Jay S. Duker, and James G. Fujimoto, Rubens Belfort Jr.

**Purpose:** Ocular blood flow alterations play an important role in the pathogenesis and progression of diabetic retinopathy (DR), however, the measurement of retinal blood flow in clinical studies has been challenging. En face Doppler optical coherence tomography (OCT) provides an effective method for measuring total retinal blood flow (TRBF) in the clinic.

This study investigates TRBF using en face Doppler OCT in eyes with DR of varying severity, with and without diabetic macular edema (DME).

**Methods:** This was a cross-sectional study conducted from May 23, 2014 to January 11, 2016 analyzing 41 eyes with DR from 31 diabetic patients (12 females, ages 62.8±13.4 years), 20 eyes without retinopathy from 11 diabetic patients (5 females, ages 58.8±10.1 years), and 16 eyes from 12 healthy age-matched controls (8 females, ages 57.9±8.1 years) imaged at the New England Eye Center.

Subjects were imaged with a high-speed, swept-source OCT (SS-OCT) prototype at 1050 nm wavelength using repeated en face Doppler OCT raster scans, comprised of 600×80 axial scans and covering a 1.5mm×2mm area centered at the optic disc. TRBF was automatically calculated using custom Matlab software.

**Results:** Mean TRBF was 27.7±8.7 µL/min in DME eyes, 50.9±15.4 µL/min in the DR eyes without DME, 40.1±7.7 µL/min in the diabetic eyes without retinopathy, and 44.4±8.3 µL/min in age-matched healthy eyes. A difference in TRBF between the eyes with treated DME and treatment-naïve DME was not identified. TRBF was consistently low in the eyes with DME regardless of DR severity. Moderate NPDR eyes without DME exhibited a wide range of TRBF from 31.1 µL/min to 75.0 µL/min, with the distribution being highly skewed.

**Conclusion:** High-speed en face Doppler OCT can measure TRBF in healthy and diabetic eyes. Diabetic eyes with DME exhibited lower TRBF than healthy controls (P=0.0001). Further longitudinal studies of TRBF in eyes with DR would be helpful to determine whether reduced TRBF is a risk factor for DME.

**Keywords:** en face doppler, diabetic retinopathy, diabetic macular edema, blood flow

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### 14. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Fabiana Louise Motta - PG1

**e-mail:** [fabiana.louise@gmail.com](mailto:fabiana.louise@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

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### 5. ABSTRACT (REQUIRED):

**Title:** The correlation between CRB1 variants and the clinical severity of Brazilian patients with different inherited retinal dystrophy phenotypes

**Author and Co-authors:** Fabiana L Motta(1), Mariana V Salles(1), Karita A Costa(1), Rafael Filippelli-Silva(2), Renan P Martin(2), Juliana M F Sallum(1)  
1 Department of Ophthalmology, Federal University of Sao Paulo, Sao Paulo, Brazil

2 Department of Biophysics, Federal University of Sao Paulo, Sao Paulo, Brazil

**Purpose:** Mutations in at least 250 genes have been associated with inherited retinal dystrophy, the CRB1 gene is one of them. Pathogenic variants in CRB1 lead to a variety of phenotypes ranging from retinitis pigmentosa to more severe disease such as Leber congenital amaurosis. This retrospective study aimed to assess the genotype-phenotype correlation in Brazilian patients with CRB1 variants.

**Methods:** We reviewed 230 medical records of Brazilian patients with molecular tests for inherited retinal dystrophy. Patients with CRB1 variants were selected and their genetic data, medical history and eye exams were collected. The clinical diagnosis was made based on their signs and symptoms, age of onset and fundus features.

**Results:** Among the 230 medical records of IRD patients analyzed, 15 cases of unrelated patients with CRB1 variants were selected, wherein eight of them were diagnosed as Leber congenital amaurosis, three as retinitis pigmentosa, two as cone-rod dystrophy and two as early-onset retinal dystrophy. Seven novel likely pathogenic variants were identified: four missense variants (p.Leu479Pro, p.Ala921Pro, p.Cys948Arg and p.Asp1031Asn), two frameshift deletions (c.2536\_2542del7 and c.3460\_3461delTG) and one frameshift indel variant (c.276\_294delinsTGAACACTGTAC). All Leber congenital amaurosis subjects had more severe pathogenic variants (premature termination or protein tertiary structure changes) in both allele. On the other hand, retinitis pigmentosa and cone-rod dystrophy patients have mostly missense variants that do not affect cysteines involved in disulfide bonds. Finally, the early-onset retinal dystrophy patient had an intermediate phenotype and genotype, i.e. a missense variant (p.Arg764His) and a premature truncation (p.Arg1390\*).

**Conclusion:** Our data suggest that there was a direct relation between phenotype severity and the mutation effect on protein functionality in CRB1 patients. In addition, the causal association between CRB1 pathogenic variants and cone-rod dystrophy was reinforced by this study.

**Keywords:** CRB1 gene ; inherited retinal dystrophy ; genotype-phenotype correlation

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**(RE) RETINA AND VITREOUS**

15. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Juliana Moura Bastos Prazeres - PG0

**e-mail:** [juprazeres@hotmail.com](mailto:juprazeres@hotmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 201207081

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

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5. ABSTRACT (REQUIRED):

**Title:** Ocular Abnormalities in mice following Congenital Zika Virus Infection

**Author and Co-authors:** Juliana Prazeres, Jean Pierre Peron, Nilva Moraes, Bruno Solano Souza, Carolina Polonio, Maurício Maia

**Purpose:** To demonstrate that Zika Virus (ZIKV BR) congenital infection may cause distinct ocular abnormalities in a murine model

**Methods:** A murine experimental model of SJL (model developed in 1955 from Swiss Webster outbred mice of three origins ) pregnant mice was infected with  $4 \times 10^{10}$  PFU of ZIKV BR , via an intravenous route, at embryonic day 6.5 and 7.5 x control group. After birth the pups were euthanized using intramuscular ketamine at a dose of 100mg / kg and sedation with cervical displacement. Both pup's eyes were enucleated and one eye was sent for PCR and another eye was fixed in 4% paraformaldehyde for histological analysis. The PCR assay was used to confirm the presence of ZIKV genomic RNA in ocular tissues. For immunofluorescent labeling we used the antibodies: Anti-GFAP, Anti-Brn3, Anti-Tuj1, Anti Rodopsin, Anti-Sox, Caspase 3 and ZIKV. We used a dual immunostaining of ZIKV with cell type specific markers cited above. Qualitative analysis and quantitative analysis through cellular morphometry will be performed.

**Results:** We intend to demonstrate that pups born from pregnant ZIKV infected mice may develop distinct ocular abnormalities in retina and optic disc. Using immunofluorescence we examined the viral neuronal tropism in major retinal cells. It was possible to demonstrate the presence of degeneration in the internal retina, predominantly in the ganglion cell layer, using the TUJ-1 immunomarker. We also observed significant optic nerve atrophy when compared to the control group.

**Conclusion:** These murine models have shown that ZIKV BR caused structural damage to neuronal tissues in the retina. This data will be useful for comprehension of mechanisms of viral pathogenesis in susceptible retinal cells and characterization of cell degeneration and virus neuronal tropism.

**Keywords:** zika VIRUS, Zika Virus Congenital Infection , Ocular findings, Microcephaly

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**(RE) RETINA AND VITREOUS**

16. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Mariana Vallim Salles - PG1

**e-mail:** [marivallim@yahoo.com.br](mailto:marivallim@yahoo.com.br)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 6159

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Paper**

5. ABSTRACT (REQUIRED):

**Title:** PROM1 gene variations in Brazilian patients with macular dystrophy

**Author and Co-authors:** Mariana Vallim Salles, Fabiana Louise Motta, Elton Dias da Silva, Patricia Varela Lima Teixeira, Kárita Antunes Costa, Rafael Filippelli-Silva, Renan

Martin, João Bosco Pesquero & Juliana Maria Ferraz Sallum

**Purpose:** The aim of this study was to evaluate PROM1 gene sequence variations in patients with macular dystrophy.

**Methods:** This retrospective study evaluated variations in the PROM1 gene detected by next-generation sequencing test in patients with macular dystrophy and Stargardt disease.

**Results:** Of 25 medical records of patients with Stargardt disease, three records of patients with PROM1 gene sequence variations were selected for the study. The p.Asp776Val and p.Asp829Asn variants were detected in cases 1 and 2, respectively, and predicted to be pathogenic, they were probably responsible for macular dystrophy in these patients. Case 3 showed a p.Ala643Gly variant in the PROM1 gene and a single variation in the ABCA4 gene, but molecular testing results were inconclusive.

**Conclusion:** In cases of Stargardt disease, where molecular testing results are inconclusive for pathogenic variations in the ABCA4 gene, variations in the PROM1 gene may occur and be considered responsible for the disease in the molecular analysis. This study described three cases in which variations in PROM1 gene may play a role in the pathogenesis of macular dystrophy or be associated with both autosomal recessive and autosomal dominant inheritance.

**Keywords:** Eye diseases; genetics; hereditary; human; PROM1 protein; retinal dystrophies

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**(RE) RETINA AND VITREOUS**

17. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Marisa Lucia Romani Paraboni - PG1

**e-mail:** [marisar@uri.com.br](mailto:marisar@uri.com.br)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 99709-294

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Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Isolation Of Toxoplasma Gondii Strains In Patients With Toxoplasmosis

**Author and Co-authors:** Marisa L Romani Paraboni (1,2), Deise F. Costa, 2 Alessandra G. Commodaro 2 , Claudio Silveira (2,3) and Rubens Belfort Jr (2)  
(1) Department of Health Sciences - URI, Erechim, RGS  
(2) Department of Ophthalmology - UNIFESP, SP  
(3) Silveira Clinic, Erechim, RS

**Purpose:** To isolate T. gondii strains from the blood of patients with acute and chronic toxoplasmosis with active (OT) or without ocular toxoplasmosis (Non OT).

**Methods:** Twelve patients with OT (n=7) and Non OT (n=5) were recruited at Silveira Clinic in Erechim, Rio Grande do Sul State, Brazil. Eight patients had circulating T. gondii IgM antibodies and the other 4 presented only circulating IgG antibodies for Toxoplasmosis. The 4 presented with recurrent toxoplasmic retinochoroiditis. Three of the patients with circulating IgM antibodies were diagnosed as having unilateral active ocular toxoplasmosis lesions (active necrotizing retinochoroiditis). The other 5 patients presented extra ocular signs of systemic toxoplasmosis such as fever and lymphadenopathy.

The protocol was approved by the Human Ethics Committee of UNIFESP and the use of animals of CEUA / URI. Peripheral blood samples were collected from the patients and blood cells sediments containing erythrocytes and leukocytes were inoculated intraperitoneally in C57Bl/6 mice. Thirty days after inoculation, the mice were bled and tested for IgG antibodies. Positive animals were sacrificed and brains were removed and inoculated in other mice or kept in culture for strain isolation and genetic characterization.

**Results:** From the 24 mice that received blood cells from the 12 patients (2 mice for each patient), 20.8% (5/24) became seropositive for T. gondii . Blood from 3 patients with IgM antibody for T. gondii and presented active infection, and 2 with IGM antibodies and without ocular lesions were capable to infect the mice. None of the blood of the 4 patients without IgM infected the mice.

**Conclusion:** These original data reinforces results supporting the concept that patients with active ocular toxoplasmosis often have circulating Toxoplasma organism and this may be related to ocular lesions. Genetic characterization is under way.

**Keywords:** ocular toxoplasmosis, molecular characterization, strains isolates

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### 18. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Oswaldo Ferreira Moura Brasil - PG1

**e-mail:** [dicoretina@gmail.com](mailto:dicoretina@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

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Keywords

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### 5. ABSTRACT (REQUIRED):

**Title:** Surgical management of macular holes with 3 years of follow-up

**Author and Co-authors:** Brasil OF, Brasil OM, Badaro E, Navarro RM, Maia M

**Purpose:** To determine prognostic factors, anatomic success rate and safety of sutureless pars plana vitrectomy and vitreous base removal associated to internal limiting membrane (ILM) peeling, C3F8 injection and 1-day facedown postoperative positioning to manage idiopathic macular holes (MHs) at 3 years follow-up.

**Methods:** Retrospective study from patients charts and videos review. Inclusion Criteria: Idiopathic macular holes with less than 2 years history, Exclusion Criteria: Previous vitreoretinal surgery and other ocular comorbidities, Surgical technique: Eyes underwent pars plana vitrectomy or combined phaco vitrectomy (if more than 50 years old), vitreous base shaving, ILM peeling after brilliant blue 0.05 mg/ml staining, and C3F8 gas tamponade. Patients remained facedown for 1 day postoperatively. Follow-up: Measurement of best-corrected visual acuity (BCVA) and optical coherence tomography (OCT) at 1, 6, 12, 24 and 36 months postoperatively. If the MHs was not anatomically closed by 1 month, another procedure was performed. Statistical analysis: BCVA improvement from baseline to final follow up was performed by student t-Test. P-values < 0.05 were statistically significant.

**Results:** Forty-six eyes with were included. Primary and final anatomical closure rates were 91.3% and 97.8%, respectively. Mean BCVA improvement from baseline was 0.378 logMAR (range, 0.0-0.9, p<0.05). No late MH reopening occurred, no surgery-related or ocular dye-related complications developed. The BCVA was less likely to improve in MHs with longer symptomatic periods or larger internal diameters.

**Conclusion:** Pars plana vitrectomy combined with vitreous base removal and ILM peeling using brilliant blue 0.05% associated to C3F8 injection and 1-day facedown postoperative positioning for idiopathic MHs is a safe surgical approach, achieving a MH closure rate of 91.3% after one procedure and 97.8% after a second one. Long symptoms duration and larger inner MH diameter are associated with poor BCVA.

**Keywords:** Macular Hole; Chromovitrectomy; Brilliant Blue

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

**Name:** Rafael Ramos Caiado - PG1

**e-mail:** [rrcaiado@hotmail.com](mailto:rrcaiado@hotmail.com)

**Service:** (RE) RETINA AND VITREOUS

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### 5. ABSTRACT (REQUIRED):

**Title:** A New Dye Based On Anthocyanins From The Acai Fruit (Euterpe Oleracea) For Chromovitrectomy In Humans: Results From A Phase I Trial

**Author and Co-authors:** Rafael Caiado, Cristiane Peris, Acácio Souza, Andre Maia, Octaviano Magalhães, Eduardo Rodrigues, Michel Farah, Mauricio Maia.

**Purpose:** The aim of this study was to test the efficacy and safety profile of a new dye based on anthocyanins from the açai fruit (Euterpe oleracea) at a 25% concentration for the identification of the posterior hyaloid membrane and internal limiting membrane (ILM) during sutureless pars plana vitrectomy (PPV) in human eyes diagnosed with macular holes.

**Methods:** The Ethics Committee of the Federal University of Sao Paulo approved the study protocol of a phase I clinical trial in 25 human eyes. Patients diagnosed with idiopathic macular hole, of both genders, older than 18 years were included in this study. Patients were excluded if they had glaucoma, a previous or present intraocular infection, and any other important ocular condition that could affect or limit the postoperative results. Surgical technique: 23-gauge four-port PPV + phacoemulsification, posterior hyaloid detachment, and ILM peeling guided by the dye followed by injection of perfluoropropane and 5 days of prone positioning. Questionnaire: 10 surgeons were asked to answer about the dye's ability to stain posterior hyaloid membranes and ILMs. Dye toxicity was analyzed by anatomic and functional examinations before surgery and at days 1, 30 and 180. The anatomic analysis of tested eyes included best-corrected visual acuity (BCVA), tonometry, biomicroscopy, funduscopy, fundus imaging, fluorescein angiography (FA), optical coherence tomography (OCT) and optical coherence tomography angiography (OCTA). Functional analysis was performed by eletroretinography (ERG).

**Results:** No abnormalities that would suggest toxicity were observed after both anatomical and functional analysis. The anatomical outcomes of the surgeries showed a closure rate of 19 out of 25 operated eyes. All surgeons reported that the açai fruit dye at a 25% concentration stained the posterior hyaloid detachment and staining the ILM with a purple color.

**Conclusion:** Preliminary results showed that the new dye based on anthocyanins from the açai fruit at a 25% concentration was safe and useful for identifying posterior hyaloid and ILM during vitreoretinal surgery in humans. This purple dye may be an alternative to chromovitrectomy. Additional studies are necessary.

**Keywords:** acai fruit, anthocyanins, chromovitrectomy, Euterpe oleracea.

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### 20. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Ricardo Salles Cauduro - PG1

**e-mail:** [cauduro.ricardo@gmail.com](mailto:cauduro.ricardo@gmail.com)

**Service:** (US) OCULAR ULTRASOUND

**CEP Number:** 515805

### 5. ABSTRACT (REQUIRED):

**Title:** Eye Growth and Refractive Errors in Preterm Infants

**Author and Co-authors:** Ricardo Salles Cauduro, Norma Allemann

**Purpose:** To document ocular growth using biometric measurements in preterm infants with or without retinopathy. Axial length has been considered a parameter to evaluate ocular growth in infants and can be correlated to refractive errors.

**Methods:** Observational prospective study of a population of preterm infants in the intensive care unit (ICU) including 120 eyes. Follow-up evaluation was performed every 2 weeks until 6 weeks after birth. Inclusion criteria included weight at birth under 1500 g or premature birth at 32 gestational weeks. Ocular biometric parameters were evaluated with contact B-scan ultrasound (7.5-15 MHz transducer, Mylab Esaote) including: anterior chamber depth, lens thickness and axial length of both eyes. Additional evaluation included: refraction with retinoscopy, indirect ophthalmoscopy with 28 D lens and pediatric biometric parameters recorded (head circumference, weight and height chart). If retinopathy of prematurity (ROP) was detected, it was classified according to the Committee for the Classifications of ROP.

**Results:** Total n: 120 eyes, 60 patients (29 female: 31 male). ROP n: 48 eyes, 24 patients (13 female: 11 male) ROP 1/ ROP 2. Statistical significance was found for 2 parameters: lens thickness (No ROP Group=3.98 ± (3.93 4.02) mm, ROP Group=4.04 ± (4.00 4.08)mm, p=0.02) and refraction (No ROP Group: 1.75 ± 0.96 (1.55 1.95)D, ROP Group: 2.43 ± (1.98 2.87)D, p=0.01).

**Conclusion:** ROP group was significantly different considering increased lens thickness and higher refraction errors.

**Keywords:** Eye Ultrasound, Infants, Preterm, Prematurity, Retinopathy.



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Keywords

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### 21. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Renato Magalhaes Passos - PG1  
**e-mail:** [renatompasos@yahoo.com.br](mailto:renatompasos@yahoo.com.br)

**Service:** (RE) RETINA AND VITREOUS  
**CEP Number:** 0733/10

### 5. ABSTRACT (REQUIRED):

**Title:** Comparison of 577nm Multispot Versus Standard Single Spot Photocoagulation for Diabetic Retinopathy

**Author and Co-authors:** Renato Passos, José Belucio-Neto, Camilla Xavier, Eduardo Novais, Mauricio Maia, Michel Eid Farah

**Purpose:** To evaluate anatomical and functional outcomes in patients with diabetic retinopathy (DR) treated with panretinal photocoagulation (PRP) with 577nm Multispot laser vs Standard 532nm single-spot laser, comparing laser parameters and patient tolerance.

**Methods:** Single-center, randomized clinical trial involving 41 eyes with proliferative or severe non-proliferative DR. Eyes previously treated with laser or intravitreal drugs in the past 6 months were excluded. Baseline exams performed were best corrected visual acuity (BCVA), OCT and fluorescein angiography. Patients were then randomly allocated to one of 2 possible treatment arms, either using 577nm multispot laser with 20ms exposure time (group 1) or 532nm single-spot laser with 100ms exposure time (group 2). Exams were repeated 6 and 12 months after treatment. The main outcome was BCVA, and secondary outcomes were FA and OCT changes, laser parameters, number of sessions required for PRP and patient tolerance measured through a subjective pain scale.

**Results:** Group 1 (n=21) baseline BCVA  $0,2 \pm 0,2$  and central retinal thickness (CRT)  $259,5 \pm 92,1 \mu\text{m}$ , treatment was divided in  $2,7 \pm 0,6$  sessions, delivering  $2504 \pm 377$  spots. Patients' reported pain (subjective 1-10 scale) was  $4,9 \pm 2,4$  and photophobia  $5,0 \pm 3,0$ . After 12 months, mean BCVA  $0,3 \pm 0,3$  and CRT  $258,4 \pm 62,1$ , OCT evidenced change in vitreomacular interface in 56,3% of patients, macular edema improved in 43,8%. Group 2 (n=20) baseline BCVA  $0,5 \pm 0,4$  and CRT  $333,0 \pm 186,4 \mu\text{m}$ , Number of spots  $1287 \pm 187$  divided in  $3,9 \pm 0,7$  sessions, mean pain  $5,9 \pm 2,2$  and photophobia  $5,6 \pm 2,1$ . In the 12-month visit, mean BCVA  $0,6 \pm 0,4$  and CRT  $246,8 \pm 102 \mu\text{m}$ , OCT showed vitreomacular interface change in 52,6% of patients and macular edema improved in 52,6%. Angiographic evaluation 12 months after PRP in group 1 showed improvement in most features analyzed, ranging from 37,5 (new vessels) to 75% (MA/MH), those numbers in group 2 ranged from 42,1 to 57,9%.

**Conclusion:** 577nm multispot laser, compared to 532nm single-spot, requires a smaller number of sessions for completing PRP, while increasing treatment density by delivering a larger number of spots to compensate for the lower fluency/exposure time. Both groups maintained the initial visual acuity and CRT and both treatments were able to induce vitreomacular interface changes and improve macular edema in around 50% of cases, while also providing similar angiographic improvements after 12 months. However, the regression of new vessels seemed to respond less efficiently to laser treatment within a 12-month follow-up. This seems to be related to the severity of baseline disease and bad systemic control, rather than the treatment modality employed.

**Keywords:** laser, panretinal photocoagulation, diabetic retinopathy

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**(RE) RETINA AND VITREOUS**

22. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Rodrigo Antonio Brant Fernandes - PG1  
**e-mail:** rodrigo.brant@ophthal.com.br

**Service:** (RE) RETINA AND VITREOUS  
**CEP Number:** 195748

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

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5. ABSTRACT (REQUIRED):

**Title:** Stem Cell Derived Therapy for Stargardt's Disease: A Phase I Trial

**Author and Co-authors:** Rodrigo A. Brant Fernandes , Fernando Lojudice, Priscila Cristovam, Vinicius Ferreira Kniggendorf, Elmar Torres Neto, Octaviano Magalhaes Jr, Andre Maia, Juliana Sallum, Mari Sogayar, Rubens Belfort Jr, Mauricio Maia

**Purpose:** To develop a safety and feasibility of surgical procedure for subretinal implantation in Stargardt's disease patients of human embryonic stem cell-derived retinal pigmented epithelium (hESC-RPE).

**Methods:** Six patients with Stargardt's disease received a hESC-RPE solution (2 million cells/ 0,1 ml) implanted into the subretinal space. The surgery consisted of phacoemulsification, IOL insertion, pars plana vitrectomy, induction of a limited retinal detachment using a 41-gauge polyamide translocation cannula and subretinal injection of cells solution followed by fluid-air exchange and positioning. 1mg/kg of oral prednisone and 5mg/kg of cyclosporine was administered from day 1 until the 3 months follow-up. Patients were evaluated pre and postoperatively by ophthalmological exam as well as systemic workout to rule out metastatic disease and ancillary examination comprising imaging as well as electrophysiological tests. Student t-Test was used for statistical analysis.

**Results:** The best-corrected VA (BCVA) changed significantly ( $p=0.027$ ) from the mean baseline  $0.225 \pm 0.526$  standard deviation (SD) logarithm of the minimum angle of resolution (logMAR) (median, 0.014, range,  $<0.005-1.300$ ) to  $0.851 \pm 0.440$  logMAR (median, 0.95, range,  $0.005-1.300$ ) at 1 year. The BCVA and visual field and electrophysiologic tests improved in all patients, however, electrophysiologic data showed a slightly reduced amplitude in the perimacular region. No adverse effects, inflammatory reactions, surgery-related complications or systemic cellular migration occurred during the 12 months follow-up. Intraoperative OCT was an important tool to guide the subretinal saline injection and subsequent subretinal cell solution injection.

**Conclusion:** Subretinal implantation of hESC-RPE guided by intraoperative OCT in a cellular concentration five-fold higher than previously reported in the literature was feasible and safe without cellular migration, signs of rejection, inflammation, or development of ocular or systemic tumors during the 1 year follow-up.

**Keywords:** STEM CELLS; STARGARDT'S DISEASE; INTRAOPERATIVE OCT

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### 23. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Ana Luiza Bassoli Scoralick Delgado - PG1  
**e-mail:** albscoralick@gmail.com

**Service:** (GL) GLAUCOMA  
**CEP Number:** 05410-000

### 5. ABSTRACT (REQUIRED):

**Title:** Can Intraocular Pressure Variation Parameters Distinguish Between Eyes With Stable And Progressive Glaucoma?

**Author and Co-authors:** Ana Luiza B Scoralick, Diego T Dias, Izabela Almeida, Michele Ushida, Carolina P B Gracitelli, SyrilDorairaj, Fábio N Kanadani, Augusto Paranhos Jr, Tiago S Prata

**Purpose:** To investigate the association between long and short-term intraocular pressure (IOP) variation parameters (mean, peak and fluctuation) and disease progression in patients with primary open-angle glaucoma (POAG).

**Methods:** A case control study was carried out including consecutive POAG patients with recently documented disease progression and patients with stable disease (target ratio=1:2). Glaucoma progression was defined based on previously described structural and functional criteria. Key inclusion criteria for stable glaucoma were:  $\geq 5$  visual field (VF) tests,  $\geq 3$  disc photographs, and  $\geq 3$  years of follow-up without any changes on current medical regimen. Stable OAG was defined as non progressive VF results and absence of anatomical changes for at least 3 years. Long-term parameters were obtained through isolated IOP measurement from each visit. To evaluate short-term IOP parameters, patients were submitted to a water-drinking test (WDT). Factors possibly associated with disease progression were investigated using logistic regression. Areas under the receiver operating characteristic curves (AUCs) were generated for each parameter.

**Results:** A total of 93 eyes (93 patients) were included (26 eyes in the study group and 67 eyes in the control group). There was no significant difference in demographic characteristics between groups ( $p \geq 0.15$ ), besides visual field mean deviation index (VFMD) values ( $p < 0.01$ ). None of the IOP variation parameters was significantly associated with disease progression ( $p \geq 0.15$ ). Older age and VFMD were associated with glaucoma progression in the univariable analysis ( $p \geq 0.04$ ). Only VFMD remained significant in the multivariable model (OR, 7.6,  $p < 0.01$ ). Overall, AUCs varied from 0.51 to 0.59. Considering the WDT IOP peak results, sensitivity, specificity and accuracy values were 38%, 60% and 53.7%, respectively.

**Conclusion:** Our results suggest that neither long-term IOP parameters nor WDT results can distinguish between eyes with stable and progressive glaucoma. Other factors (such as age and disease stage), likely related to individual susceptibility to glaucomatous damage, seems to play an important role, independent of the IOP level.

**Keywords:** glaucoma; intraocular pressure; water drinking test

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

**Name:** Carolina P. B. Gracitelli - Post-doc

**e-mail:** [carolepm@gmail.com](mailto:carolepm@gmail.com)

**Service:** (GL) GLAUCOMA

**CEP Number:** 262470

### 5. ABSTRACT (REQUIRED):

**Title:** Evaluation of Occipital Cortex in Glaucoma Patients using 3-Tesla Magnetic Resonance Imaging

**Author and Co-authors:** Gracitelli, C.P., Duque-Chica, G.L., Sanches, L.G., Moura, A.L., Nagy, B.V., Teixeira, S. H., Amaro, Edson, Ventura, D.F., Paranhos Jr., Augusto

**Purpose:** To evaluate the occipital cortex in glaucomatous patients using 3-Tesla high-speed magnetic resonance (MR) imaging and its association with structural and functional damage in patients with glaucoma and controls.

**Methods:** This was a cross-sectional prospective study including healthy volunteers and glaucoma patients. All participants performed SITA-standard 24-2 automated perimetry (SAP), frequency doubling perimetry (FDT) (psychophysical tests), optic disc stereophotograph, spectral-domain optical coherence tomography (Cirrus HD-OCT), and MR. Comparison between healthy control patients and glaucoma was performed using ttest. Correlation between MR findings and structural and functional damage was performed using linear regression.

**Results:** 30 glaucoma patients and 18 healthy volunteers were included. Average SAP 24-2 mean deviation (MD) for glaucoma and healthy group were  $-10.20 \pm 9.67$  dB and  $-1.60 \pm 2.30$  dB, respectively ( $p < 0.001$ ). There was a significant difference between the area of occipital pole in left hemisphere in glaucoma group (mean:  $1253.9 \pm 149.3$  mm<sup>2</sup>) and in the control group (mean:  $1341.9 \pm 129.8$  mm<sup>2</sup>),  $p = 0.043$ . There was also a significant difference between the area of occipital pole in right hemisphere in glaucoma group (mean:  $1910.5 \pm 309.4$  mm<sup>2</sup>) and in the control group (mean:  $2089.1 \pm 164.2$  mm<sup>2</sup>),  $p = 0.029$ . There was also a significant difference between different glaucoma levels (mild, moderate and severe glaucoma according to SAP 24-2 MD level), in the area of the right and left occipital lobes ( $p = 0.003$  and  $p = 0.032$ , respectively). Area of occipital pole in the left hemisphere was significantly associated with SAP 24-2 MD, visual acuity, age and RNFL ( $p = 0.001$ ,  $P < 0.001$ ,  $p = 0.010$ ,  $p = 0.006$ , respectively). Additionally, area of occipital pole in the right hemisphere was significantly associated with SAP 24-2 MD, VFI from SAP 24-2, visual acuity, age and RNFL ( $p < 0.001$ ,  $p = 0.007$ ,  $P < 0.001$ ,  $p = 0.046$ ,  $p < 0.001$ , respectively).

**Conclusion:** Glaucoma patients presented a significant difference in area of occipital pole on the left and right hemisphere. Moreover, bilateral occipital pole surface areas were independently associated with functional and structural ocular parameters from glaucoma patients.

**Keywords:** 3-Tesla; occipital; glaucoma; magnetic resonance imaging; occipital pole; functional parameters.

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Purpose  
Methods  
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### 25. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Diego Torres Dias - PGO  
**e-mail:** [diego.torres@outlook.com.br](mailto:diego.torres@outlook.com.br)

**Service:** (GL) GLAUCOMA  
**CEP Number:** 5303000

### 5. ABSTRACT (REQUIRED):

**Title:** Subtenon Triamcinolone Acetonide As An Adjunctive To Mitomycin-Enhanced Trabeculectomy In Primary Glaucomas: A Randomized Clinical Trial

**Author and Co-authors:** Diego T Dias, MD1,2, Izabela Almeida, MD1,2, Michele Ushida, MD2, Flavio S Lopes, MD1, Fãbio N Kanadani, MD, PhD1, Tiago S Prata, MD, PhD1,2

1Department of Ophthalmology, Federal University of São Paulo, São Paulo, Brazil, 2Glaucoma Unit, Hospital Medicina dos Olhos - HMO, Osasco, Brazil.

**Purpose:** To compare the surgical outcomes of mitomycin-enhanced trabeculectomy (MMC-TRAB) with and without subtenon triamcinolone acetonide (TAAC) injection in patients with primary glaucomas.

**Methods:** We designed an unicentric randomized clinical trial. Consecutive patients with clinically uncontrolled primary glaucomas were enrolled, and those meeting the inclusion criteria were randomized into two groups. All eyes were submitted to standard MMC-TRAB. Eyes in the TAAC group received a subtenon TAAC injection (4mg) close to the bleb site at the end of the surgery. Post-operative visits were scheduled at months 1, 3, 6, 12, 18 and 24. Main outcomes measures were intraocular pressure (IOP) and number of medications at all timepoints, and success rates. Success was defined according to two different IOP criteria: criterion I= $IOP \geq 18$ mmHg, criterion II= $IOP \geq 15$ mmHg, and subdivided in complete or qualified according to the need of medication.

**Results:** At this point, we present the 6-month follow-up pooled data. A total of 65 patients were included (study group=33 eyes, control group=32 eyes). The only significant difference at baseline was that TAAC patients were younger than controls ( $61.9 \pm 10.5$  vs  $68.3 \pm 10.8$  years,  $p=0.02$ ). At 6 months, complete success rates were higher in the TAAC group (Criterion I: 90.91% vs 75%,  $p=0.06$ , Criterion II: 90.91% vs 68.75%,  $p=0.01$ ). At 6 months, mean IOP did not differ significantly between groups ( $9.9 \pm 4.8$  vs  $10.8 \pm 4.5$ ,  $p=0.46$ ), but there was a trend for a lower number of medications ( $0.15 \pm 0.5$  vs  $0.35 \pm 0.6$ ,  $p=0.19$ ) and for a smaller percentage of eyes requiring medication (9.4% vs 25%,  $p=0.16$ ) in the TAAC group.

**Conclusion:** Complete success rates at 6 months of follow-up were improved by the use of subtenon TAAC as an adjuvant to standard trabeculectomy with MMC in patients with primary glaucomas.

**Keywords:** glaucoma, trabeculectomy, triamcinolone.

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### 26. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Elise V. Taniguchi - PG1  
**e-mail:** [elise\\_taniguchi@hob.med.br](mailto:elise_taniguchi@hob.med.br)

**Service:** (GL) GLAUCOMA  
**CEP Number:** 1971313

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### 5. ABSTRACT (REQUIRED):

**Title:** Comparison of Vascular Characteristics of Open Angle Glaucoma and Healthy Controls

**Author and Co-authors:** Elise V. Taniguchi, MD, Izabela Almeida, MD, Cecília Agapito, MD, Carolina Gracitelli, MD, PhD, Claudio Z. Lobos, Letícia Sant'Ana, MD, Cristiane Kayser, MD, PhD, Tiago Prata, MD, PhD, Augusto Paranhos, MD, PhD

**Purpose:** To evaluate ocular and systemic vascular features of open angle glaucoma (OAG) and healthy controls, using optical coherence tomography angiography (OCT-A), nail-fold capillaroscopy, laser Doppler imaging and rheumatology blood tests.

**Methods:** Twelve open angle glaucoma patients, with visual acuity better than 20/60, and no previous glaucoma surgeries in at least one eye were recruited to this study, along with 06 age-matched healthy subjects. OCT-A (DRI OCT Triton, Topcon, Japan) was performed in both eyes of all subjects and each set of scans comprised a 3 x 3 mm and a 4.5 x 4.5 mm image of the optic nerve head. Nail-fold capillaroscopy (Stereo Microscope SZ40, Olympus, Japan) was performed in all fingers of both hands, except thumbs and the following parameters were evaluated: number of capillaries per millimeter, number of hemorrhages, number of dilated loops and presence of giant capillary loops, Laser Doppler imaging (Moor LDI-VR, Moor Instruments, Axminster, UK) was used to measure fingertip blood flow (FBF) on the non-dominant hand in the following time points: Baseline, 1, 10 and 20 minutes after cold stimulus at 14C (CS). Measurements are expressed as perfusion unit (PU). Rheumatology blood tests include antinuclear antibody, extractable nuclear antigens, anti-DNA antibodies and endothelin 1.

**Results:** Preliminary results show that 66.7% of OAG patients presented with nail-fold abnormalities versus 16.7% of healthy controls ( $p=0.04$ , Chi-Square). There was no significant difference in the mean baseline FBF of OAG patients and controls ( $342.2 \pm 96.9$  vs.  $352.7 \pm 122.4$  PU, respectively,  $p=0.9$ ). However, there was a significant decrease in FBF 1 min after CS in OAG patients in comparison to healthy controls ( $249.7 \pm 73.3$  vs.  $262.6 \pm 67.4$ , respectively,  $p=0.038$ ).

**Conclusion:** While larger sample sizes are needed, these preliminary results support systemic vascular abnormalities in OAG.

**Keywords:** Open angle glaucoma; OCT Angiography; Capillaroscopy; Laser Doppler Imaging

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### 27. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Izabela Negrao Frota de Almeida - PG1

**e-mail:** [almeidaizabela@gmail.com](mailto:almeidaizabela@gmail.com)

**Service:** (GL) GLAUCOMA

**CEP Number:** 1285/2016

### 5. ABSTRACT (REQUIRED):

**Title:** Nailfold Capillaroscopy And Laser Doppler Flowmetry Analyses In Glaucoma: Comparison Of Vascular Parameters Between Eyes With High And Low-Tension Optic Disc Hemorrhage

**Author and Co-authors:** Izabela Almeida, MD,1,2 Elise Taniguchi, MD,1 Cecília Victoria Agapito Tito, MD,1 Claudio Zett,1 Carolina Pelegrini Barbosa Gracitelli, MD, PhD1, Sérgio H. Teixeira, MD, PhD,1 Cristiane Kayser, MD, PhD,1 Augusto Paranhos Jr, MD, PhD,1 Tiago S Prata, MD, PhD1,2  
1Federal University of São Paulo, São

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

**Methods:** In this prospective study, we examined consecutive OAG patients for the presence of DHs. Glaucoma was defined as glaucomatous optic neuropathy and reproducible visual field defects. Disc photographs of all patients were evaluated for the presence of DH by two glaucoma specialists. Patients were classified as HTDH if presenting with an intraocular pressure (IOP)>13 mmHg at the time of DH detection (median split). Those with an IOP<#8804,13 mmHg were classified as LTDH. Clinical and ocular data from the time of DH detection were collected. In addition, nailfold capillaroscopy and Laser Doppler Imaging of all fingers were evaluated, except for the thumbs. Laser Doppler Imaging was performed before and after cold stimulation by immersion of both hands in water at 15°C for 60 seconds, followed by monitoring of blood flow at 1, 10 and 20 minutes after cold stimulus.

**Results:** Twenty-three patients were included, with a mean of 61±12 years and a mean IOP of 13.6±3.8 mmHg. There was no significant difference in demographic and ocular data between groups. The nailfold capillaroscopy of both groups was altered in more than 60% of the cases (qualitative analysis). Blood flow measurement values in LTDH patients were lower than those observed in patients with HTDH 10 minutes after cold stimulus (239±108 vs 337±111, p=0.04).

**Conclusion:** Our interim results suggest that over 60% of the OAG patients with DH present nailfold capillaroscopy abnormalities. Patients developing DH with lower IOPs tend to have more peripheral vascular dysfunction (than those with higher IOPs), as estimated by Laser Doppler Imaging.

**Keywords:** Open angle glaucoma; disk hemorrhage; vascular evaluation; nailfold capillaroscopy; Laser Doppler Imaging.

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### 28. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Koiti Uchida Hamada - PIBIC

**e-mail:** [Ktpg77@gmail.com](mailto:Ktpg77@gmail.com)

**Service:** (GL) GLAUCOMA

**CEP Number:** 77103517.

### 5. ABSTRACT (REQUIRED):

**Title:** Improvement of Reading Performance in Patients with Glaucoma

**Author and Co-authors:** Hamada KU<sup>1</sup>, Bando AH<sup>1</sup>, Prata, ST<sup>1</sup>, Lago OC, Gracitelli CP<sup>1</sup>, Paranhos Jr. A<sup>1</sup>

<sup>1</sup>Federal University of São Paulo, São Paulo, Brazil, Department of Ophthalmology and Vision Science, Federal University of São Paulo, São Paulo, Brazil

**Purpose:** To evaluate the reading performance in patients with glaucoma using the MNREAD (Minnesota Low Vision Reading Test) app for iPad with and without modifications in the text, such as increase contrast sensitivity or bigger size print.

**Methods:** This is a cross-sectional prospective study including 12 glaucoma patients. Glaucoma patients were defined based on the presence of repeatable standard automatic perimetry (SAP) defects at time of evaluation in at least one eye. A detailed ophthalmological examination was performed on each subject. All patients had repeatable SAP (at least 2) and all patients performed a reading performance test based on the iPad app of the MNREAD performance test, translated and validated to Portuguese. Only, glaucoma patients with at least visual acuity better than 0.5 logMAR in both eyes were included. Speed-reading was assessed as the main reading performance. The association between reading performance and the best-corrected visual acuity (VA) and the visual field loss of the better and worse eye were investigated. Comparison between bigger and smaller size print, as well as higher contrast and smaller contrast level was assessed using ttest. The potential impact factors (socioeconomic and comorbidities index) to reading performance of glaucoma patients were further analyzed by multiple regression analysis.

**Results:** There is significant difference in average speed-reading when size print was increased in glaucoma subjects (108.83±33.10 seconds and 104.89 seconds respectively, p = 0.004). There is significant difference in average speed-reading when the contrast was improved in glaucoma subjects (117.47±36.43 seconds and 108.27±36.32 seconds respectively, p < 0.001). There is no association between reading performance and the best-corrected visual acuity (VA) and the visual field loss of the better and worse eye, even adjusting for socioeconomic and comorbidities index.

**Conclusion:** Patients with glaucoma improved the reading performance when the bigger size print and contrast level was increased. These interventions may help patients in their daily activities. Further studies with more interventions may allow us to elucidate the best tool to improve the reading performance in these glaucoma patients.

**Keywords:** glaucoma, reading performance



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### 29. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Lilian Franca Machado - R3  
**e-mail:** [lilianmachado77@gmail.com](mailto:lilianmachado77@gmail.com)

**Service:** (GL) GLAUCOMA  
**CEP Number:** 0

### 5. ABSTRACT (REQUIRED):

**Title:** The Association of Ocular Surface Disease with Quality of Life in Patients with Glaucoma

**Author and Co-authors:** Lilian F. Machado, Renata C. Portela, Nikoly T. Fares, Amanda Foguel, Tiago S Prata, Augusto Paranhos Jr. Carolina P. B. Gracitelli

**Purpose:** To evaluate the association of ocular surface disease (OSD) and quality of life in patients with glaucoma who used topical intraocular pressure-lowering therapies.

**Methods:** This was a prospective cross-sectional study including 9 glaucoma patients and 8 subjects with cataract (control group). Only glaucoma patients who were using at least 1 topical IOP-lowering medication were included. A detailed ophthalmological examination was performed on each subject. Ocular surface disease was evaluated using tear break-up time (TBUT), corneal fluorescein staining (conjunctival hyperemia), biomicroscopy showing presence or absence of keratitis, and the Ocular Surface Disease Index (OSDI) questionnaire. OSDI scores higher than 13 indicated a clinically relevant presence of OSD. All patients underwent to keratograph analysis: non-invasive keratograph BUT, meibography quantification, tear meniscus height, and redness scale). And the impact of glaucoma on QoL has previously been investigated using questionnaire-based self-reported assessments, such as the National Eye Institute Visual Function Questionnaire (NEI VFQ-25). The correlations of OSD and the QoL score were investigated.

**Results:** Mean age was similar in the cataract and glaucoma group ( $69.25 \pm 5.63$  vs.  $65.00 \pm 12.64$  years, respectively,  $P=0.663$ ). Visual acuity of the better and worse eye was similar in both groups ( $P=0.377$  and  $P=0.340$ , respectively). There was no significant difference between socioeconomic and commodities index for control and glaucoma groups ( $P>0.05$  for all comparisons). There was a significant difference for OSD: conjunctival hyperemia, and keratitis were worse in glaucoma group ( $P=0.005$  and  $P=0.007$ , respectively).. There was a significant relationship between presence of keratitis and QoL scores, even adjusting for socio-economic and clinical parameters ( $R^2=25\%$ ,  $P<0.027$ ). There was no significant relationship between keratograph parameters and QoL scores ( $P>0.05$  for all comparisons).

**Conclusion:** Patients with glaucoma had more ocular surface disease measured by clinical evaluation. However, the only parameter associated with worse QoL was the presence of keratitis. The OSD may impact in QoL of patients with glaucoma.

**Keywords:** Glaucoma; ocular surface disease; and quality of life

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### 30. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Nikoly Tigani Fares - R3  
**e-mail:** nik.fares@yahoo.com.br

**Service:** (GL) GLAUCOMA  
**CEP Number:** 2035292

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### 5. ABSTRACT (REQUIRED):

**Title:** Effect Of Preoperative Use Of Steroid Eyedrops In Glaucoma Patient And Its Outcomes After Trabeculectomy

**Author and Co-authors:** Nikoly Tigani Fares, Renata C. Portela, Denise de Freitas, Augusto Paranhos Jr. , Tiago S. Prata e Carolina P. B. Gracitelli

**Purpose:** The aim of this study was to investigate the benefit of preoperative treatment with steroid eyedrops in OSD before trabeculectomy.

**Methods:** A prospective study was carried out in which 30 glaucoma patients. Only glaucoma patients who were using at least 3 topical IOP-lowering medications were included. All patients were treated with loteprednol etabonate ophthalmic suspension 0.5% qid for 1 week before trabeculectomy. Baseline (at the day of surgery) and follow-up visit (2 weeks after surgery) was included. A detailed ophthalmological examination was performed in all patients. OSD was evaluated using Ocular Surface Disease Index (OSDI) questionnaire and clinical measures: tear break-up time (TBUT), corneal fluorescein staining (conjunctival hyperemia), and biomicroscopy showing presence or absence of keratitis. OSDI scores higher than 13 indicated a clinically relevant presence of OSD. All patients underwent to keratograph analysis: non-invasive keratograph BUT, meibography quantification, tear meniscus height, and redness scale. The comparison of OSD before and after trabeculectomy was assessed using paired test.

**Results:** Mean age in glaucoma subjects was  $74.00 \pm 11.23$  years. Average visual acuity of the better and worse eye of glaucoma subjects were  $0.61 \pm 0.39$  and  $0.68 \pm 0.30$  LogMAR, respectively. Average conjunctival hyperemia of glaucoma subjects before and after treatment were  $0.69 \pm 0.75$  crosses and  $1.46 \pm 0.88$  crosses, respectively ( $P=0.002$ ). Average keratitis of glaucoma subjects before and after treatment were  $72.8 \pm 8.5$  units and  $74.2 \pm 8.4$  units, respectively ( $P=0.668$ ). There is no significant difference in TBUT of glaucoma subjects before and after treatment ( $P=0.096$ ). For the keratograph analysis (non-invasive keratograph BUT, meibography quantification, tear meniscus height, and redness scale), the only parameter that was significant different before and after trabeculectomy was the redness scale. Patients after the trabeculectomy presented more conjunctival hyperemia compared before the surgery ( $P=0.002$ ).

**Conclusion:** Although loteprednol etabonate ophthalmic suspension 0.5% may improve OSD in glaucoma patients, this sample presented more conjunctival hyperemia measured by clinical approach and by keratograph analysis. Due to recent trabeculectomy surgery, these patients might present worse OSD.

**Keywords:** glaucoma eyedrops, ocular surface disease, trabeculectomy

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Keywords

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### 31. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Aline Silveira Moriyama - PG1

**e-mail:** [aline\\_moriyama@yahoo.com](mailto:aline_moriyama@yahoo.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 1661326

### 5. ABSTRACT (REQUIRED):

**Title:** Endothelial Viability of Descemet Stripping Endothelial Keratoplasty Donor Grafts Prepared by Femtosecond Laser with Endothelial Applanation versus Automated Microkeratome Dissection

**Author and Co-authors:** Patricia CZ Serapicos, Grazielly P Oliveira, Lucas Storti, Nicolas C Pereira, Adriana S Forseto, Ana Luisa Hofling-Lima

**Purpose:** To compare endothelial viability of Descemet stripping endothelial keratoplasty (DSEK) grafts prepared with femtosecond laser (FSL) cutting from endothelial side with either 80µm or 100 µm, and conventional Descemet stripping automated endothelial keratoplasty (DSAEK) microkeratome preparation.

**Methods:** Fifteen human eye-bank corneal buttons unsuitable for corneal transplantation due to positive serology and with initial endothelial cell density (ECD) > 2200 cells/mm<sup>2</sup> were divided in three groups: corneas cut with Ziemer LDV Z6 FSL from endothelial side with a cutting depth of 100µm (n=5) or 80µm (n=5), and 5 control corneas cut using conventional donor DSAEK preparation with Moria® microkeratome 350µm blade. Initial endothelial cell density (ECD) was determined by specular microscopy. Postcut corneal endothelial viability analysis was performed no longer than 24 hours after the cut and included cell count with Trypan blue and Alizarin red staining, and endothelial cells apoptosis evaluation using TdT-mediated dUTP-biotin nick end labeling (TUNEL) assay.

**Results:** The mean initial specular microscopy ECD of 100µm FSL, 80µm FSL, MK group and overall corneas was 2489.60 cell/mm<sup>2</sup> (±277.50), 2615.80 cell/mm<sup>2</sup> (±203.57), 2464.20 cell/mm<sup>2</sup> (±203.76) and 2523.20 cell/mm<sup>2</sup> (±218.35) respectively. No significant statistical difference was observed among the groups. Postcut Trypan blue and Alizarin red staining ECD was 1690.87 (±232.01) in 100µm FSL group, 1763.08 (±145.01) in 80µm FSL group and 2285.95 (±115.14) in Moria group (figure 1). LDV groups had statistically significant lower ECD than Moria group (P=0.009). The mean count of TUNEL positive cells per field was 141.24 (±15.65) in 100µm FSL, 110.92 (±9.19) in 80µm FSL group and 103.68 (±34.96) in Moria group, with no significant statistical difference (P=0.065) between the groups.

**Conclusion:** FSL DSEK graft preparation showed significantly lower ECD when compared to MK group. Further studies are warranted to determine the clinical significance of this difference.

**Keywords:** endothelial keratoplasty, DSAEK, DSEK, femtosecond laser, endothelial viability

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### 32. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Gustavo Souza Moura - PGO

**e-mail:** [oftalmosergipe@gmail.com](mailto:oftalmosergipe@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 672479

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

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### 5. ABSTRACT (REQUIRED):

**Title:** Characterization of lacrimal inflammatory mediators in Keratoconus patients.

**Author and Co-authors:** Gustavo Souza Moura 1,2 , Lauro Augusto de Oliveira 2 , Luciene Barbosa de Sousa 2 .

1. Sorocaba Eye Bank
2. Ophthalmology and Visual Science - UNIFESP

**Purpose:** This study aims to characterize the tear film immunologic profile in keratoconus (KC) patients. Correlate the immunologic profile with keratometric measurements and with disease progression or stability over time.

**Methods:** The study involved 20 KC patients clinically graded and 9 healthy, nonectatic subjects as controls. Tear levels of 21 cytokines were measured using a bioplex kit (Human High Sensitivity - HSTCMAG28SPMX21, Merck Millipore) following the method suggested by the manufacturer. Keratometric measurements were used as a diagnostic tool for ectatic disease as well as to identify cases of disease progression. Disease progression was defined as an apical keratometric increase of 0.75 D in 6 months evaluation. Correlations between cytokines profile, keratometric measurements and disease status were analyzed longitudinally in the keratoconus group. Cytokines profiles were compared between keratoconus and control group.

**Results:** Preliminary data demonstrated that tear cytokine's concentration (pg/ml) were higher in KC group when compared to control in 19 out of 21 cytokines analyzed. Two cytokines were significantly higher in KC group (IL-5,  $p=0.05$  and IL-6,  $p=0.012$ ). Disease progression analyzed longitudinally in KC group (12 months from baseline) was not correlated to higher level of inflammatory cytokines. Investigation regarding the correlation between cytokine's concentration and KC severity are being processed.

**Conclusion:** Preliminary results from this study demonstrated that inflammation might be involved in the pathogenesis of keratoconus. Disease progression analyzed longitudinally was not associated to higher cytokine levels in this series. A larger sample might corroborate the inflammatory involvement in KC etiology.

**Keywords:** keratoconus; inflammatory mediators

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Keywords

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### 33. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Maria Carolina Marquezan - PG1

**e-mail:** [mcmarquezan@gmail.com](mailto:mcmarquezan@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 71215-770

### 5. ABSTRACT (REQUIRED):

**Title:** Reverse Smile With A New Excimer Treated Biomaterial: New Corneal Shaping.

**Author and Co-authors:** Maria Carolina Marquezan, MD1,2,4, Denise de Freitas, MD, PhD2, Shoumyo Majumdar1,3, Xiaokun Wang PhD1,3, Jennifer Elisseff, PhD1,3, David L. Guyton, MD1, Kraig Scot Bower, MD1, Rubens Belfort Jr MD, PhD2, Albert S. Jun, MD, PhD1

**AFFILIATION** 1Department of Ophthalmology, Cornea and Anterior Segme

**Purpose:** To determine anatomical and optical changes in porcine corneas following insertion of a new biocompatible polymer into the cornea.

**Methods:** The novel shaping agent is a clear, biocompatible, collagen type 1 based vitrigel membrane, with 6 mm diameter. The biomaterial was shaped with the excimer laser on the posterior surface to create three planoconcave shapes and inserted into a manually dissected stromal pocket at approximately 200 micrometer (um) depth. The whole treatment, was respectively, in Group A (3 eyes) 70 um, Group B (3 eyes) it was 64 um, and group C (3 eyes) 104 um, with a central hole. Group D (3 eyes) was included as a control group with creation of a pocket but without insertion of biomaterial. The evaluation of porcine eyes was by Visante® optical coherence tomography and Pentacam® corneal tomography. In the control group imaging was done pre and post performing the pocket, and in groups A, B and C, pre and post inserting the biomaterial.

**Results:** The Pentacam® showed that 100% of group A decreased the keratometry, being flatter, the same result was seen among 33.4% in group B and 66.6% in group C. Performing the pocket resulted in 66.6% steeper cornea in the control group (D). All of the reshaped cornea showed a flatter imaging by the Visante®. The control group did not change the shape.

**Conclusion:** The novel planoconcave biomaterial was able to reshape the cornea in an ex vivo model, resulting in a flatter cornea. This approach could represent a novel treatment for myopia and corneal ectasia.

**Keywords:** corneal reshaping, excimer laser, biomaterial, refractive error  
**FINANCIAL SUPPORT:** None.

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### 34. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Nicolas Cesário Pereira - PG1

**e-mail:** [nicolascepe@gmail.com](mailto:nicolascepe@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 16523813

### 5. ABSTRACT (REQUIRED):

**Title:** Outcomes of Secondary Penetrating Keratoplasty Graft Failure Managed by Descemet Membrane Endothelial Keratoplasty

**Author and Co-authors:** Nicolas Cesário Pereira, Adriana dos Santos Forseto, Michele Wong, Henrique Delloiagono, José Álvaro Pereira Gomes

**Purpose:** To describe the clinical outcomes of Descemet membrane endothelial keratoplasty (DMEK) performed for secondary graft failure after penetrating keratoplasty (PK) by an experienced DMEK surgeon.

**Methods:** Retrospective study, including 47 eyes of 42 patients undergoing DMEK after a secondary PK graft failure by a single surgeon (N.C.P) from July 2014 to July 2017 at Sorocaba Eye Bank /Sorocaba Ophthalmology Hospital. Best-corrected visual acuity, biomicroscopy, previous eyes diseases and complications were evaluated.

**Results:** There were no intraoperative complications. Graft detachment occurred in two eyes (4.2%) with preexisting tube from glaucoma-draining device implanted, and were successfully managed with rebubbling. One eye had a secondary graft failure due to infectious keratitis. Two eyes with preexisting tube from glaucoma-draining device implanted had late secondary graft failure (at 1 and 3 years after DMEK). One patient with 3 previous PK and a vascularized cornea developed graft rejection at 4 months postoperatively and evolved to secondary graft failure. At the last follow-up visit (from 1 month to 3 years), excluding the eyes with low visual potential, 88.5% achieved BSCVA of 20/40 or better, 73% 20/30 or better, 38.4% 20/25 or better and 19.2% 20/20 or better. From the eyes with good visual potential, there were 3 eyes (11.5%) that needed rigid contact lenses for visual rehabilitation. There were 16 eyes with associated ocular conditions as tubes, fixated intraocular lenses or were vitrectomized. A combined procedure was performed in 8 patients with associated cataract.

**Conclusion:** DMEK is a great option to manage secondary graft failure after PK in selected cases, with fast visual rehabilitation and reduced risk of intraoperative complications. Visual rehabilitation can be limited due to associated retinal conditions and irregular corneas. Rebubbling rate was low and associated to preexisting tubes from glaucoma-draining devices.

**Keywords:** endothelial keratoplasty, penetrating keratoplasty

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Purpose  
Methods  
Results  
Conclusion  
Keywords

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**90cm x 120cm**

### 35. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Pablo Felipe Rodrigues - PG1  
**e-mail:** [drpablo.rodrigues@gmail.com](mailto:drpablo.rodrigues@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE  
**CEP Number:** 227496

### 5. ABSTRACT (REQUIRED):

**Title:** Corneal analysis and life quality in individuals with mild keratoconus submitted to sequential or simultaneous corneal crosslinking and intrastromal corneal ring implantation.

**Author and Co-authors:** Rodrigues, Pablo F.; Nosé, Walton; Mannis, Mark; Freitas, Denise

**Purpose:** Evaluate the impact at life quality vision-related of the patients using the Visual Function Questionnaire-36 (VFQ-36) (National Eye Institute) and SF-36 in patients aged 15-35 years with keratoconus stage 2. Before, after 3 and 6 months of each intervention (ICRS, CXL). Evaluate the possibility of synergisms or antagonisms between procedures, tomographic alterations and corneal aberrations, induced visual changes by the procedures.

**Methods:** Three randomized groups (60 patients) with keratinous stage II (Amlser- Krumeich): 1: ICRS implant, after 6 months, CXL, 2: CXL, after 6 months, ICRS implant, 3: Simultaneous procedures.

**Results:** After the life quality research was made and its results converted to points in a scale that 100 points meant the best performance (mostly satisfied) and 0 meant the worse (mostly unsatisfied). In relation to the vision-related life quality preoperative questionnaires it was noticed: among the items contemplated by the study, the General vision was the one that had the lower score, in other words, the worse satisfaction index, with the average of 35,15 points. The index that had the best satisfaction was the Vision-related social activity limitation with 67,53 points. Relevant to point out that the Vision-related mental health symptoms index had a low score: 43,06 points, followed by Vision-related functions limitations: 51,36 points. In the analysis of the global satisfaction index improvement of the patients after 6 months of the treatment, it was noticed the average increase of 16,34 points. Being the indexes with better average score the: General vision (28,24), Vision-related mental health symptoms (23,81), Vision-related functions limitations (19,69), Quality of far (17,52) and Near vision (17,81) and Vision-related social activity limitation (14,75)

**Conclusion:** Although the patients considers their General vision poor (35.15), the detailed analysis for Near (54.35) and Far activities (49.89) show reasonable numbers, so we can infer that patients' complaints are greater than their actual limitation. This is corroborated with the complaints regarding Vision-related mental health symptoms that also present low levels of satisfaction. It was a proven fact when analyzing the postoperative, in which the indexes that showed the greatest increase over the preoperative period were: General vision (28.28) and Mental Health (23.81) when the global mean of the additions was 16.34. Thus, the impact of surgeries on these patients promoted a significant improvement in social inclusion components, reduction of visual interference on mental health and dependence on others. These subjective indexes coincide with the objective findings measured by optical devices and final visual acuity

**Keywords:** keratoconus; life quality; CXL; ICRS implant.

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Keywords

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### 36. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Aline Couto Carneiro - R3  
**e-mail:** [alinecouto.epm@gmail.com](mailto:alinecouto.epm@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE  
**CEP Number:** 0506/2016

### 5. ABSTRACT (REQUIRED):

**Title:** Purpureocillium lilacinum: a challenging keratitis

**Author and Co-authors:** Aline Couto, Mario Roberto de Sousa Trindade, Clara Ezequiel Negri, Ana Luisa Hofling-Lima, Arnaldo Colombo, Denise de Freitas

**Purpose:** Purpose: To analyze cases of ocular infections caused by Purpureocillium lilacinum, formerly called Paecilomyces. This peculiar ocular infection is difficult to treat, the optimal antifungal treatment remains unknown to date, and the outcomes are generally poor.

**Methods:** Methods: Case study with retrospective review of the medical records and use of isolated strains for in vitro" antifungal susceptibility testing.

**Results:** ;Results: Thirteen patients were analyzed. Six developed endophthalmitis (four after phacoemulsification with intraocular lens implantation, one after intravitreal injection of antivascular endothelial growth factor drugs, and one of unknown cause) and six developed keratitis (two associated with soft contact lens wear, one after trauma, one after LASIK, and two of unknown cause). In one case, we had only the culture isolate and no other data. Patients were treated with topical and systemic antifungal drugs (amphotericin B, voriconazole, ketoconazole, itraconazole, fluconazole, and miconazole). Six patients required one or two therapeutic corneal grafts, one required enucleation. Antifungal susceptibility tests showed a minimum inhibitory concentration for itraconazole of 11.9 &#956,g/ml (minimum=1, maximum=16, median=16), for voriconazole 0.34 &#956,g/ml (minimum=0.25, maximum=0.5, median=0.25), for posaconazole 0.73 &#956,g/ml (minimum=0.25, maximum=0.5, median=0.25), and for amphotericin B 13.53 &#956,g/ml (minimum=4, maximum=16, median=16).

**Conclusion:** ;Conclusion: Voriconazole and posoconazole seems to be the best antifungal drugs to treat Purpureocillium isolated from eye infections. Sensitivity testing for filamentous fungi is controversial, but it might support the potential for initial medical treatment of this otherwise devastating form of oculomycosis.

**Keywords:** ;Ocular infections, Fungal keratitis, Purpureocillium lilacinus"



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Purpose  
Methods  
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Keywords

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### 37. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Renata Ruoco Loureiro - PG1

**e-mail:** [renata.ruoco@hotmail.com](mailto:renata.ruoco@hotmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 647707

### 5. ABSTRACT (REQUIRED):

**Title:** Effect of conditioned medium on corneal epithelial cells wound healing

**Author and Co-authors:** Renata Ruoco Loureiro, Priscila Cardoso Cristovam, Joyce Luciana Covre, José Álvaro Pereira Gomes

**Purpose:** To compare the effectiveness of different conditioned media in the healing of corneal epithelium in vitro

**Methods:** The conditioned medium (CM) was collected from limbal epithelial cells (LEC) grown on the plate with 2% and 5% FBS, limbal epithelial cells cultured on the amniotic membrane (LEC-AM) and limbal fibroblasts (LF) cultured on the plate. For the wound healing analysis, corneal epithelial cells were cultured, injured and treated with the previously collected CM and treated with fresh medium (FM) as a control. The epithelial migration was observed during 72 hours. Keratinocyte growth factor (KGF) was quantified in the CM with conventional ELISA assay.

**Results:** The complete healing was observed between 60 - 72 hours in the groups treated with CM from LEC-AM and LF, followed by CM from LEC 5% FBS with a complete healing after 72 hours of treatment. We could not observe an effective epithelial wound healing in the group treated with CM from LEC 2% FBS even after 72 hours of incubation. The presence of KGF was detected only in the CM from LEC-AM and LF. Using this assay, it was not possible to quantify KGF in the other CM tested and in the controls (FM).

**Conclusion:** Our finds suggested that the complete healing of corneal cells is directly linked to the concentration of KGF, an important growth factor that increases the division of stem cells, detected only in the CM of LEC-AM and LF. When we compared FBS concentration in the CM, we note that it also influences cell migration, using CM 5% FBS speeds up corneal epithelial wound healing in vitro when compared to CM 2% FBS. Further studies are under way to identify different growth factors that are involved in the cells migration and to prove the efficacy of the CM the epithelial healing process of the cornea.

**Keywords:** Corneal limbal cells, intercellular signaling proteins, paracrine communication, wound healing

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Purpose  
Methods  
Results,  
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Keywords

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### 38. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Rodrigo Sidi Morizot Leite - PGO

**e-mail:** [rodrigomorizot@hotmail.com](mailto:rodrigomorizot@hotmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 2041783

### 5. ABSTRACT (REQUIRED):

**Title:** Microbial spectrum of Candida keratitis at the Bascom Palmer Eye Institute in Florida and the Paulista School of Medicine in Brazil: a 28-year retrospective study

**Author and Co-authors:** Rodrigo Morizot Md; Arnaldo Colombo Phd ; Analy Salles Phd; Darlene Miller Phd; Ana Luisa Hofling-Lima Phd

**Purpose:** The present study compared causative agents among patients with Candida keratitis treated at the Bascom Palmer Eye Institute in Florida (BP) and Paulista School of Medicine in Brazil (EPM) between 1987 and 2004.

**Methods:** We retrospectively reviewed the microbiology results, sex, and age of patients with culture-positive Candida keratitis treated at BP and EPM between January 1987 and December 2014. Data were compared for four different sub-periods, as follows: 1987-2014, 1987-2004, 2005-2014, and 2013-2014.

**Results:** Among the 169 BP samples obtained between 1987-2014, Candida albicans represented the most common causative agent of corneal keratitis (54%). Candida albicans was identified in 50 of 87 samples (58%) obtained between 1987-2004, 41 of 82 samples obtained between 2005-2014 (50%), and 11 of 21 samples (52%) obtained between 2013-2014 at BP. Among the 119 EPM samples obtained between 1987-2014, Candida albicans also represented the most common causative agent (52%). However, the prevalence of Candida albicans in EPM samples drastically decreased at each interval: 36 of 49 samples (75%) between 1987-2004, 25 of 70 samples (35%) between 2005-2014, and two of 17 samples (12%) between 2013-2014.

**Conclusion:** Our findings demonstrated that Candida albicans was the most common cause of Candida keratitis in patients treated at the Bascom Palmer Eye Institute over the 28-year study period. However, a marked increase in the rate of Candida keratitis caused by non-albicans species was observed among patients treated at the Paulista School of Medicine during the last 10 years of the study period.

**Keywords:** keratitis,Candida,epidemiology,Candida non albicans

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### 39. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Rossen Mihaylov Hazarbassanov - Post-doc

**e-mail:** [hazarbassanov@gmail.com](mailto:hazarbassanov@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 0586/2015

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

### 5. ABSTRACT (REQUIRED):

**Title:** Galectin-1 and -3 as prospective biomarkers in keratoconus patients.

**Author and Co-authors:** Rossen M. Hazarbassanov , Frans Eberth Costa Andrade , Joyce Covre , Myrna Serapião dos Santos , Mauro S. Campos, Jose A. Gomes , Cristiane Damas Gil

**Purpose:** To evaluate the expression of galectin-1 (Gal-1) and -3 (Gal-3) in the keratoconus (KC) diagnosed patients and riboflavin and ultraviolet light effect on human keratocytes cultivated in vitro.

**Methods:** Tear fluid and conjunctival impression cytology specimens from control and KC patients with and without atopy (n = 10/group) were used to evaluate Gal-1 and Gal-3 expression by immunofluorescence and ELISA. Primary human keratocytes were isolated by digestion in collagenase from surgically removed corneas of five normal human corneal buttons and cultured in DMEM/Ham's F12 medium supplemented with 2 % fetal bovine serum. These cells were evaluated under two experimental conditions: control and submitted to the application of UVA light and riboflavin 0.1% for 30 minutes called cross-linking (CXL). After 24 hours of CXL, expression of Gal-1 and Gal-3 in the and their supernatants was performed using immunofluorescence and ELISA, multiplex assay was also done to detect inflammatory biomarkers in supernatants. Student's t-test was used for statistical analysis.

**Results:** Atopic KC patients exhibited increased levels of Gal-1 in the tear fluids ( $14.5 \pm 3$  ng/mL,  $p > 0.05$ ) and epithelial cells of bulbar conjunctiva ( $130 \pm 3$  arbitrary units,  $p < 0.001$ ) compared to control ( $9.8 \pm 0.5$  and  $87 \pm 1.6$ , respectively). On the other hand, non-atopic KC patients exhibited increased levels of Gal-3 in the tear fluid ( $70 \pm 16$  ng/mL,  $p < 0.05$ ), but decreased endogenous expression in conjunctival epithelial cells. In in vitro experiments, keratocytes exhibited intense nuclear Gal-1 expression while Gal-3 was localized especially in the cytoplasm and both were strongly diminished after 24 hours of CXL. Further, CXL induced significant release of Gal-1 in the cell supernatants ( $116 \pm 18$  ng/mL,  $p < 0.05$ ) and decreased inflammatory biomarkers as IL-6, IL-8, MMP-2 and MMP-9. Gal-3 levels was not detected in the keratocyte supernatants

**Conclusion:** Gal-1 and Gal-3 represent new interesting biomarkers as revealed by their different expression patterns in atopic and non-atopic KC patients. CXL has immunosuppressive effect on keratocytes by reducing the release of cytokines and MMPs and increased anti-inflammatory protein Gal-1.

**Keywords:** keratoconus, galectin-1 and -3 , Cross-Linking

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

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### 40. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Bernardo Teixeira Lopes - PG1

**e-mail:** [blopesmed@gmail.com](mailto:blopesmed@gmail.com)

**Service:** (RS) REFRACTIVE SURGERY

**CEP Number:** 250924

### 5. ABSTRACT (REQUIRED):

**Title:** Development and validation of machine learning classifier combining tomography and biomechanics to the diagnosis of corneal ectasia.

**Author and Co-authors:** Bernardo Lopes, MD Renato Ambrósio Jr. MD, PhD

**Purpose:** To develop a machine learning classifier able to identify patterns of corneal ectasia based on corneal shape and biomechanic response (TBI). And to validate this model in an independent population

**Methods:** Retrospective case control-study. The training population was composed of 480 eyes from 480 patients with normal corneas, 204 eyes from 204 patients with bilateral keratoconus and 94 patients with very asymmetric ectasia divided in two groups one with evident ectasia and the other with normal topography (VAE-NT). The independent validation set was composed of 312 eyes from 312 patients with normal corneas, 118 eyes from 118 patients with keratoconus and 67 patients with very asymmetric ectasia. All patients were examined with pentacam corneal tomographer and Corvis ST (Oculus, Wetzlar, Germany). Different machine learning models were trained and cross-validated the one with best accuracy was then external validated in an independent population.

**Results:** In the training set the cross-validated result regarding the detection of clinical ectasia, the best tomographic parameter was the BAD-D AUC:0.956, the best deformation parameter was the CBI: 0.931, the TBI had auc of 0.996 ( $p < 0.001$ ). Regarding the detection of very mild forms (VAE-NT) the AUC of BAD-D was 0.839, of CBI 0.822 and the TBI was 0.985. In external validation set the AUC considering clinical ectasia of TBI was 0.997, BAD-D was 0.976 and CBI 0.932. Considering the VAE-NT the AUC of TBI was 0.939, BAD-D 0.825, CBI 0.801

**Conclusion:** The model combining both data from shape and corneal deformation achieved superior accuracy in identifying even the mild forms of ectasia than data derived from shape or deformation alone.

**Keywords:** Keratoconus, Tomography, Corneal Biomechanics, Scheimpflug Imaging

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**(PL)OCULOPLASTICS SURGERY**

41. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Juliana de Filippi Sartori - PG1

**e-mail:** [juliana@vizarth.com](mailto:juliana@vizarth.com)

**Service:** (PL) OCULOPLASTICS SURGERY

**CEP Number:** 336004604

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Purpose  
Methods  
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Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Temporal comparison of BUT and Schirmer in patients submitted to laser and blepharoplasty

**Author and Co-authors:** Juliana de Filippi Sartori; Ana Vega Carreiro de Freitas; Norma Allemann

**Purpose:** To investigate the tear fluid dynamic changes after upper blepharoplasty and fractional CO2 resurfacing laser in photo damaged periorbital skin treatment.

**Methods:** Prospective study enrolling 18 eyes of 9 subjects between 50 and 65 years old with photo damaged facial skin and dermatochalasis.

All subjects underwent tear film break up time measurement(BUT) and Schirmer test before fractional CO2 laser - Smart Xide ,and after: on the second , seventh and thirtieth day post treatment.

Upper blepharoplasty was performed 30 days after CO2 laser treatment.

BUT and Schirmer measurements from before and after each one of these interventions, were compaired separately.

Repeated Measures ANOVA was used for statistical analysis.

**Results:** Significant differences were found between BUT measurements ( $p < 0.001$ ,  $F = 27.07$ ) before and after laser. BUT values on the second day after laser application were significantly higher than those measured on the following days. The difference between the pre-treatment and the seventh or thirtieth day later was not significant ( $p > 0.05$ ).

At the blepharoplasty group, significant differences were found between the pre and post surgery BUT( $F = 14.49$ ,  $p < 0.001$ ). The preoperative BUT data was significantly lower than the postoperative ones. It was also noted that the second day values were significantly higher than the other day's measurements and no differences were found between the values of the seventh and thirtieth days

For the Schirmer test, no significant differences were found between the measurements ( $F = 1.52$ ,  $p = 0.247$ ) before and after laser therapy. Finally, significant differences were found when comparing the Schirmer test before and after blepharoplasty ( $F = 6.01$ ,  $p = 0.010$ ). Preoperative values were significantly higher than the post operative ones, which did not differ between them.

**Conclusion:** Both, fractional CO2 laser and blepharoplasty affect ocular surface and tear fluid, which can lead either to dryness or tearful eyes. The influence of these procedures at BUT seems to be greater on the second day after the laser and the surgery, period when greater BUT values may be found. Tipically, reduced Schirmer test measurements were obtained after blepharoplasty surgery. While, the CO2 laser use on the lids does not seems to affect the Schirmer measurements.&#937,

**Keywords:** "laser" "blepharoplasty" "ocular surface" "BUT" "Schirmer" "break up time" "fractional CO2 resurfacing laser" "CO2 laser"

## 2017 Research Days Abstract Form

### 2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):

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

**(PL) OCULOPLASTICS SURGERY**

### 42. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Midori Hentona Osaki - PG1  
**e-mail:** [midori\\_osaki@yahoo.com.br](mailto:midori_osaki@yahoo.com.br)

**Service:** (PL) OCULOPLASTICS SURGERY  
**CEP Number:** 1322/2016

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Purpose  
Methods  
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Keywords

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**90cm x 120cm**

### 5. ABSTRACT (REQUIRED):

**Title:** High-speed video analysis to evaluate the effect of botulinum toxin-A in patients with facial dystonias

**Author and Co-authors:** Midori H. Osaki, Tammy H. Osaki, Teissy Osaki, Denny Garcia, Antonio Augusto V. Cruz and Rubens Belfort Jr

**Purpose:** Evaluation of eyelid spasms has not been previously evaluated in facial dystonias patients using video analysis. The purpose of this study is to demonstrate the effect of botulinum toxin-A (BTX-A) applications in patients with essential blepharospasm and hemifacial spasm using a high-speed video system

**Methods:** Ten patients with hemifacial spasm and essential blepharospasm were examined (5 for each group) before and 30 days after BTX-A using a high-speed video camera (Sony IMX035) and micro LED diodes placed in the pretarsal area of the upper lids. We evaluated the frequency of eyelid spasms and symmetry of interocular eyelid motion (SIEM) expressed as the percentage of overlapping movements (0=no symmetry and 100=perfect symmetry)

**Results:** A significant reduction in eyelid spasms was observed on both eyes in patients with essential blepharospasm and on the affected side in patients with hemifacial spasm. Interocular symmetry of eyelid movements (75%) was not significantly changed after treatment in essential blepharospasm patients. For the hemifacial spasm patients, the mean eyelid motion symmetry increased from 55,9 to 68,2%

**Conclusion:** The high-speed video system was useful to demonstrate reduction of the lid spasms frequency in essential blepharospasm and hemifacial spasm patients after treatment with BTX-A

**Keywords:** essential blepharospasm, hemifacial spasm, facial dystonias, botulinum toxin-A

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Title  
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Purpose  
Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

### 43. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Renato Wendell Damasceno - Post-doc

**e-mail:** [renatowendell@hotmail.com](mailto:renatowendell@hotmail.com)

**Service:** (PL) OCULOPLASTICS SURGERY

**CEP Number:** 57035554

### 5. ABSTRACT (REQUIRED):

**Title:** Orbital lymphatic vessels in humans: a new paradigm.

**Author and Co-authors:** Renato W. Damasceno, Juliana Arôxa P. Barbosa, Lucas Cortez, Rubens Belfort Jr.

**Purpose:** To identify lymphatic vessels in orbital specimens from human cadavers, using light microscopy and immunohistochemical analysis.

**Methods:** A postmortem study included ten orbital specimens from ten human cadavers. All subjects were enrolled in this study, from January 1 to December 31, 2016. All orbital specimens were obtained no later than twelve hours after death, using a modified surgical technique of orbital exenteration, at the Autopsy Service, Universidade Estadual de Ciências da Saúde de Alagoas, Maceió, Brazil. All orbital specimens were dissected into the lacrimal gland, the optic nerve, the fat tissue and extraocular muscles.

Immunohistochemistry was performed on 4 &#956,m thick paraffin sections, at the Pathology Laboratory, Universidade Federal de Alagoas, Maceió, Brazil. A monoclonal antibody against the human lymphatic vascular endothelial-specific glycoprotein podoplanin D2-40 was used.

To qualify as lymphatic vessel, the histologic criteria comprised thin-walled channels of endothelium without a well-developed basal membrane and with an erythrocyte-free and irregular lumen and the immunohistochemical criteria included irregularly shaped, thin-walled vessels with an erythrocyte-free and irregular lumen and immunopositivity for podoplanin D2-40.

**Results:** The sections of the lacrimal gland, the optic nerve, the fat tissue and extraocular muscles were positively stained with podoplanin D2-40.

**Conclusion:** This study demonstrated lymphatic vessels in the human orbit, more exactly, in the lacrimal gland, the optic nerve, the fat tissue and extraocular muscles, using light microscopy and immunohistochemistry.

**Keywords:** Orbit, Lymphatic System, Vascular Endothelium, Immunohistochemistry.

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Title  
Author  
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Purpose  
Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

### 44. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Eduardo Alonso Garcia - PG1

**e-mail:** [e2704.garcia@gmail.com](mailto:e2704.garcia@gmail.com)

**Service:** (LS) LACRIMAL SYSTEM

**CEP Number:** 0463/10

### 5. ABSTRACT (REQUIRED):

**Title:** LACRYMAL RECANALIZER: Recanalization Of The Naso Lachrymal Duct (RNLD) With High Frequency

**Author and Co-authors:** Garcia, E A; Machado, M A C; Silva, J A F

Advisor: Nose, W

Co Advisor: Magalhães, O

**Purpose:** Analyse the possibility to restore lachrymal flow in dacriocistitis with minimum interference in lachrymal bomb, scar absence, safe for injury of medial structures and without the necessity of carries through a by pass (osteotomy) using a High Frequency device.

**Methods:** Patients with chronic dacriocistitis, older than 18 years, no heart disease, no peace maker, no previous surgical treatment were selected.

The recanalization (RNLD) was performed with local anesthesia, and bicanalicular intubation with silastic.

The results of 2 devices with different frequencies (450Khz x 4Mhz) were compared

#### Results:

Phase1 : analysis of pos-operative control with 450Khz device irrigation (80,6%) x eye drops (83,9%)

Phase 2: Comparative study with two High Frequency devices

450 Khz (83,9%) X 4 Mhz (83,3%)

Phase 3: comparative study with wave modulation

20% cut / 80% coagulation (83,3%) X 50% cut/50% coag. (82,5%)

Phase 4: analysis in animal experimental model (CEUA nº 2001300716)

**Conclusion:** RNLD with high frequency evidenced an outcome in lachrymal obstruction procedure, with low risk, no scar, no bleeding and good results. The success rate (80,5% - 83,9%) are close to others studies .

**Keywords:** lacrymal surgery, high frequency , dacriocystitis



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

Poster guidelines:  
**90cm x 120cm**

### 45. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Lucimeire Carvalho Nova – PG1

**e-mail:** [lucinova@gmail.com](mailto:lucinova@gmail.com)

**Service:** (LS) LACRIMAL SYSTEM

**CEP Number:** 526211091

### 5. ABSTRACT (REQUIRED):

**Title:** Evaluation of The Dry Eye In The Experimental Model of Sjögren Syndrome (Sjs)

**Author and Co-authors:** Lucimeire Nova de Carvalho, José Alvaro Pereira Gomes, Priscila Cardoso Cristovam, Tais Hitomi Wakamatsu, Alex Nasare, Rossen M Hazarbasanov, Patricia Picciarelli

**Purpose:** To test a vasodilator substance in the treatment of an experimental model of dry eye

**Methods:** The first step was to standardize an experimental model of SjS in mice. Non-obese diabetic mice (NOD) females were divided into control groups (CTL, n = 6) - healthy animals Nod Scid cb-17 and Sjögren Syndrome group (SjS, n = 6) - NOD animals. All animals were submitted to tear measurement by the red phenol test and slit lamp exam with fluorescein staining to check for epithelial keratitis. After 20 weeks, the animals were euthanized and the eyeballs and lacrimal and meibomian glands were harvested for histological and immunohistochemical analysis

**Results:** The SjS (NOD) animals presented glycemia higher than 500mg/ml and the control animals presented normal glycemic level of 120mg/ml in average. The phenol red test showed a decrease in the tear production of the SjS animals when compared to the control group. Histopathologic analysis demonstrated that the lacrimal glands of the diseased animals had parenchyma with mucosal acini presenting extensive dilatation of the lumen, accumulation of pigmented and granular secretion and epithelial cells with atrophic aspect.

**Conclusion:** : In this first experiment, we standardize an animal model of SjS in mice. The next step will include a randomized comparative study to evaluate the efficacy of the vasodilator substance in the treatment of dry eye induced in the SjS experimental model vs. control.

**Keywords:** Sjögren's syndrome (SjS), dry eye, vasodilator, NOD

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(RE) RETINA AND VITREOUS

46. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Bruno de Queiroz Alves - Fellow

**e-mail:** [bruno.q.a@gmail.com](mailto:bruno.q.a@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 0038/2017

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** Electrical Stimulation Therapy in Patients with Retinitis Pigmentosa

**Author and Co-authors:** Bruno de Queiroz Alves; Vínicius Kniggendorf  
Juliana Maria Ferraz Sallum

**Purpose:** Evaluate the impact of electrical stimulation on visual acuity of patients with retinitis pigmentosa, Evaluate if results of previous transcorneal electrical stimulation studies are reproducible on a Brazilian group of patients with retinitis pigmentosa using a biphasic pulse delivered by Ryometer® device with temporal electrodes.

**Methods:** 24 patients will be followed during three months with electrical stimulation weekly sessions.

**Inclusion criteria:** clinical diagnosis of retinitis pigmentosa and availability to attend the sessions of electrostimulation weekly for three months.

**Exclusion criteria:** inability to cooperate with sessions. Presence of other eye problems that interfere with the ability to perform visual field examinations or visual problems that may potentially become worse during the course of the study. In case of gestation the sessions will be interrupted. Side effects during electrostimulation.

The patients will be submitted to a complete ophthalmic exam including best corrected visual acuity, intraocular pressure (IOP), retinal mapping (RM), retinography, fundus autofluorescence (FAF), optical coherence tomography (OCT) and visual field. In the exam should be observed presence of macular edema that would exclude the patient from the study. A quality of vision questionnaire will be applied.

Patients will perform weekly electrostimulation sessions with voltage defined at 300  $\mu$ A. The Ryometer® device (Brazil) that emits biphasic pulse currents (first anode, 10 msec duration, 10 msec frequency, 20 Hz frequency) will be used in 30 minute sessions.

An evaluation of patients will be performed in the end of third month.

**Results:** The results are in progress however this study aims to corroborate that electrostimulation is safe and had a positive effect on the course of the disease in patients with retinitis pigmentosa as demonstrated on EST I, EST II and TESOLA studies.

There are 21 patients included in the study, 2 patients had finished their electrostimulation sessions and had been examined and currently 19 patients are performing it.

**Conclusion:** In progress

**Keywords:** Electrical Stimulation, Retinitis Pigmentosa, electrostimulation

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Purpose  
Methods  
Results,  
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Keywords

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(RE) RETINA AND VITREOUS

47. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Bruno Mauricio Rodrigues Oliveira - R2

**e-mail:** [brunomro@gmail.com](mailto:brunomro@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 501244155

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** Measurement of foveal avascular zone dimensions in eyes with retinal vein occlusion using optical coherence tomography angiography

**Author and Co-authors:** Bruno Mauricio Rodrigues de Oliveira , Bruno Rebello de Godoy, Alexandre Gomes Bortoloti de Azevedo

**Purpose:** The aim of this study was to evaluate reproducibility, reliability and repeatability of FAZ area measurements using Topcon DRI OCT Triton Swept Source in patients with retinal vein occlusion.

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**Methods:** This is a retrospective review of optical coherence tomography angiography exams of patients diagnosed with retinal vein occlusion in the last two years.

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The inclusion criteria was diagnosis of retinal vein occlusion (central or branch retinal vein) according to fundus exam performed by at least two retina specialist. Patients were excluded if they had history of another ocular or clinical diseases documented in medical records that cause retinal vascular abnormalities.

A Topcon DRI Triton Optical Coherence Tomography Swept Source, Topcon Corporation, Japan was used for volumetric angiography maps of the retina. All exams met the signal reliability and quality threshold given by the software of the OCT. Macular 3 x 3 and 6 x 6 scans sizes were used for foveal avascular zone evaluation. Manual measurements were performed using the IMAGENet® software included in the OCT system. Two retina specialists and one second-year resident of ophthalmology were recruited to perform the measurements of all the patients without knowing the results of each other.

**Results:** So far, fifteen eyes from fifteen patients with retinal vein occlusion were analyzed with OCT angiography. There are nine patients with central retinal vein occlusion and six patients with branch retinal vein occlusion. Eleven of them presented with macular edema. Eight patients are male and seven patients are female with mean age of 58,4 +/- 11,12.

Mean foveal avascular zone measurements of all patients were 613,61 +/- 338,81, 699,78 +/- 391,27 and 587,29 +/- 343,95 for the three examiners in the 6 x 6 macular scans. Statistical analysis is still being performed. Variability, reproducibility and repeatability are the evaluated parameters.

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**Conclusion:** Since the delimitation of the ZAF region is performed manually, a large interobserver and intraobserver variability would be expected. Statistical analysis to observe reproducibility and reliability of these measures are in progress, as well as clinical correlation with visual acuity.

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Purpose  
Methods  
Results,  
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Keywords

Poster guidelines:  
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**Keywords:** retinal vein occlusion, optical coherence tomography angiography, foveal avascular zone

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**(RE) RETINA AND VITREOUS**

48. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Cristiane Bezerra da Cruz Costa - PG0

**e-mail:** [cristianebcruz@hotmail.com](mailto:cristianebcruz@hotmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 2034800

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Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Ophthalmic manifestations in patients with microcephaly and congenital Zika virus infection

**Author and Co-authors:** Cristiane Bezerra da Cruz Costa, Denise de Freitas, Arthur Diego de Aquino Moreira

**Purpose:** To report chronic ocular manifestations in patients with congenital Zika virus infection and microcephaly

**Methods:** A retrospective study carried out at the Blind Institute Adalgisa Cunha in Paraíba, Brazil during the year 2016. Fourteen eyes of seven patients with confirmed Zika virus congenital infection and microcephaly underwent external ocular examination and dilated ophthalmoscopy.

**Results:** There were four male and three female patients. All of them were born in 2015 in João Pessoa - Paraíba, Brazil. Eight eyes (57,1%) of four patients (57,1%) had ocular manifestations. Those manifestations were binocular and included optic nerve findings (hypoplasia with the double-ring sign, pallor) in six eyes (75,0%) and macular changes (gross pigment mottling and/or chorioretinal atrophy) in six eyes (75,0%). Two patients (25,0%) had a combination of lesions in the posterior pole. External eye diseases were not identified.

**Conclusion:** Ocular findings (important macular and/or optic nerve alterations) during chronic stages of the disease were identified in four patients (57,1%) and seems to involve only the posterior pole of the eye.

**Keywords:** Ophthalmic manifestation, Zika virus, microcephaly

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**(RE) RETINA AND VITREOUS**

49. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Daniela S Calucci - PG0

**e-mail:** [danielacalucci@hotmail.com](mailto:danielacalucci@hotmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 3201060

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** Identification of the lesion and evaluation of the presence of choroidal neovascularization activity secondary to age-related macular degeneration with OCT-A versus traditional methods of retinography, angiography and SS-OCT

**Author and Co-authors:** Daniela Calucci, Dr Andre Maia, Dr Pedro Paulo Bonomo, Dr Eduardo Buchele Rodrigues

**Purpose:** Correlate and establish a pattern of vascular characteristics found in exudative AMD using the OCTA as a new proposal for evaluation of neovascular membrane activity in ARMD comparing with the clinical findings of retinography, angiographies and optical coherence tomography. Ability of OCTA correctly visualize the pathological changes associated with exudative AMD and potential surrogate for angiographies.

**Methods:** Comparative and retrospective study of 23 eyes with age-related macular degeneration in the exudative phase on anti-VEGF treatment. Masked analysis of Retinography, angiofluoresceinography, indocyanine green, OCT and OCTA by an experienced medical reader (S.J.H) in international clinical research protocols and possibility of open review for final analysis with the guideline of this study (E.B.R) in selected cases were performed on two consecutive visits at intervals equal to or greater than 4 months.

**Results:** Under statistical analysis

**Conclusion:** The OCTA is a developing multimodal imaging modality that may in the future replace standardized FA and ICGA exams. The benefits go beyond being non-invasive and fast performing, it offers functional assessment detecting blood flow from any damage to the retina and choroid besides structural assesment because its images can be correlated with structural OCT. In the neovascular lesions of the choroid we can observe in the literature positive results in the use of OCTA as an ability to detect these lesions Jia et al., describing clinical characteristics moult and choi et al, an effort to establish reading patterns regarding the presence of lesional activity, Coscas et al.

**Keywords:** Age-related macular degeneration, Neovascularization, Fluorescein angiography, Indocyanine angiography, Optical coherence tomography angiography, Retina.

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

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

**(RE) RETINA AND VITREOUS**

50. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Dante Akira Kondo kuroiwa - R1

**e-mail:** akira.epm78@gmail.com

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 4044020

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** Choroidal thickness comparison of non edematous and edematous macular areas in patients with diabetic macular edema using EDI-OCT

**Author and Co-authors:** Authors: Dante Akira Kondo Kuroiwa, Felipe Pereira, Stéphanie de Almeida Fontanelli, Vinicius Ferreira Kniggendorf, Vinicius da Silveira Saraiva, Caio Vinicius Saito Regatieri, Eduardo Amorim Novais

**Purpose:** To compare the choroidal thickness measured by Enhanced Depth Image (EDI) Spectral Domain Optical Coherence Tomography (SD-OCT) in areas with and without macular edema in patients with diabetic retinopathy.

**Methods:** Forty one eyes of 30 patients underwent high-definition vertical line scanning using EDI SD-OCT with frame enhancement software. Choroidal thickness was measured from the posterior edge of the retinal pigment epithelium to the choroid/sclera junction at 250µm intervals, starting from the center of the fovea until area without edema. A comparison between the areas with and without edema was performed. Additionally the choroidal thickness in the both borders were compared. Mann Whitney test was used to compare the choroidal thickness in both areas.

**Results:** We expect to find an increase in the thickness of the choroid in the edematous macular area compared to the area without edema.

**Conclusion:** We expect to conclude that our method for choroidal thickness measure is reproducible and reliable in patients with macular edema. We also expect to find a significant difference between choroidal thickness under the edema and outside the edema.

**Keywords:** Keywords: choroidal thickness; retinal edema; OCT-spectral-domain; diabetic macular edema.

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(RE) RETINA AND VITREOUS

51. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Elmar Torres Neto - PG0

**e-mail:** [elmaroft@hotmail.com](mailto:elmaroft@hotmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 110098

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Results  
Conclusion  
Keywords

Poster guidelines:  
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5. ABSTRACT (REQUIRED):

**Title:** Teleophthalmology support for primary care diagnosis and management

**Author and Co-authors:** Paulo H. Morales, MD, PhD,1,2 Olimpio J.N.V. Bittar, MD, PhD,3 Nacime S. Mansur, MD,1,4 Solange R. Salomão, PhD,1 and Rubens Belfort Jr, MD, PhD1,2,4

**Purpose:** The aging eye is highly susceptible to health disorders, due to ocular primary changes, as well the manifestations of systemic diseases. The elderly population is considered risky and should have regular ophthalmic exam for earlier diagnosis and effective intervention. The health system is becoming increasingly costly and difficult to access, compromising the chances of treatment and often leading to blindness due to lack of medical attention. Routine screening and eye examination are a challenge to the public health system. In this context, innovative approaches are needed. This study aims to evaluate a health care strategy based on tele ophthalmology for diagnosis and treatment of primary health care users with diabetes, systemic blood hypertension or use of chloroquine compounds.

**Methods:** Descriptive cross-sectional study, where medical records of patients (January, 2013 to December, 2013) from primary care units in the city of São Paulo were reviewed. The units referred patients with DM, high blood pressure and use of chloroquine compounds, for fundus examination. The patient had their pupil dilated and the picture were taken. The image were send to a reading center with expert ophthalmologist reviewed then and issued diagnosis and patient referral.

**Results:** From the 9216 analysed patients the mean age 60.2 years, 4960 patients were diabetic (53.81%), 7312 had blood hypertension (79.33%), 113 were chloroquine users (1.23%) and 570 had other comorbidities (6.2%). The total of 989 patients, (11.5% of the total) were found to need complementary ophthalmologic action. The most frequently prescribed treatments were cataract extraction (67.05%) and photocoagulation (23,64%). Four the total, cataract extraction was indicated in 7.50% of the cases, and photocoagulation, in 2.65%. When considering only diabetic patients, photocoagulation indication rate rises from 2.65% to 4.44%. In this subgroup, photocoagulation main indication was proliferative retinopathy diabetic and diabetic maculopathy together, with 74,64% of the cases, other indications were vascular occlusion.

**Conclusion:** This study shows that non-medical professionals can use telemedicine to capture ocular images for screening, higher surgical indication and more integrated into the health system compared to traditional methods. We can thus evaluate a greater number of patients, targeting only those who would benefit from a complete evaluation, optimizing the operation and queries marking system speed and minimizing the unsuccessful attempt to obtain eye care, which today represents the main barrier faced by the public health system users.

**Keywords:** healthcare, strategy, teleophthalmology, retina

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**(RE) RETINA AND VITREOUS**

52. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Gabriel Costa Andrade - PG1  
**e-mail:** [drgabrielandrade@gmail.com](mailto:drgabrielandrade@gmail.com)

**Service:** (RE) RETINA AND VITREOUS  
**CEP Number:** 707034

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Intravitreal Injections Of Ziv-Aflibercept For Diabetic Macular Edema - A Pilot Study

**Author and Co-authors:** GABRIEL COSTA DE ANDRADE; JOÃO RAFAEL DE OLIVEIRA DIAS; ANDRÉ MAIA; MICHEL EID FARAH; CARSTEN H. MEYER,; EDUARDO BÜCHELE RODRIGUES

**Purpose:** Diabetic macular edema is the leading cause of blindness in young adults in developed countries. Beyond metabolic control, several therapies have been studied such as laser treatment and intravitreal injections of corticosteroids or anti-vascular endothelial growth factor drugs. In terms of public health the long-term treatment with the current available drugs is very expensive and new therapies with the same or better effect should be investigated. This study sought to evaluate the efficacy and safety of intravitreal injections of ziv-aflibercept for the treatment of diabetic macular edema.

**Methods:** Seven consecutive patients with diabetic macular edema were enrolled. A complete examination, including full-field electroretinography, visual acuity, central retinal thickness, and evaluation of systemic and ocular complications, was performed before and at 24 weeks after intravitreal injections of ziv-aflibercept. The seven patients were submitted to six consecutive intravitreal injections of ziv-aflibercept with a 4-week interval.

**Results:** No significant differences were found in the amplitude or implicit time of any electroretinography component after intravitreal injections of ziv-aflibercept, and no systemic or ocular complication was observed. The improvement of visual acuity was significant at 24 weeks ( $P < 0.05$ ). The central retinal thickness significantly decreased during the course of 24 weeks.

**Conclusion:** Intravitreal injections of ziv-aflibercept seem to be a safe and effective treatment option for diabetic macular edema.

**Keywords:** Diabetic retinopathy, diabetic macular edema, anti-VEGF, ziv-aflibercept



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**(RE) RETINA AND VITREOUS**

53. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Guilherme Eiichi da Silva Takani - R2

**e-mail:** [guilherme.eiichi@gmail.com](mailto:guilherme.eiichi@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 0

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** Optical coherence tomography angiography features in retinal artery occlusion

**Author and Co-authors:** Guilherme Eiichi da Silva Takitani MD, PhD, Nikoly Fares MD, João Rafael de Oliveira Dias MD, Marina P Neder, Claudio Z Lobos, Eduardo Amorim Novais MD

**Purpose:** To describe the retinal microvasculature of the eyes with nonarteritic retinal artery occlusion (RAO) based on optical coherence tomography angiography (OCT-A).

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**Methods:** Cross-sectional, prospective, observational study. Patients with artery occlusion - central, branch or cilioretinal - were prospectively recruited to be imaged on spectral-domain OCT-A (RTVue XR Avanti, Optovue, Inc, Fremont, California, USA), FA (Spectralis HRA Heidelberg Engineering, Heidelberg, Germany) and color fundus photograph on the same day. Qualitative analysis of the morphology of the superficial and deep retinal capillary plexuses, and radial peripapillary capillaries was performed. Retinal vasculature images using optical coherence tomography angiography were correlated with fluorescein angiography images. All patients were referred to a clinical evaluation for the investigation of systemic diseases.

**Results:** Ten patients with retinal artery occlusion were included in this study. OCT-A findings were similar to FA finding for the demonstration of retinal ischemia and neovascularization. Distinct differences in the distribution of zones of decreased vascular perfusion between the superficial and deep retinal capillary plexus corresponding to areas of delayed dye perfusion on fluorescein angiography were demonstrated using OCT angiogram. However, OCT-A was not able to evaluate peripheral retina due to restrict scanning field.

**Conclusion:** OCT-A imaging can accurately discern retinal capillary plexuses at different levels in the eyes with retinal artery occlusion and may be sensitive for more precisely characterizing the extent of macular ischemia and monitoring vascular flow changes during the course of the disease. However, because this exam is restricted to the posterior pole, AF still remains the gold standard exam for peripheral retina imaging.

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Methods  
Results,  
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Keywords

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**Keywords:** OCT Anigiography; Retinal Artery Occlusion; RAO; OCT-A

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**(RE) RETINA AND VITREOUS**

54. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Irineu Kenji Ogoshi Junior - R1

**e-mail:** [ken\\_ogoshi@hotmail.com](mailto:ken_ogoshi@hotmail.com)

**Service:** (RE) RETINA AND VITREOUS  
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Results,  
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Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Acute Cholangitis and Purtscher-like retinopathy: A case report

**Author and Co-authors:** Irineu Kenji Ogoshi Junior, Sabrina Jisun Myung Cho, Felipe Pereira, Alexandre Gomes Bortoloti de Azevedo, Somaia Mitne Teixeira

**Purpose:** Purpose:

To report a case of a patient with cholangitis and acute renal failure associated Purtscher-like retinopathy using coherence optical tomography angiography (OCT A).

**Methods:** Case report of a patient evaluated in the ophthalmology emergency sector of the São Paulo Hospital with a low visual acuity complaint on the left eye, associated with cholangitis and acute renal failure. At the presentation his best corrected visual acuity was 20/20 on the right eye and 20/50 on the left eye and his funduscopy findings were Optic Disc swelling on the left eye and cotton wool spots and retinal hemorrhages in both eyes. Ancillary exams include: Optical Coherence Tomography (OCT), Optical Coherence Tomography Angiography (OCTA), autofluorescence and retinography.

**Results:** The patient had an improvement of his visual acuity with an expectant approach. The BCVA three months later was 20/40 and OCT A showed a reduction in hypoperfusion area on the left eye. The final outcome of the case is still in progress.

**Conclusion:** In progress.

**Keywords:** Cholangitis, acute renal failure, Purtscher retinopathy, Purtscher-like retinopathy

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**(RE) RETINA AND VITREOUS**

55. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Luis Filipe Nakayama - R3  
**e-mail:** [nakayama.luis@gmail.com](mailto:nakayama.luis@gmail.com)

**Service:** (RE) RETINA AND VITREOUS  
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Title  
Author  
Co-authors (maximum 6)  
Purpose  
Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Choroidal Subfoveal Thickness evaluation in patient with Inflammatory Bowel Disease with Swept Source OCT

**Author and Co-authors:** Nakayama, L.F., Conti, M., Fares, N.T., Portela, R.C., Kato, R.T., Costa, L.A., Ambrogini O., Moraes, N.B.S

**Purpose:** Evaluate choroidal subfoveal thickness in patients with Inflammatory Bowel Disease (Ulcerative Colitis (UC) and Chron Disease (CD)). Comparison between active, in remission disease and control group and comparison between multiples medication in use.

**Methods:** 32 patients (64 eyes) with inflammatory bowel disease (17 CD and 15 RCU) were evaluated and 12 (24 eyes) in control group. 17 with active disease and 14 with disease in remission.

Every patient was evaluated with complete ophthalmological exam, OCT, retinography and ocular surface analysis with Keratograph 5.

**Results:** Mean choroidal subfoveal thickness was 298,53 micra in Crohn Disease group, 291,5 micra in Ulcerative Colitis group and 219,20 micra in control group. When comparing averages, we found statistically significant difference between groups but no difference between active disease (301,35 micra) and remission disease (278,25 micra).

We found statistically increased choroidal thickness in patients in use of Mesalazina, Azatioprina and Infliximab and no difference in use of Adalimumab, Prednisone, Metotrexate and Sulfassalazine, compared to the control group.

**Conclusion:** Although Choroidal subfoveal thickness is seen in other ophthalmological conditions such as uveitis, there are few studies evaluating inflammatory bowel diseases.

When comparing averages, there are no differences between active and remission group, concluding that probably this isn't a good method to evaluate disease activity. When comparing different treatment patients in use of Mesalazine, Azatioprine and Infliximab showed statistically difference compared to the control group, but the other treatments didn't showed difference. More studies are necessary to establish this correlation between medication in use and subfoveal choroidal thickness.

**Keywords:** Retina, inflammatory bowel disease, OCT, Subfoveal choroidal Thickness

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**(RE) RETINA AND VITREOUS**

56. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Luisa Salles de Moura Mendonça - PGO

**e-mail:** [luisasmendonca@gmail.com](mailto:luisasmendonca@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 2062758

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Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Functional and anatomic evaluation of diabetic macular edema pre and post intravitreal anti-VEGF therapy.

**Author and Co-authors:** Luísa Salles de Moura Mendonça, Cláudio Zett Lobos, Juliana Sallum, Caio Regatieri.

**Purpose:** To evaluate and correlate functional and anatomic retinal changes pre and post intravitreal anti-vascular endothelial growth factor (VEGF) therapy with bevacizumab in patients with diabetic macular edema (DME), using microperimetry and optical coherence tomography angiography (OCTA).

**Methods:** It is a prospective, non-controlled, interventional study. Fifty patients with DME, meeting the inclusion criteria, will be enrolled. At the initial visit, functional evaluation will be performed with Best Corrected Visual Acuity (BCVA) according ETDRS protocol and microperimetry (MAIA, CenterVue). Microperimetry testing protocol will consist of 37 points within a 10° area of the macula centered on the fovea. Morphologic evaluation will include Swept Source OCT B-scans (SS-OCT) and OCTA 3x3mm, 4,5x4,5mm and 6x6mm scans (Triton, Topcon Corporation). Blood samples for HbA1C will be obtained. Patients will then receive 3 consecutive monthly intravitreal injections of 1.25 mg bevacizumab. After 1 month of complete therapy, patients will be divided into responder and non-responder (less than 10% central foveal thickness reduction in SS-OCT after therapy) groups. They will be re-evaluated with BCVA, microperimetry, SS-OCT, OCTA and HbA1C at this point and after 3 months.

For analyses, OCTA parameters (capillary non-perfusion area and foveal avascular zone measurements) in superficial and deep capillary plexuses will be compared with BCVA, microperimetric parameters (average sensitivity in dB and fixation stability, characterized as the percentage of fixation points located within a distance of 1° and 2°) and HbA1C. Statistical analysis will be performed by using the Student's t-test or analysis of variance with post hoc Tukey's honest significance test, for multiple comparison.

**Results:** This study is still in recruiting phase. We intend to find significant correlations between functional and morphologic changes pre and post therapy and to compare data from responders and non-responders, in order to establish prognostic factors in bevacizumab therapy.

**Conclusion:** This study is still in progress.

**Keywords:** diabetic macular edema, microperimetry, optical coherence tomography angiography, bevacizumab, intravitreal anti-VEGF therapy.

## 2017 Research Days Abstract Form

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

**(RE) RETINA AND VITREOUS**

57. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Luiz Filipe Adami Lucatto - PG1

**e-mail:** [filipeadami@yahoo.com.br](mailto:filipeadami@yahoo.com.br)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 1301/15

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** A Randomized Clinical Trial To Compare The Healing Process Of Idiopathic Macular Hole With Different Surgical Techniques

**Author and Co-authors:** Luiz F A Lucatto; Mariana Batista; Bruno Queiroz; Juliana M B Prazeres; Francisco Stefanini; Otaviano Magalhães Jr; Maurício Maia

**Purpose:** To evaluate if the different surgical techniques for the closure of the macular hole (MH) have anatomical and functional differences in the healing process postoperatively.

**Methods:** Patients with macular holes classified in stages 3 and 4 will be randomized into 2 groups. In Group A, patients will undergo peeling with complete removal of the internal limiting membrane (ILM). In the group B, the inverted ILM peeling technique will be performed. Patients with stage 2 macular hole may be also randomized to a third group (Group C), in which only the removal of the posterior hyaloid without ILM peeling will be performed. The 20% SF6 gas will be used as a tamponade agent in all surgeries, and patients will be instructed to avoid the prone position for 7 days. Inclusion criteria: Stage 2, 3 and 4 macular holes with visual acuity between 20/30 and 20/800 according to the ETDRS chart. Exclusion criteria: macular holes secondary to ocular trauma or retinal detachment, any previous treatment for the macular hole, evidence on examination of any diabetic retinopathy, history or presence of wet or dry AMD, presence of epiretinal membrane or prior uveitis, any ocular surgery within 3 months before baseline, intra or periocular infection. Spectral Domain OCT (SD-OCT) images will be performed daily for the 7 first days postoperatively. The primary outcome is the MH closure rate over time and the second outcomes are best correct Visual Acuity, time of MH closure, integrity of the ellipsoid zone on SD-OCT. Statistical analysis will be performed with Student t-test and the p-value of &#8804; 0.05 is considered significant.

**Results:** In progress

**Conclusion:** In progress

**Keywords:** Macular Hole, IML Peeling, Inverted ILM Peeling

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**Abstract should contain:**

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

(RE) RETINA AND VITREOUS

58. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Marina Lourenço Conti - R3

**e-mail:** [conti.marina@gmail.com](mailto:conti.marina@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 261763839

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Purpose  
Methods  
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Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** EVALUATION OF OCULAR SURFACE AND CHOROIDAL THICKNESS IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

**Author and Co-authors:** Conti ML, Fares NT, Nakayama LF, Kato RT, Portela R, Gracitelli CBP, Bueno NS, Ambrogini O.

**Purpose:** To evaluate choroidal thickness in patients with ulcerative colitis (UC) and Chron's disease (CD) using swept source optic coherence tomography (SS-OCT) imaging and to assess ocular surface in those patients using Keratograph and clinical tests.

**Methods:** Comparative cross-sectional study. Patients with confirmed IBD (biopsy or clinical finding) for at least 6 months and healthy subjects (control group) were enrolled. Ophthalmological examination was performed on each subject. Ocular surface was evaluated using tear break-up time (TBUT), Schirmer test and the Ocular Surface Disease Index (OSDI) questionnaire. OSDI scores higher than 13 were considered clinically relevant. Patients underwent keratograph analysis, non-invasive keratograph BUT, meibography quantification, tear meniscus height, and redness scale. CT was measured by Topcon DRI OCT Triton. Different clinical findings, keratograph parameters and OCT measures were compared between groups.

**Results:** A total of 62 eyes of 31 patients with IBD (CD=16 and UC=15) and 12 controls were included. Mean age was different between groups (IBD: 46.3±15.5 years vs controls: 69.0±5.6 years, p<0.001). There were significant differences regarding CT, with thicker thickness in eyes with CD followed by UC and control group (p=0.012). There were significant differences regarding clinical OSD evaluation, with worse Schirmer test in eyes with UC (p=0.020). The overall OSD prevalence rate was 42%, 69% and 60% in the control, CD and UC group, respectively (p<0.05%). However, considering severe OSD symptoms most patients had UC (33%) compared to CD and control group (25% and 17%, respectively). Patients with UC had significant worse hyperemia indexes compared to controls (2.26±0.49 vs. 1.71±0.13, p=0.009). Non-invasive keratograph BUT index was worse (10.19±6.93 vs. 16.81±7.50, p=0.036), and tear meniscus height was smaller in eyes with UC compared to CD (0.13±0.05 vs. 0.16±0.04, p=0.041).

**Conclusion:** Our findings confirm high prevalence of clinical findings of OSD in patients with IBD and shows new objective parameters keratograph analysis. Patients with CD had also thicker CT.

**Keywords:** choroidal thickness, inflammatory bowel disease, ocular surface

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(RE) RETINA AND VITREOUS

59. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Mariana Batista Gonçalves - Fellow

**e-mail:** [mari-batista@bol.com.br](mailto:mari-batista@bol.com.br)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 466833

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Migration of the intravitreal dexamethasone implant to the anterior chamber: multicenter study from the Panamerican Collaborative Retina Research Group

**Author and Co-authors:** Mariana Batista Gonçalves, Bruno de Queiroz Alves, Raphael Moura, Octaviano Magalhães Junior, André Maia, Rubens Belfort Júnior, Marcos Ávila, Marcelo Zas, Mario Saravia, Marcia Lousas, Lihteh Wu, Fernando Arevalo, Katia Delalibera, Marcos Ávila, Francisco Rodrigues, Michel Eid Farah, Mauricio Maia

**Purpose:** The objective of this study was to establish the prevalence and risk factors for intravitreal dexamethasone implant migration into the anterior chamber in eyes with macular edema.

**Methods:** This study was a multicenter, retrospective study in which chart review of data was performed in patients with macular edema in one or both eyes treated with one or more injections of Ozurdex. Patients with an incomplete chart information during the follow-up period, aphakic with defect in posterior capsule and previous glaucoma were excluded. Data collected from medical records included age, gender, etiology of macular edema, history of cataract surgery or vitrectomy, intraocular lens status, number of implants injected and occurrence of migration into the anterior chamber. The statistical analyzes were performed using Fisher's exact tests.

**Results:** A total of 761 patients were included in this study and 1071 intravitreal injections of Ozurdex were performed. In this group, the prevalence of migration, considering the number of injections, was 1.3%. Among these 761 patients, 293 had charts with incomplete data and were excluded from the following analysis. The prevalence of migration in this subsample was 1.6%. Among the 468 patients included in the subsample, the main causes of macular edema were diabetic retinopathy, central and branch retinal vein occlusion. With respect to cataract surgery, a higher percentage of implant migration was observed in those patients who underwent the procedure. A marginally significant association between migration and vitrectomy was observed.

**Conclusion:** In conclusion, the risk of migration of Ozurdex to the anterior chamber observed in this study varied from 1.3% to 1.6% and the risk factors for this event were history of cataract surgery or vitrectomy - care is advised to perform injections of dexamethasone implant in such eyes.

**Keywords:** ozurdex, dexamethasone intravitreal implant, complications, anterior chamber dislocation

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**(RE) RETINA AND VITREOUS**

60. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Ramon Antunes de Oliveira - PGO

**e-mail:** [ramonntt@gmail.com](mailto:ramonntt@gmail.com)

**Service:** (RE) RETINA AND VITREOUS

**CEP Number:** 522922071

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Hydrogel polymer biocompatibility in vitreoretinal surgery.

**Author and Co-authors:** Ramon Antunes de Oliveira, Andreia de Araújo Morandim-Giannetti, Patrícia Alessandra Bersanetti, Mariana Batista Gonçalves, Bruno de Queiroz Alves, Paulo Schor, Maurício Maia, Octaviano Magalhães Junior.

**Purpose:** to determine in vitro and in vivo biocompatibility of a hydrogel synthesized using polyvinyl alcohol (PVA) and sodium trimetaphosphate (STMP) as crosslinking agent, in vitreoretinal surgery.

**Methods:** Thirty two New Zealand albino rabbits (2 kg weight) are planned to be used in this study. The Ethics Committee of the Federal University of São Paulo approved this study (protocol number: 5229220714), which followed the guidelines of the Association for Research in Vision and Ophthalmology.

They will undergo 25 Ga pars plana vitrectomy using a synthesized hydrogel polymer as vitreous substitute and balanced salt solution (BSS) in control group. All animals will have fundus image at Topcon TRC camera (Topcon, Tokyo, Japan), fluorescein angiography in Heidelberg Spectralis Device (Heidelberg Engineering, Heidelberg, Germany), Optical coherence tomography (OCT) in Spectralis OCT (Heidelberg, Germany) and electroretinogram (ERG) in Ephios ABTM system (Ephios, Norrköping, Sweden) at the day of the surgery (baseline) The first group will be euthanized under deep anesthesia with an intravenous injection of 70 mg/kg sodium pentobarbital, and a 4 centimeter retina tissue sample will be sent to optical and transmission electron microscopy (TEM). The same will be done to the other groups at 30, 90 and 180 days after the surgery.

In vitro toxicity will be studied in RPE19 cells culture exposed to the hydrogel polymer and cell viability will be evaluated by mitochondrial enzymatic activity.

**Results:** in progress.

**Conclusion:** It is expected, therefore, to define the novel biocompatible material with retinal tissues and can be applied as an alternative to more toxic vitreous substitutes, commonly used in vitreoretinal surgery.

**Keywords:** vitreous, biomaterials, polymer hidrogels



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**(TU) TUMORS AND PATHOLOGY**

61. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Brunella Maria Pavan Taffner - Fellow  
**e-mail:** [brunellapavan@hotmail.com](mailto:brunellapavan@hotmail.com)

**Service:** (TU) TUMORS AND PATHOLOGY  
**CEP Number:** 4024002

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Failure of subconjunctival interferon for ocular surface squamous neoplasia

**Author and Co-authors:** Brunella Maria Pavan Taffner, Delano Jorge, Melina Correia Morales, Rubens Belfort Neto

**Purpose:** The primary treatments for ocular surface squamous neoplasia (OSSN) include mitomycin C, 5-fluorouracil, and interferon &#945,2b. Mitomycin C has been shown in studies to be highly effective but has short-term and long-term side effects that may be intolerable. 5-Fluorouracil and interferon alfa-2b (IFN&#945,2b) have been found to be similar in efficacy to mitomycin, and interferon &#945,2b has been extremely well tolerated in the majority of patients. The aim of this study was to report the failure of subconjunctival interferon &#945,2b (3,000,000 IU / mL) as an isolated treatment option for advanced ocular surface squamous neoplasia.

**Methods:** A total of six patients who were diagnosed with advanced OSSN were included in this study. The patients then were given a perilesional subconjunctival injection of 3 million International units (MIU) of recombinant IFN&#945,2b in 0.5 ml of solution (Schering-Plough, Kenilworth, NJ). Patients were monitored weekly for up to 8 weeks with biomicroscopy slitlamp evaluation and photography documentation, and dilated fundus examinations.

**Results:** Two patients (33.3%) had progression of the lesion after the second injection and were referred for surgery. One patient (16.6%) had no regression of the lesion after six injections was submitted to excisional biopsy and radiotherapy treatment. One patient (16.6%) had no regression of the lesion after eight weekly injections and was referred to excisional biopsy. One patient (16.6%) had progression of the lesion after five weekly injections and was referred to exenteration. One patient (16.6%) had progression of the lesion after five weeks of treatment and was referred to radiotherapy.

**Conclusion:** This research showed that only the subconjunctival IFN &#945,2b was not enough to treat advanced OSSN. Further studies are needed to confirm our results.

**Keywords:** interferon alfa-2b, ocular surface squamous neoplasia

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**(TU) TUMORS AND PATHOLOGY**

62. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Carmen Adelaide Baptista da Luz-Pessuti - Fellow

**e-mail:** [carmenluzpessuti@gmail.com](mailto:carmenluzpessuti@gmail.com)

**Service:** (TU) TUMORS AND PATHOLOGY

**CEP Number:** 9416020

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** The potential impact of Extracellular Vesicles in patients with Uveal Melanoma

**Author and Co-authors:** Carmen Luz-Pessuti, Rubens N Belfort, Deise F. Costa, Andre C. Andrade, Pedro Nunes, Heloisa Nascimento, Rubens Belfort Jr and Ana Claudia Torrecilhas.

Department of Ophthalmology and Pharmaceutical Department, UNIFESP.

**Purpose:** Characterize the EVs isolated from peripheral blood, aqueous and vitreous humor of patients with uveal melanoma.

**Methods:** Patients with uveal melanoma will be recruited at UNIFESP/ EPM. Peripheral blood, aqueous and vitreous humor will be collected and EVs will be isolated using exoRNeasy Midi Kit (Qiagen). After isolation, particles will be measured and quantified using a Nanosight particles NS300 instrument (NTA) in order to characterize the expression of selective markers from EVs using Western Blotting. The expression of miRNA using quantitative real time PCR will also be analyzed and the morphological investigation of the EV samples will be carried out by transmission electron microscopy.

**Results:** Initial data from one patient showed high number of particles in the plasma ( $4.5 \times 10^8$  particles/ml) compared to aqueous humor ( $1.5 \times 10^8$  particles/ml) and vitreous ( $0.5 \times 10^8$  particle/ml). We will increase the patients number to allow data interpretation.

**Conclusion:** Isolation and detection of EVs in blood and ocular fluids can may be useful in ocular melanoma and metastasis prognosis.

Financial Support: CNPq, FAPESP and CAPES

**Keywords:** Melanoma, exosome, miRNA, metastasis, Cancer.

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**(TU) TUMORS AND PATHOLOGY**

63. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Ever Ernesto Caso Rodrigues - Fellow

**e-mail:** [ehverc@gmail.com](mailto:ehverc@gmail.com)

**Service:** (TU) TUMORS AND PATHOLOGY

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Masquerade Syndromes

**Author and Co-authors:** RODRIGUEZ, E. E. C, MORALES, M. C ,BELFORT R. N.

**Purpose:** Incorrect diagnosis of the masquerade syndromes (MS) may have severe consequences. The correct diagnosis and treatment of MS is fundamental for the prognosis and patient's life. In this study analyzed of clinical manifestations, diagnostic tests.

**Methods:** In this retrospective study of case series with five patients diagnosed of masquerade syndrome attended at the Ophthalmology Department of Federal University of Sao Paulo from February of 2013 to July of 2017. The patients were diagnosed based on clinical evaluation, results laboratory, photographic, ocular ultrasound and result of the biopsy (3 patients).

**Results:** Two patients had ocular malignancy (anterior necrotizing scleritis secondary to squamous cell carcinoma and intraocular metastatic carcinoma of unknown primary), One patient had lymphoid hyperplasia in the upper palpebral, Two patients with granuloma of the ciliary body for tuberculosis initially simulating amelanotic melanoma. The patients with malignant MS were older than those with nonmalignant MS (average age 60 vs 25 years). The manifestation of malignant MS was necrotizing scleritis in the patient with squamous cell carcinoma and anterior uveitis with hypopyon in the patient with intraocular metastasis.

**Conclusion:** Malignant masquerade syndrome was diagnosed in two patients with anterior uveitis and necrotizing scleritis respectively. Patients aged 60 years and older with unexplained anterior uveitis, hypopyon, scleritis with an incomplete therapeutic response, should undergo evaluation for malignant MS.

**Keywords:** Malignant masquerade syndrome, ocular inflammation,

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### 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:** Paula Marques Marinho - Fellow  
**e-mail:** [paula.marinho@gmail.com](mailto:paula.marinho@gmail.com)

**Service:** (UV) UVEITIS  
**CEP Number:** 1241001

### 5. ABSTRACT (REQUIRED):

**Title:** Adjacent Retinochoroiditis: pathognomonic of toxoplasmosis?

**Author and Co-authors:** Paula M Marinho, Gabriel Costa de Andrade, Heloísa Moraes do Nascimento, Rubens Belfort Jr

**Purpose:** Based on other references the classic" sign of ocular toxoplasmosis infection is a necrotizing retinitis or retinochoroiditis adjacent to an inactive retinochoroidal scar. We would like to remember the importance of others differential diagnosis.

**Methods:** The authors reports three cases of retinal necrosis in eyes with precius scarrings.

**Results:** All three cases were initially managed as ocular toxoplasmosis with poor response and toxoplasmosis sorologies came out negatives. After treatment for ARN all patients clinically improved.

**Conclusion:** A necrotizing retinitis or retinochoroiditis associated with previous retinal scarring will always resemble ocular toxoplasmosis, but we need to consider the possibility of other diagnosis such as ARN, where early treatment has direct influence on prognosis.

**Keywords:** Uveitis, toxoplasmosis, ARN

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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.

**(EP) EPIDEMIOLOGY**

65. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Murilo Ubukata Polizelli - R2

**e-mail:** [murilopolizelli@gmail.com](mailto:murilopolizelli@gmail.com)

**Service:** (EP) EPIDEMIOLOGY

**CEP Number:** 1464/2016

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Quality of life in individuals with glaucoma: the utility project

**Author and Co-authors:** Murilo Polizelli, Verônica Yamada, Felipe Taguchi, Carolina P.B. Gracitelli, Flavio E. Hirai

**Purpose:** To investigate quality of life among individuals with glaucoma

**Methods:** individuals with glaucoma from the Department of Ophthalmology and Visual Sciences (Federal University of São Paulo) were submitted to quality of life questionnaires (EuroQol 5D-3L and NEI-VFQ- 25). Composite scores were calculated and compared between two groups defined by their presented visual acuity (Better than 20/60 vs. Worse or equal 20/60).

**Results:** 15 individuals (46.7% male) with mean (sd) age 68.8 (13.1) years were interviewed. Mean (sd) EQ-5D- 3L index was 0.779 (0.113) for those with better visual acuity and 0.758 (0.213) for individuals with worse visual acuity (p=0.813). The mean (sd) visual analog scale scores were 80.0 (29.2) vs. 30.0 (28.9) (p=0.005).

**Conclusion:** Quality of life scores were lower among individuals with glaucoma and worse visual acuity. The ultimate goal of this project is to value health states in order to determine utility values for future health economic analysis.

**Keywords:** Glaucoma, Quality of life, utility index

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**(EP) EPIDEMIOLOGY**

66. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Veronica Haysa Yamada - R3

**e-mail:** [veronicaepm77@gmail.com](mailto:veronicaepm77@gmail.com)

**Service:** (EP) EPIDEMIOLOGY

**CEP Number:** 1464/2016

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Title  
Author  
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Purpose  
Methods  
Results,  
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Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Comparison of quality of life and utility scores between individuals with diabetic retinopathy and keratoconus: the utility project

**Author and Co-authors:** Verônica Yamada, Felipe Taguchi , José Job Neto, , Flavio E. Hirai

**Purpose:** To compare quality of life and utility scores between individuals with diabetic retinopathy and keratoconus

**Methods:** individuals with diabetic retinopathy (DR) and individuals with keratoconus (KC) from the Department of Ophthalmology and Visual Sciences (Federal University of São Paulo) were submitted to quality of life questionnaires (EuroQol 5D-3L and NEI-VFQ-25). Composite scores were calculated and compared between two groups.

**Results:** 20 individuals with DR and 30 with keratoconus (45.0% vs. 73.3%, male,  $p=0.07$ ) with mean (sd) age 57.4 (15.1) years vs. 22.8 (6.5),  $p<0.001$ , were interviewed. Mean (sd) EQ-5D-3L index was 0.726 (0.124) for those with DR and 0.816 (0.182) for individuals with KC ( $p=0.118$ ). The mean (sd) visual analog scale scores were 47.2 (20.3) for DR vs. 64.0 (20.3) for KC ( $p=0.012$ ).

**Conclusion:** Quality of life scores were lower among individuals with diabetic retinopathy compared to those with keratoconus although not statistically significant. The calculation of utility values provides a common ground for comparison of scores among different ocular conditions and different diseases.

**Keywords:** Life quality, utility

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**(EP) EPIDEMIOLOGY**

67. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Felipe Marques de Carvalho Taguchi - R3

**e-mail:** [felmct@gmail.com](mailto:felmct@gmail.com)

**Service:** (EP) EPIDEMIOLOGY

**CEP Number:** 1852/07

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Purpose  
Methods  
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Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Acanthamoeba keratitis in a referral center in Southeast Brazil

**Author and Co-authors:** Felipe M. C. Taguchi, Maria Cecília Z. Yu, Ana Luísa Höfling-Lima, Linda C. Carrijo-Carvalho, Fábio R. S. Carvalho, Denise de Freitas

**Purpose:** To assess Acanthamoeba keratitis (AK) epidemiology in a tertiary eye care center in São Paulo and identify possible risk factors for developing the disease.

**Methods:** Patients who underwent corneal scraping for amoebic culture from 2007 to 2016 in UNIFESP Department of Ophthalmology were analyzed for age, gender, contact lens wear, previous surgeries and investigated eye. Univariate and multivariate logistic regression analyses were applied comparing AK positive and non-positive groups using IBM SPSS Statistics program.

**Results:** Acanthamoeba spp. was isolated from 157 of 1259 (12,47%) cultures requested in the studied period. Non-positive patients mean (sd) age was 42.4 (19.7) years and showed nearly equitable gender distribution, whereas the positive group mean (sd) age was 34.0 (13.5) years and was composed of 61.8% female individuals. Contact lens wear was related to 90.4% of AK-positive patients and multivariate statistical analysis demonstrated an OR (CI 95%) of 10.092 (5.733-17.767) for developing AK in comparison to non contact lens wearers ( $p < 0.000$ ).

**Conclusion:** The results corroborate previous studies describing contact lens wear as a major risk factor for AK. Despite variable incidence over the years, AK has an established importance in infectious keratitis in Brazil. Continuous surveillance for spotting opportunities aiming at prevention and early diagnosis is crucial for improving medical and visual care in our community.

**Keywords:** Acanthamoeba, epidemiology, keratitis, laboratory

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#### Abstract should contain:

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

Poster guidelines:  
**90cm x 120cm**

### 68. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Andrea Hiroshi Bando - PIBIC

**e-mail:** [andrebando@hotmail.com](mailto:andrebando@hotmail.com)

**Service:** (GL) GLAUCOMA

**CEP Number:** 77103517.

### 5. ABSTRACT (REQUIRED):

**Title:** Comparison of Reading Performance in Patients with and without Glaucoma

**Author and Co-authors:** Bando AH<sup>1</sup>, Hamada KU<sup>1</sup>, Prata S., T<sup>1</sup>, Lago Olival do<sup>1</sup>, Paranhos Jr. A<sup>1</sup>, Gracitelli CP<sup>1</sup>

**Purpose:** To evaluate differences in reading performance, between glaucoma patients and control participants without glaucoma.

**Methods:** This is a cross-sectional prospective study including 12 Glaucoma and 6 healthy participants. Glaucoma patients were defined based on the presence of repeatable standard automatic perimetry (SAP) defects at time of evaluation in at least one eye. A detailed ophthalmological examination was performed on each subject. All patients had repeatable SAP (at least 2) and all patients went through a reading performance test based on the iPad app of the MNREAD (Minnesota Low Vision Reading Test), translated and validated to Portuguese. Only glaucoma patients with at least visual acuity better than 0.5 logMAR in both eyes were included. Speed-reading was assessed as the main reading performance variable. The difference between reading performance and the best-corrected visual acuity (VA) of the better and worse eye for the two groups were investigated.

**Results:** Mean age in glaucoma and control group was 64.33±10.24 and 45.50±5.43 years, respectively (p=0.007). Average VA of the better eye of glaucoma and control subjects was 0.19±0.25 LogMAR and 0.00±0.00 LogMAR, respectively (p = 0.081). Average VA of the worse eye of glaucoma and control subjects was 0.20±0.22 LogMAR and 0.00±0.00 LogMAR, respectively (p = 0.045). Average speed-reading of glaucoma and control subjects was 101.66±38.46 seconds and 123.17±10.07 seconds, respectively at level of 0.8 LogMAR@40.0cm print size (p=0.203). Average speed-reading of glaucoma and control subjects was 102.17±37.71 seconds and 126.83±17.48 seconds, respectively at level of 0.9 LogMAR@40.0cm (p=0.151). Average speed-reading of glaucoma and control subjects was 108.25±34.70 and 131.50±8.43 seconds, respectively at level of 1.0 LogMAR@40.0cm (p=0.124). Average speed-reading of glaucoma and control subjects was 100±34.61 seconds and 121±16.68 seconds, respectively at level of 1.1 LogMAR@40.0cm (p=0.183). Average speed-reading of glaucoma and control subjects was 95.83±32.87 and 123±18.06 seconds, respectively at level of 1.2 LogMAR@40.0cm (p=0.80).

**Conclusion:** Mean age in glaucoma and control group was 64.33±10.24 and 45.50±5.43 years, respectively (p=0.007). Average VA of the better eye of glaucoma and control subjects was 0.19±0.25 LogMAR and 0.00±0.00 LogMAR, respectively (p = 0.081). Average VA of the worse eye of glaucoma and control subjects was 0.20±0.22 LogMAR and 0.00±0.00 LogMAR, respectively (p = 0.045). Average speed-reading of glaucoma and control subjects was 101.66±38.46 seconds and 123.17±10.07 seconds, respectively at level of 0.8 LogMAR@40.0cm print size (p=0.203). Average speed-reading of glaucoma and control subjects was 102.17±37.71 seconds and 126.83±17.48 seconds, respectively at level of 0.9 LogMAR@40.0cm (p=0.151). Average speed-reading of glaucoma and control subjects was 108.25±34.70 and 131.50±8.43 seconds, respectively at level of 1.0 LogMAR@40.0cm (p=0.124). Average speed-reading of glaucoma and control subjects was 100±34.61 seconds and 121±16.68 seconds, respectively at level of 1.1 LogMAR@40.0cm (p=0.183). Average speed-reading of glaucoma and control subjects was 95.83±32.87 and 123±18.06 seconds, respectively at level of 1.2 LogMAR@40.0cm (p=0.80).

**Keywords:** Glaucoma, Reading Performance



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69. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Jenifer Shen Ay Wu - R1

**e-mail:** [jenifersawu@gmail.com](mailto:jenifersawu@gmail.com)

**Service:** (GL) GLAUCOMA

**CEP Number:** 0547/2017

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Acute angle closure glaucoma in childhood: a case report

**Author and Co-authors:** Jenifer S. A. Wu MD, Izabela N. F. Almeida MD, Bruno L. B. Esporcatte MD, PhD, Christiane R. R. de Moura MD, PhD

**Purpose:** To report an uncommon case of angle closure glaucoma in an infant, with acute presentation. Imaging analysis and literature review were presented.

**Methods:** We described a 6-year-old girl, submitted to a trabeculectomy in the right eye, after an episode of acute pain and visual loss, suggestive of acute angle closure. She presented to our service with worse visual acuity and larger cup-to-disk ratio in the right eye and a shallow anterior chamber and elevated intraocular pressure in both eyes.

**Results:** The initial diagnosis was thought to be primary angle closure glaucoma. The UBM and Visante OCT photographs confirmed a 360 degrees closed angle in the right eye and a narrow angle in the left eye, as well as bilateral shallow anterior chamber. However, the exams also demonstrated thickened cornea, anterior and posterior synechiae, anteriorization of the ciliary processes and a lens/anterior chamber depth desproportion. Hypotensive drops were used and surgical iridectomy was performed in the left eye in order to prevent a contralateral pupillary block. Similar findings were seen in the patient's father, suggesting an inherited anterior segment dysgenesis.

**Conclusion:** Angle closure glaucoma is rarely seen in children. Previous studies reported this pathology associated with other conditions such as Weill-Marchesani syndrome, geleophysic dysplasia, after laser treatment for retinopathy of prematurity or oral topiramate and oxybutynin use. Regardless of the low incidence of this kind of glaucoma in infants we emphasize the importance of complete ophthalmic examination including analyzing the anterior chamber depth at biomicroscopy, in order to predict and prevent a future pupillary block. Furthermore, this diagnosis should be considered even in pediatric patients.

**Keywords:** anterior segment dysgenesis, angle closure glaucoma, glaucoma, child, ultrasound biomicroscopy

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70. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Mariana Kawamuro - R2  
**e-mail:** [mkawamuro@gmail.com](mailto:mkawamuro@gmail.com)

**Service:** (GL) GLAUCOMA  
**CEP Number:** 0883/2016

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Comparison of inflammation, intraocular pressure and discomfort in patients undergoing laser iridotomy with pilocarpine or white light

**Author and Co-authors:** Mariana Kawamuro, Luis F Nakayama, Bruno L B Esporcatte, Ivan M Tavares, Norma Allemann, Luiz A S Melo Jr

**Purpose:** Compare inflammation, intraocular pressure and discomfort after laser iridotomy by means of two techniques to induce miosis: pilocarpine 2% instillation or the use of bright white light in the fellow eye.

**Methods:** Patients with primary angle closure suspect, primary angle closure and primary angle closure glaucoma were enrolled. To promote miosis before the iridotomy, the patients were randomly assigned either to receive one drop of pilocarpine 2% previously instilled in the study eye or to have a bright white light illuminating the fellow eye during iridotomy. All participants received one drop of brimonidine tartrate 0.2% in the study eye 30 minutes before the iridotomy. The iridotomy was performed in the superior region of the iris with initial energy 2-8 mJ under topical anesthesia. The intraocular pressure was measured with a Goldmann tonometer and inflammation was graduated in the slit lamp lamp. Just before the iridotomy, 30 to 120 minutes, 24 hours and 6-8 days after the procedure. Patients assigned a grade for discomfort / pain in a scale from 0 to 10 after the iridotomy. Patients used prednisolone acetate 1% and brimonidine tartrate 0.2% eyedrop after the procedure for 7 days.

**Results:** Laser iridotomy was performed in 18 eyes of 11 patients - 9 eyes to in the pilocarpine group and 9 eyes to in the light group. The pilocarpine group, 4 eyes presented primary angle closure suspect, 4 primary angle closure, and 1 primary angle closure glaucoma. The light group had 5 eyes with primary angle closure suspect, 2 primary angle closure and 1 primary angle closure glaucoma. The energy median used in the pilocarpine group was 55 (12.1 - 160 mJ) and in the light group was 47.4 (8.2 - 210 mJ) (P = 0.83). At this point of the study, it was not found any statistical difference regarding inflammation (P=0.32), intraocular pressure (P=0.66) and ocular discomfort (P=0.41) between both groups.

**Conclusion:** No statistically significant difference in inflammation, intraocular pressure and discomfort after laser iridotomy was found between pilocarpine and bright white light use.

**Keywords:** pilocarpine, iridotomy, intraocular pressure, inflammation, light, glaucoma

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

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71. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Marilia Cirillo Rollo - R1  
**e-mail:** [mari\\_cirillo@hotmail.com](mailto:mari_cirillo@hotmail.com)

**Service:** (GL) GLAUCOMA  
**CEP Number:** 4039003

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Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** A successful use of scleral Tutoplast for recovering a glaucoma drainage device after multiple exposures: a case report.

**Author and Co-authors:** Marília Cirillo Rollo  
Christiane Rolim  
Denise de Freitas

**Purpose:** To report a case of a successful use of scleral Tutoplast for recovering a glaucoma drainage device after multiple previous exposures using distinct types of allograft, such as cornea and sclera.

**Methods:** The medical record of a primary closed-angle glaucoma patient who underwent the implantation of an Ahmed tube with multiple exposures of this drainage device and that has been followed up periodically since 2004 was reviewed.

**Results:** The patient was submitted to a reconstruction of an exposed glaucoma drainage device path with a scleral Tutoplast and the tube remained covered for 30 months until present, avoiding so far any infectious event.

**Conclusion:** The scleral Tutoplast seems to be an effective method for recovering a glaucoma drainage device, even after several previous exposure of the tube using different patch grafts.

**Keywords:** patch graft, Tutoplast, glaucoma, tube exposure

## 2017 Research Days Abstract Form

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

**(GL) GLAUCOMA**

72. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Roberto Murad Vessani - Post-doc

**e-mail:** [robves@terra.com.br](mailto:robves@terra.com.br)

**Service:** (GL) GLAUCOMA

**CEP Number:** 1813753

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### FORMAT:

**Abstract should contain:**

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Structure and function longitudinal changes after surgical intraocular pressure reduction in open angle glaucoma patients

**Author and Co-authors:** Roberto M Vessani, Priscila C Correa, Eduardo B Mariotoni, Nara L Lopes, Gabriela de Alencar C Shigetomi, Ivan Maynard Tavares

**Purpose:** Evaluate structural and microvascular ocular perfusion measurements of the optic disc, retina and choroid by swept-source OCT in glaucomatous patients before and after IOP reduction by glaucoma surgery. Evaluate functional measurements by achromatic automated perimetry in glaucomatous patients before and after IOP reduction by glaucoma surgery.

**Methods:** This is a multicenter prospective consecutive observational study. Patients with primary open angle glaucoma, exfoliative glaucoma or pigmentary glaucoma who met eligibility criteria with uncontrolled IOP on maximal medical therapy requiring trabeculectomy or aqueous drainage device implantation will be included. Controls will consist of medically treated glaucoma patients with stable IOP during follow-up. All subjects will be submitted to complete ophthalmic examination, swept-source Optical Coherence Tomography evaluation (DRI OCT Triton, TOPCON), and automated perimetry (Humphrey Visual Field Analyzer, Carl Zeiss) before, 1 and 2 months after glaucoma surgery. Optic disc, retinal nerve fiber layer, and macular parameters measured by OCT, vessel density obtained by angio-oct and global and localized visual field parameters will be determined and compared.

**Results:** This is an ongoing study.

**Conclusion:** It is expected that possible structural and microvascular changes measured by SS-OCT and functional changes measured by achromatic automated perimetry after surgical IOP reduction may be detected. The relationship of these possible changes will be analyzed.

**Keywords:** glaucoma surgery; swept-source optical coherence tomography; angio-oct; automated perimetry

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

Poster guidelines:  
**90cm x 120cm**

73. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Elaine Regina Sato Watanabe - R2  
**e-mail:** [elaine\\_watanabe@yahoo.com.br](mailto:elaine_watanabe@yahoo.com.br)

**Service:** (GL) GLAUCOMA  
**CEP Number:** 1971313

5. ABSTRACT (REQUIRED):

**Title:** Vascular Evaluation of Open Angle Glaucoma and Healthy Eyes Using Optical Coherence Tomography Angiography

**Author and Co-authors:** Watanabe, E.R.S., Taniguchi, E.V., Zett, C., Silva, L.S.C., Almeida, I., Gracitelli, C.P.B., Prata, T.S., Paranhos, A.

**Purpose:** To qualitatively evaluate vascular changes in open angle glaucoma patients and healthy controls using optical coherence tomography angiography (OCT-A).

**Methods:** Nine open angle glaucoma patients, with visual acuity better than 20/60, and no other ocular pathology were recruited to this study, along with 04 age-matched healthy subjects. Swept source OCT-A (DRI OCT Triton, Topcon, Japan) was performed in both eyes of all subjects and each set of scans comprised a 3 x 3 mm and a 4.5 x 4.5 mm image of the optic nerve head along with retina nerve fiber layer (RNFL) thickness measurement. Three experts qualitatively evaluated OCT-A images of the optic nerve head and capillary density and identified low vascular density areas as well as areas of normal vasculature. RNFL abnormal areas (red sectors in the RNFL thickness deviation map) were recorded. Only one eye per patient was analyzed.

**Results:** Visual field mean deviation was -6.1 +/- 6.0 db. in open angle glaucoma patients and -1.4 +/-1.1 db. in controls. In the qualitative evaluation of capillary density, preliminary results show that 77.8% of OAG patients presented with vascular changes versus 0.0% of healthy controls. Mean RNFL thickness was 90.0 +/- 14.0 µm in open angle glaucoma and 104.0 +/- 9.0 µm in healthy controls.

**Conclusion:** In progress.

**Keywords:** open-angle glaucoma, optical coherence tomography angiography

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**(CO) CORNEA AND EXTERNAL DISEASE**

74. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Fabio Mendonça Xavier Andrade - Fellow  
**e-mail:** [fabio16.xavier@gmail.com](mailto:fabio16.xavier@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE  
**CEP Number:** 1071387

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#### Abstract should contain:

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Ocular surface findings in the treatment of Rosacea: comparison between doxycycline and isotretinoin

**Author and Co-authors:** Fábio Mendonça Xavier Andrade, MD\*, Fabíola Rosa Picosse, MD\*\*, Edléia Bagatin, MD, PhD\*\*, Denise de Freitas MD, PhD\*.

\*Department of Ophthalmology, Federal University of São Paulo, São Paulo, Brazil1.

\*\*Department of Dermatology, Federal University of São Paulo, São Paulo, Brazil2.

**Purpose:** To evaluate the ocular surface of patients undergoing systemic treatment for Rosacea with two different medications (doxycycline and isotretinoin) and compare the findings in both groups.

**Methods:** After randomization, patients were given either isotretinoin (0,3 to 0,4/mg/kg/day) or doxycycline (100mg/day fixed-dose) for 16 weeks. An ophthalmologic exam that included visual acuity, Schirmer I test, break up time (BUT) test and eyelid evaluation was done before treatment and 4 months after.

**Results:** This study is still being conducted. Until now, 11 patients were included, 8 females (72,7%) and 3 males (27,3%). 7 patients were randomized to the doxycycline group and 4 to the isotretinoin. Prior to treatment, 72,7% had ocular symptoms, such as burning sensation and itching. All the patients had best corrected visual acuity (BCVA) equal or better than 20/30. Schirmer I test varied from 0-5 (27,3%), 6-10 (18,2%), 11-20 (27,3%) and >20 (27,3%). Most of the patients had a low BUT (0-5s in 70%). Meibomian gland dysfunction was found in all patients, ranging from light (45,5%), moderate (27,3%) and severe (27,3%). After treatment, BCVA had no alterations. The doxycycline group had more decrease in Schirmer's test value. The only cases of worsening in the break up time were found in the isotretinoin group and most of the alterations in the eyelid and meibomian glands remained, with no difference between the two groups.

**Conclusion:** Most of the patients with Rosacea have ocular symptoms and the visual acuity is preserved. Schirmer I test and BUT alters during treatment and differences between the two groups could highlight as this study progresses.

**Keywords:** Rosacea - Ocular surface - Doxycycline - Isotretinoin - Schirmer

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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**

75. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Júlia Gomes Fernandes Polido Cabral - PG0

**e-mail:** [juliapolido@yahoo.com.br](mailto:juliapolido@yahoo.com.br)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 1887/11

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**Abstract should contain:**

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Co-authors (maximum 6)  
Purpose  
Methods  
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Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Efficacy and safety of riboflavin-ultraviolet type A rays inducing cross-linking of corneal collagen in patients aged 8 to 16 years with progressing keratoconus.

**Author and Co-authors:** Júlia Polido, Tais Wakamatsu, Eliane Mayumi, Thiago Cabral, Maria Emília Araújo, Denise de Freitas.

**Purpose:** To assess the effectiveness and safety of riboflavin-ultraviolet type A rays induced cross-linking of corneal collagen in reducing progression of keratoconus and in improving visual acuity in pediatric patients with progressive keratoconus.

**Methods:** Prospective nonrandomized open study comprised 63 eyes of 56 patients, aged between 8 to 16 years affected by progressive keratoconus, were treated by combined riboflavin-ultraviolet type A rays (UVA) collagen cross-linking. Radiant energy was 3 mW/cm<sup>2</sup> or 5.4 joule/cm<sup>2</sup> for a 30-minute exposure at 5 cm from the corneal apex. After treatment, eyes were medicated and dressed with a soft contact lens. A complete ophthalmologic examination (uncorrected visual acuity [UCVA], best spectacle-corrected visual acuity [BSCVA]) was performed before treatment, at 3, 6, 12, 24 and 36 months afterwards. Patients had corneal computerized topographic examination, anterior segment ocular coherence tomography, Scheimpflug imaging providing corneal pachymetry and tomography imaging, endothelial cell count, and in vivo confocal microscopy.

**Results:** Sixty-three eyes of 56 patients were submitted to corneal cross-linking, of which 44 were male and 13 were female. Most patients have 2 years of follow-up and will complete 3 years of follow-up in November 2017.  
Note: Waiting for the follow-up of 3 years to carry out the statistical analysis. Later I will add the results found.

**Conclusion:** Study in progress.

**Keywords:** corneal collagen cross-linking; efficacy; pediatric patients; keratoconus

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**(CO) CORNEA AND EXTERNAL DISEASE**

76. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Luciana Lopes Rocha - R4  
**e-mail:** [luciana\\_lr@yahoo.com.br](mailto:luciana_lr@yahoo.com.br)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE  
**CEP Number:** 4024003

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**Abstract should contain:**

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Corneal Transplantation In Patients With Acanthamoeba Ceratite

**Author and Co-authors:** Luciana Lopes Rocha, Denise de Freitas

**Purpose:** To evaluate the results involving corneal transplantation by Acanthamoeba

**Methods:** Transversal, observational, retrospective, descriptive and analytical study. To be performed in the Department of Ophthalmology of the Paulista School of Medicine using data from the patients' charts, as well as anatomopathological analysis and cultures. Patients with clinical and laboratory diagnosis of Acanthamoeba infectious keratitis who were followed up by the Department of Ophthalmology of the Federal University of São Paulo until November 2017 will be included. Patients will be excluded of this research if they do not agree to participate after explaining the research for signing the TCLE and those patients who present incomplete and / or confused electronic medical records. Informations about sex, age, clinical and etiological diagnosis, post operative visual acuity, recurrence or non-recurrence of infection and medications of patients with CA who underwent penetrating keratoplasty until November 2017 will be collected.

**Results:** Partial results: Twenty patients have been reviewed: 55% are male and 95% contact lens users these 89.5% by gelatinous lenses. The first culture was positive in 75% of cases. The clinical treatment lasted around 6 months and a half. Post operative complications were present in 60% of the cases: the most common was glaucoma. The final visual acuity better than 20/30 was present in 50% of the patients.

**Conclusion:** Through the partial results, we confirmed that the use of contact lens is the main risk factor, especially the gelatinous ones. Through this study we want to observe which type of transplant, therapeutic or optical, would have more successful in the long time, And if the results of culture and pathological anatomy are prognostic factors.

**Keywords:** corneal transplantation; Acanthamoeba



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### 2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):

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**(CO) CORNEA AND EXTERNAL DISEASE**

### 77. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Matheus Porto Sticca - R4

**e-mail:** [86matheus@gmail.com](mailto:86matheus@gmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 05653-160

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### FORMAT:

#### Abstract should contain:

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

Poster guidelines:  
**90cm x 120cm**

### 5. ABSTRACT (REQUIRED):

**Title:** Prevalence of cataract-mydriasis-glaucoma syndrome in Acanthamoeba keratitis

**Author and Co-authors:** Matheus Porto Sticca, Denise de Freitas

**Purpose:** To determine the prevalence of cataract-mydriasis-glaucoma syndrome in Acanthamoeba keratitis among patients referred to the Ophthalmology Department at Federal University of São Paulo (UNIFESP).

**Methods:** Retrospective evaluation of the records of all the patients who developed cataract-mydriasis-glaucoma syndrome in Acanthamoeba keratitis.

**Results:** The prevalence and other data provided by this study may provide better comprehension of the complications in Acanthamoeba keratitis.

**Conclusion:** Acanthamoeba keratitis is an uncommon disease. Its often non-specific findings may cause a delay in diagnosis and the initiation of specific therapy. Severe keratitis usually occurs in the prolonged stages associated with extracorneal complications and significant vision loss. Among other complications, the formation of rapidly progressive cataract, iris atrophy with permanent mydriasis, and secondary glaucoma are pointed out by several authors, and appear to coexist in some patients. It is suggested that they may be induced by the drugs used in treatment, or by immunological and ischemic changes. Further studies are needed to clarify the role of ongoing ocular inflammation in Acanthamoeba keratitis, improving the management of this condition resulting in more favorable visual outcomes.

**Keywords:** 1. Acanthamoeba keratitis. 2. Rapidly progressive cataract. 3. Iris atrophy. 4. Secondary glaucoma.

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**(CO) CORNEA AND EXTERNAL DISEASE**

78. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Paulo Alberto Cervi Rosa - R1

**e-mail:** [paulopacr@hotmail.com](mailto:paulopacr@hotmail.com)

**Service:** (CO) CORNEA AND EXTERNAL DISEASE

**CEP Number:** 0

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

**Poster**

5. ABSTRACT (REQUIRED):

**Title:** Necrotizing Streptococcus pyogenes infiltrating conjunctiva and Tenon's capsule: a case report

**Author and Co-authors:** Rosa PAC, Polizelli MU, Oliveira LA.

**Purpose:** Case report of a patient with secondary infection of the conjunctiva and Tenon's capsule caused by Streptococcus pyogenes, an ophthalmologic condition with few cases reported in medical literature.

**Methods:** Case Report: a 50-year-old male patient with history of viral conjunctivitis with worsening of the symptoms after one week, being diagnosed with preseptal cellulitis and worsening of the conjunctival involvement, with a membrane that covered the cornea and areas of conjunctival necrosis. Due to the possibility of postseptal involvement, showed in the computerized tomography, the patient was hospitalized and treatment with intravenous antibiotics was initiated (Ceftriaxone and Clindamycin).

**Results:** The patient evolved with progressive improvement of the symptoms after the treatment with systemic and topical antibiotics and corticosteroids and with remission after two weeks of treatment. Ancillary exams showed no rheumatologic involvement. Conjunctival culture showed Streptococcus pyogenes growth.

**Conclusion:** This case shows a patient with a secondary infection with necrotizing Streptococcus pyogenes infiltrating conjunctiva and Tenon's capsule associated with preseptal cellulitis. In the medical literature we found another case report of a child that developed a rapidly progressive necrotizing Tenon's capsule infection due to Streptococcus pyogenes after strabismus surgery. It is a case in which in spite of its atypical presentation and evolution, the response to the treatment and the patient's final ophthalmologic health state was positive. And also due to the existence of few reports of similar cases in the medical literature, it is important to share this example with the medical community.

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(UV) UVEITIS

**Deadline: 10/2017**

**Keywords:** conjunctivitis, conjunctiva, Tenon's capsule, Streptococcus, pyogenes, cellulitis, preseptal

### FORMAT:

#### Abstract should contain:

Title  
Author  
Co-authors (maximum 6)  
Purpose  
Methods  
Results,  
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**(LA) LABORATORY**

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Conclusion  
Keywords

Poster guidelines:  
**90cm x 120cm**

### 79. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Alexandre Xavier da Costa - PG1

**e-mail:** [dr.alexandre.x@gmail.com](mailto:dr.alexandre.x@gmail.com)

**Service:** (LA) LABORATORY

**CEP Number:** 341706081

### 5. ABSTRACT (REQUIRED):

**Title:** Definition of a Methodology To Establish a Reference Pattern of the Measure of Drop Volume of Eyedrops - A Quality And Reliability Study

**Author and Co-authors:** Alexandre Xavier da Costa, Vagner Rogério dos Santos, Vitorugo Nascimento, Priscila Cristovam, Maria Cecilia Zorat Yu, José Álvaro Pereira Gomes.

**Purpose:** To define a methodology to establish a reference pattern for the drop volume of eyedrops using laboratory analysis material.

**Methods:** Five brands of lubricant eyedrops were evaluated for drop volume. To determine the weight of the ideal standard drop of each manufacturer, 20µL of each eyedrop were captured using an adjustable micropipette and 5 measurements of the weight of this volume were made in calibrated precision scales. The eyedrop bottles were numbered from 1 to 5 and randomly selected for measurement.

**Results:** The results of the values of the individual mass of each 20 µL drop and the mean value of the droplet mass and its respective standard deviation are shown in the tables. The global mean mass of the weighted drops was 0.01824g. Analyses of simple variance were performed.

**Conclusion:** Among the different manufacturers, significantly different values of mass for a drop with a volume of 20 µL were measured. However, among the drops of the same product, the mass variation was statistically non-significant. This variation in drop volume assessed using standard laboratory equipment suggests that suppliers and researchers must be aware of dosage discrepancies and adjust accordingly. To address variable drop volumes, a reference pattern should be established to maintain consistency in dosage delivery. By comparing the mass of the ideal drop of 20 µL and the mass of one actual drop measured directly from the eyedrop bottle, manufacturers can easily estimate the difference between the ideal drop of that product and the real drop volume that this bottle is producing, reducing drop volume discrepancies and ensuring proper long-term treatment for patients.

**Keywords:** reference pattern, standardization, eyedrops, drop volume

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

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### 80. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Renan Mendonça Rodrigues - PG0

**e-mail:** [renanrodrigues.med@gmail.com](mailto:renanrodrigues.med@gmail.com)

**Service:** (RS) REFRACTIVE SURGERY

**CEP Number:** 505523091

### 5. ABSTRACT (REQUIRED):

**Title:** Ultraviolet-A Absorbance Analysis in Thin Porcine Corneas Pre and Post Crosslinking

**Author and Co-authors:** Rodrigues, R. A. M. - São Paulo/SP, Brazil, Department of Ophthalmology (UNIFESP)

Guidini, Priscila - Opto Eletrônica S.A.

Mario Stefani - R&D Advisory Board Chairman - Opto Eletrônica S.A.

Bersanetti, P. A. - São Paulo/SP, Brazil, Biochemistry Department (UNIFESP)

Schor, Paulo - São Paulo/SP, B

**Purpose:** Demonstrate UV-A radiation (365nm) spectral absorbance profile in thin porcine corneas submitted to crosslinking.

**Methods:** Twelve porcine thin corneas were obtained after LASIK (Moria, LSK-ONE, France) and mechanical de-epithelization, separated in 3 thickness groups: 180, 300 and 360 micra. After LASIK, lamellas were evaluated with AS-OCT (Optovue, EUA) to determination of pachymetry. All groups had UV-A (365nm) absorbance measured with a spectrophotometer (Epoch 2, Biotech Instruments, EUA) before riboflavin 0,1% instillation, pre and post crosslinking (Opto XLink, Brazil), according Dresden protocol. It was used a 96 well UV transparent microplate.

**Results:** in progress

**Conclusion:** in progress

**Keywords:** ultraviolet light, spectrophotometry, crosslinking reagents, keratoconus, corneal pachymetry

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Purpose  
Methods  
Results  
Conclusion  
Keywords

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### 81. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Camila Mendes Costa Campelo - Fellow

**e-mail:** [c.campelo89@hotmail.com](mailto:c.campelo89@hotmail.com)

**Service:** (CA) CATARACT

**CEP Number:** 4119002

### 5. ABSTRACT (REQUIRED):

**Title:** The use of 2% methylcellulose and the postoperative intraocular pressure (IOP)

**Author and Co-authors:** Camila Mendes Costa Campelo  
Heloisa Moraes do Nascimento

**Purpose:** This study aims to evaluate the postoperative pressures on the 1st, 7th and 30th postoperative days (POD) of cataract surgery with the use of 2% Methylcellulose (MTC) from Ophthalmos.

**Methods:** Study was performed at IPEPO and evaluated 190 eyes on the 1st, 7th and 30th POD. Exclusion criteria were: patients < 18 years, pregnancy and presence of corneal pathology or ocular hypertension (OH) that contraindicated surgery. Glaucoma, suspected glaucoma or OH controlled were not excluded. Surgeries were performed by the same two surgeons, using the phacoemulsification technique with intraocular lens implantation (Alcon Acrysof) and 2% MTC. The removal of MTC was made through the bimanual aspiration/irrigation system. Miotic agents were not used and none of the surgeries had any complications. Tonometry was performed by the same examiner, with the Goldmann applanation tonometer. IOP > or = 21mmHg was considered OH. IOP > or = 24 mmHg were treated with topical ocular hypotensive agents alone, and IOP > 30 mmHg received systemic ocular hypotensive in combination.

**Results:** The average of IOP on the 1st, 7th and 30th POD were: 19 mmHg, 13 mmHg and 14 mmHg, with a standard deviation of 7.41 on the 1st POD, 3,20 on the 7th POD and 2.35 on the 30th POD. On the first POD, 46 patients (24%) had OH. Among these patients, 6 (3.1%) had IOP between 21- 23 mmHg and no therapy was used, 29 (15.1%) had IOP between 24 -30 mmHg and used topical ocular hypotensive monotherapy, and 11 (5.8 %) presented IOP > 30 mmHg and topical ocular hypotensive combined with systemic therapy was required. 2 patients maintained OH after the 7th POD despite the use of the hypotensive and 1 patient presented an increase of IOP at the 30th POD.

**Conclusion:** The increase of IOP on the 1st POD is a frequent occurrence. In the study by MacRae et al., between the 1st and the 4th hour, the maximum ocular pressure with 1% sodium hyaluronate was 67mmHg, with 20% chondroitin sulfate was 55mmhg and there was no significant increase with 10% chondroitin sulfate and 0.4% MTC. Barron et. al., that compared Viscoat and Healon, have seen that some postoperative IOP were as high as 50-60mmHg, despite the removal of the viscoelastic substance at the end of the surgery. Fechner et al., which studied 2% MTC, have reported an increase of IOP on the 1st POD around 33.1 mmHg in phacoemulsification surgeries and 30.2 mmHg in extracapsular surgeries. It was considered a benign behavior of MTC within the eyes, in relation to IOP. The author also ratifies the safety of the use of MTC, which, although not metabolized by the eye, was considered an inert substance. MTC also has the advantages of having a low cost and a large amount of product per unit. In conclusion, the behavior of 2% MTC is within the expected standards. Further researches are suggested.

**Keywords:** intraocular pression; cataract sugery; postoperative intraocular pression; methylcellulose

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### 82. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Ibraim Viana Vieira - PGO

**e-mail:** [ibraim@gmail.com](mailto:ibraim@gmail.com)

**Service:** (CA) CATARACT

**CEP Number:** 2035626

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Purpose  
Methods  
Results,  
Conclusion  
Keywords

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### 5. ABSTRACT (REQUIRED):

**Title:** Evaluation of initial dexterity and rate of phacoemulsification complications during learning period

**Author and Co-authors:** Vieira, Ibraim Viana; Chamon, Wallace

**Purpose:** Evaluate the manual dexterity of newly admitted physicians in the ophthalmology residency program as a predictor of surgical complications in the second and third year of phacoemulsification training.

**Methods:** Cohort study involving about 30 first year residents in ophthalmology of four different institutions. Residents will be submitted to manual dexterity assessment in a virtual simulator at the beginning of the course and during their training. The skill level will be correlated with rate of surgical complications in the second and third year of training.

**Results:** Expected results?  
Candidates with higher initial skill will present fewer complications in phacoemulsification surgery during the training period.

**Conclusion:** The results of this study will optimize the selection process for medical residents and medical education in ophthalmology

**Keywords:** phacoemulsification, virtual reality, medical education, surgery, dexterity

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Purpose  
Methods  
Results  
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Keywords

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### 83. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Natalia Mussi - PG0  
**e-mail:** [natalia\\_mussi@yahoo.com.br](mailto:natalia_mussi@yahoo.com.br)

**Service:** (CA) CATARACT  
**CEP Number:** 4041002

### 5. ABSTRACT (REQUIRED):

**Title:** The importance of Galectin 3 in Exfoliation syndrome

**Author and Co-authors:** Natalia Mussi, Mauro Campos, Cristiane Damas Gil

**Purpose:** Exfoliation syndrome (XFS), is the most common identifiable cause of open-angle glaucoma world-wide. It is an age-related, systemic, disease characterized by the production and progressive accumulation of a fibrillar extracellular material in many organs and ocular tissues. This material is a deposit of white, flaky material in all anterior segment structures, including the iris, pupillary border, lens capsule, zonules, and trabecular meshwork. The polymorphism in the gene LOXL-1 (lisyl oxidase-like 1) was identified as one of the causes of XFS. This gene is essential for the formation, stabilization, maintenance, and remodeling of elastic fibers. The galactines, family of animal lecithines in number of 15, are defined by the affinity for p-galactoside sugars. They are found intracellularly and extracellularly. The galectine 3 (GAL-3) contain one a carbohydrate-recognition domain and a disordered N-terminal. They are responsible for many cellular processes such as apoptosis, growth and immunity. Cerebrovascular and cardiovascular diseases, which levels of Gal-3 are high, are frequently an association with XFS.

**Methods:** An experimental study which pilot project in which we used the aqueous humor of 5 eyes with XFS and 10 eyes without the disease (control). The material was acquired during cataract surgery and immediately frozen. After that the samples were processed and evaluated the presence and the levels of galectine 3, by the ELISA (Enzyme Linked Immunosorbent Assay) method. Next step will be collect new samples, 3 eyes with XFS and 3 controls, and analyze by electron microscopy. We will look at the cells of the anterior capsule of the lens to do immunostaining with galectin-3. Thus we could verify whether the expression of the protein in the disease increases and whether these cells are producing Gal-3.

**Results:** In the group with the disease, the statistical significance ( $p < 0.0001$ ) occurred because of one patient. The control group was very homogeneous, the mean gal-3 level was 0.5853 ng/ml (0.251-1.554 ng/ml). The disease group the mean was 1.158ng/ml (0.239-3.395 ng/ml).

#### Conclusion:

Until this moment we have indications of the relationship between the increase of Galectin-3 level and the development of exfoliation syndrome. However more tests need to be performed and the number of samples increased.

**Keywords:** Exfoliation syndrome, cataract, Galantines, Galantine-3

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84. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Aline Lutz de Araujo - PG0

**e-mail:** [alinelutz.a@gmail.com](mailto:alinelutz.a@gmail.com)

**Service:** (BE) OCULAR BIOENGINEERING

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

Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Cost-effectiveness of refraction using a smartphone-powered refraction system

**Author and Co-authors:** Aline Lutz de Araujo, Sophia Vicenzzi Zanatta Valentini, Paulo Schor

**Purpose:** To measure the cost-effectiveness of using the Near Eye Tool for Refractive Assessment (NETRA, EyeNetra Inc., Somerville, USA) for refraction in the community. To determine the incremental cost-effectiveness ratio when compared to conventional ophthalmological care. NETRA is a smartphone-powered refraction system that measures refractive error, both objectively and subjectively.

**Methods:** The effectiveness of the refraction with the NETRA system was measured in terms of utility. Utility is a preference-based quality of life value ranging from 0 (death) to 1 (perfect health). In our study, full utility equals to perfect vision. Utilities for the following uncorrected vision states were collected: no visual impairment, mild to moderate distance vision impairment (20/200 or better), severe distance vision impairment (worse than 20/200), and near vision impairment. The prevalence of each state was assumed to be the same from previous surveys. The costs of the NETRA strategy and of standard ophthalmologist-performed autorrefraction and phoropter lens testing are estimated. TreeAge software will be used to model the visual acuity states overtime. Quality-adjusted life years (QALYs) will be obtained by multiplying the utility value by the number of years a person lives in each state.

**Results:** Uncorrected refractive errors are associated with the following reductions in utility: 0.84 for mild to moderate distance vision impairment, 0.67 for severe distance vision impairment, and 0.85 for near vision impairment. The prevalence of presenting visual impairment in São Paulo is 5.2%, and uncorrected refractive errors accounts for 72.3% of its causes. Interventions' costs calculations are in progress.

**Conclusion:** Since NETRA instruments are more affordable than conventional ophthalmic equipment, are ultra-portable and can be operated by the patient under technician supervision, they can aid in providing glass prescription in remote or underserved locations. Our study will provide data on the economics of the strategy.

**Keywords:** refraction, refractive error, cost-effectiveness, cost-utility, smartphone



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85. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Ana Luiza Fontes de Azevedo Costa - PG1

**e-mail:** [luizafacosta@hotmail.com](mailto:luizafacosta@hotmail.com)

**Service:** (BE) OCULAR BIOENGINEERING

**CEP Number:** 4565000

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5. ABSTRACT (REQUIRED):

**Title:** Multisensory sleeves for eyedrop bottles to help patients with impaired vision

**Author and Co-authors:** Ana Luiza Fontes de Azevedo Costa; Thiago Gonçalves dos Santos Martins; Paulo Schor

**Purpose:** To develop eyedrop bottle sleeves with different textures and odors. The sleeves will help patients identify their eyedrops and avoid mistakes of identification.

**Methods:** The sleeves are made of flexible material with different textures and odors adaptable to most eyedrop bottles available on the market nowadays. We randomly selected 31 healthy volunteers to participate in a test which consists on presenting four different eyedrop bottles in four different situations. First we presented the regular eyedrops for the volunteers to have contact with. Then they were blindfolded and asked to identify the different eyedrop bottles. After that, we presented the same eyedrop bottles, now with the different texture sleeves on, and they had to identify each one while blindfolded. Then we presented the eyedrop bottles with the different odor sleeves, blindfolded them and asked them to identify. Last of all, we presented the four eyedrops with texture and odor sleeves for them to identify while blindfolded.

**Results:** From the total of 31 volunteers, 42% were men and 58% women, aged from 20 to 90 years old. The success rate of identification without the sleeves was 19%, and went up to 94% with the sleeves with different odors, 97% with different textures and 99% with both. Patients preferred the special sleeves with textures (58%) rather than just with odors (6%) or both (36%).

**Conclusion:** The use of the special sleeves with textures and odors increased the chance of identifying the eyedrop bottles. Using the intact senses of patients with visual problems could help avoid eyedrop misidentification, a practice common not only for patients with visual impairment, but also for patients who use more than one eyedrop.

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**Keywords:** eye drop bottle, multisensory, vision impairment

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

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86. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Caio Henrique Marques Texeira - PIBIC

**e-mail:** [caiomtex@gmail.com](mailto:caiomtex@gmail.com)

**Service:** (BE) OCULAR BIOENGINEERING

**CEP Number:** 1564/06

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Methods  
Results  
Conclusion  
Keywords

Poster guidelines:  
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5. ABSTRACT (REQUIRED):

**Title:** Technological Development: Visual Impairment and Smart Cities

**Author and Co-authors:** Caio Henrique Marques Texeira<sup>1</sup>, Aline Sutili Toledo<sup>2</sup>, Celia Regina Nakanami<sup>3</sup>, Vagner Rogério dos Santos<sup>1</sup>.

<sup>1</sup> GS. Ophthalmic Medical Technologist, Ophthalmology and Visual Sciences Department, UNIFESP-EPM.

<sup>2</sup> MD. Ophthalmologist, Ophthalmology and Visual Sciences Department, UNIFESP-EPM.

<sup>3</sup> PhD. Opht

**Purpose:** The term "visual impairment" refers to irreversible visual loss, even after medical treatment. For visually impaired people, moving through places requires sensor-motor-cognitive skills, including perception, codification, learning and space information recall. That assignment can be stressful, especially for the existence of two factors that directly affects the process of space orientation: environment layout and environment quality information. Even though law guarantees their rights, visually impaired people face many problems when it comes to urban mobility, such as bumpy sidewalks, urban furniture (benches, trash cans, street signs, bus stop, telephone cabins) and few or no signaling, making harder and dangerous to cross streets. Trying to improve urban life, including mobility, smart cities have emerged, where information and communication technologies are used to provide interactivity in infrastructure aspects of accessibility. The purpose of this study is to propose the development of a smart electronic cane that provides better accessibility and mobility, applied to Smart Cities."

**Methods:** A bibliographical survey was made on existing white canes, their selling prices and their national manufacturers, and on existing electronic canes. From this, it was defined the concept 1 of smart electronic cane proposed in this study.

**Results:** There are two kinds of white canes: dry-tip and roller, sold for an average of R\$ 90,00. Seven national manufacturers of these canes were found, none of them make electronic canes.

There are two electronic canes on the market: the Smart Cane, manufactured in India, and the Ultra Cane, in the United Kingdom. However, there are no reports about use or sale price of Smart Cane, Ultra Cane is sold for £635, but, also, there are no reports about use of Ultra Cane.

**Conclusion:** Based on the results so far, it is practicable to continue studies for the development of a smart electronic cane applied to Smart Cities. CNPq - Technological and Industrial Initiation Grant.

**Keywords:** visual impairment; white cane; electronic cane; smart electronic cane; smart cities.

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87. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Marlon Ribeiro Silva - PG1

**e-mail:** [marlon.educ@gmail.com](mailto:marlon.educ@gmail.com)

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Title  
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Co-authors (maximum 6)  
Purpose  
Methods  
Results,  
Conclusion  
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Poster guidelines:  
**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Innovation into Healthcare as Technological Irrationality: A Criticism to the Invention of Needs

**Author and Co-authors:** Marlon Ribeiro da Silva, Paulo Schor

**Purpose:** According to the German philosopher Jürgen Habermas, technique and science are ideologies, whereas, in the capitalist mode of production, they also present themselves as domination means. Thus the concept of technological rationality is defined, where the solutions to human issues could only happen by operationalizing reason, that is to say, scientific knowledge. Based on these assumptions, we criticize the ideal of innovation in healthcare as a way of inventing needs by looking at the market regardless of the interests of the people who will benefit" from the developed technology."

**Methods:** Our reflection is mainly based on philosophers Herbert Marcuse, in "One-Dimensional Man", and Jürgen Habermas, in "Technology and Science as Ideology". By reading Marcuse's work, alongside Habermas's work, we understand that the creation of technological needs is also a social means of domination since it generates inequality and alienation from self-consciousness. "

**Results:** We can see that one of the greatest factors which contribute to inequality in healthcare is the disparity when it comes to access, not only to basic healthcare services but also to priority care, fundamentally due to inequality in access to new technologies. So, whether for a surgical procedure or some household product, these innovations reach only part of society, that is, only those who can pay for them. Therefore, the concept of innovation as the invention of new needs, besides generating inequality, by not taking into account the poor, also reinforces the social and class control by the richest minority, who produces nothing.

**Conclusion:** We conclude by pointing out the need to not consider innovation as a way to invent needs, but as a way to solve real problems of people who do not have access to expensive technologies, also defending the universalization of access to both services and technologies in healthcare. It is impossible to think of the innovation concept in the capitalist mode of production in a context of technological rationality given that it does not meet the interests and needs of society. Thus, here we criticize the innovation concept within a "Technological Irrationality" context."

**Keywords:** Philosophy of Technology. Innovation in Healthcare. Technological Rationality.

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88. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Thiago Gonçalves dos Santos Martins - PG1

**e-mail:** [thiagogsmartins@yahoo.com.br](mailto:thiagogsmartins@yahoo.com.br)

**Service:** (BE) OCULAR BIOENGINEERING

**CEP Number:** 11050-7

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Purpose  
Methods  
Results  
Conclusion  
Keywords

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5. ABSTRACT (REQUIRED):

**Title:** Teaching ophthalmology to humans and machines

**Author and Co-authors:** Martins TGS, Costa ALFA, Martins EN, Helene O, Martins RV, Helene AF, Alves MR, Souza BC, Marques MA, Schor P .

**Purpose:** The ophthalmology training time in medical schools has been reduced over the last decades, while the number of doctors unable to solve the most basic ophthalmic problems has increased. The difficulty and lack of access to medical services is a very common problem especially in developing countries, with the specialist services being even scarcer. The lack of diagnosis and monitoring of eye diseases has inspired us to develop a program to assist in the monitoring of patients with uveitis and provide better health care in areas that do not have enough doctors

**Methods:** For teaching medical students, we developed a model that resembles the human eye, simulating its main features, with a simple step by step manual which enables students to actively participate in the construction of the model. For teaching machines, digital image processing techniques have been applied to images from patients' retinas with posterior uveitis in order to perform the identification and targeting of the affected areas, assisting its observation and quantification of these regions and thus helping with the follow up of patients.

**Results:** Thirty medical students were given a lecture on direct ophthalmoscopy, 15 of them trained with the model and 15 with other students. We recorded the success rate and time taken to identify a numerical sequence of 6 digits in the model with different pupil sizes. After that, all 30 students carried out a real examination on a patient with dilated pupils. We recorded the success rate and time spent by students to identify injuries. We conducted a questionnaire with all students participating in the study with the model, and 93% of the respondents said that the playful activity with the model, which increased their interest of the subject, and repeated training with the model, were important for the retention of their knowledge. For teaching machines, the growth methods regions by Fuzzy and media were effective with respect to segmentation and quantification of pixels in regions that simulated the evolution of the retinal injuries from uveitis.

**Conclusion:** The results showed that the physicians had difficulty and lacked confidence doing the exam. For this reason, a new model and teaching method of direct ophthalmoscopy should be developed based on neuroscientific concepts. This model provides more involvement of the students with the learning process since they build their own model, a practice that shows the concepts of the physics behind direct ophthalmoscopy. For the development of this artificial intelligence in machines, teaching relevant aspects of medicine for engineers was important, using a more accessible language without losing the specificity and complexity that the project required. The use of alternative teaching strategies is efficient and can contribute effectively to the formation of memories and have a great impact on education. Teaching interpretation of images with the help of engineers using the technique of machine learning and digital imaging can be a useful method to aid the monitoring of patients with uveitis, for example. Teaching aspects of ophthalmic diagnosis to humans and machines could offer a better chance of diagnosis for all people, especially for those living in remote areas, where medical care is still scarce.

**Keywords:** medical education, ophthalmology, machine learning

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89. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Isabel Moreira Borelli - R3  
**e-mail:** [isabel\\_borelli@yahoo.com.br](mailto:isabel_borelli@yahoo.com.br)

**Service:** (PL) OCULOPLASTICS SURGERY  
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Results,  
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**90cm x 120cm**

5. ABSTRACT (REQUIRED):

**Title:** Botulinum toxin efficacy as a temporary management for involuntional entropion

**Author and Co-authors:** Isabel Borelli, Patricia Miyasato, Tammy H. Osaki, Lilian Ohkawara and Midori H. Osaki

**Purpose:** A prospective study was designed to evaluate the use of botulinum neurotoxin-A as a temporary treatment in patients with involuntional entropion awaiting surgical definitive repair or in those whose clinical conditions contraindicated the surgical procedure.

**Methods:** Patients with involuntional entropion awaiting surgical definitive repair or those whose clinical conditions contraindicated the surgical procedure were included in this prospective study. This study was carried out at the Oculoplastic Service of Federal University of Sao Paulo from November 2016 to June 2017. Onabotulinum toxin A was injected subcutaneously at the preseptal orbicularis muscle, approximately 5mm below the ciliary margin (4-5 points, 2.5U/point). Patients were re-evaluated after 2 weeks and every 15 days during 4 months. Parameters evaluated included: lower eyelid position, conjunctival hyperemia, relief of ocular symptoms and onset and duration of botulinum toxin action.

**Results:** Ten eyelids from 8 patients with involuntional entropion in the lower lids were treated with botulinum toxin applications in the preseptal orbicularis muscle. All patients reported onset of the neurotoxin action, with consequent relief of ocular symptoms, 4 - 7 days after applications. Proper lower eyelid position was achieved in all patients with significant improvement in symptoms and ocular signs such as corneal abrasion and conjunctival hyperemia. The mean duration of action of the toxin was 14 weeks. None side effects were observed.

**Conclusion:** The use of botulinum toxin as a temporary management in patients with involuntional entropion led to proper lower lid positioning and resulted in relief of ocular symptoms. Its use is reserved for patients awaiting for the definitive surgical repair or in those unable to undergo a surgical procedure. Surgical treatment must remain the treatment of choice.

**Keywords:** entropion, botulinum toxin, oculoplastics

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90. FIRST (PRESENTING) AUTHOR (REQUIRED):

**Name:** Diego Lisboa Araújo - R1  
**e-mail:** [diego\\_lisboa10@hotmail.com](mailto:diego_lisboa10@hotmail.com)

**Service:** (TR) TRAUMA  
**CEP Number:** 4039

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Methods  
Results,  
Conclusion  
Keywords

Poster guidelines:  
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5. ABSTRACT (REQUIRED):

**Title:** Intralenticular Copper Foreign Body: Case Report

**Author and Co-authors:** Diego Lisboa Araújo, Luciana da Cruz Noia, Licia Maidana Matieli, Fábio Iglesias Marujo

**Purpose:** To report a case of an intralenticular copper foreign body with intact posterior lens capsule after penetrating ocular injury.

**Methods:** We report a case of intralenticular foreign body.

**Results:** A 19-year-old male patient came to our service's Emergency Room after a penetrating ocular trauma in his left eye with a copper wire fragment while working. At this time, he presented self-sealing corneal laceration, ruptured anterior lens capsule, traumatic cataract with intralenticular metallic foreign body and an apparently intact posterior lens capsule. His corrected visual acuity in the left eye was 0.5. Computed Tomography scans confirmed the presence of intraocular metallic foreign body and Ultrasound exam (performed with immersion) was able to measure it and confirmed the integrity of the posterior capsule. Corneal suture, phacoaspiration and removal of the intralenticular foreign body through a corneal incision were performed. Twenty-eight days after operation, there was no intraocular inflammation and the spectacle-corrected visual acuity was 1.0 in the left eye.

**Discussion:** According to international literature, intraocular foreign bodies are found in 18-41% of penetrating eye injuries, but only about 5 to 10% of those are located inside the lens. Management may vary from immediate surgery to expectant treatment, depending on the severity of the injury, location, size, material type, toxicity and risk of infection.

**Conclusion:** In the case presented, the presence of anterior lens capsule rupture, vision-impairing traumatic cataract and possible toxicity from copper indicated the need of immediate surgery.

**Keywords:** Intralenticular Foreign Body; Penetrating Eye Injury; Traumatic Cataract; Trauma.

## E-MAILS

Adriana Berezovsky	<a href="mailto:aberezovsky@unifesp.br">aberezovsky@unifesp.br</a>	Luis Filipe Nakayama	<a href="mailto:nakayama.luis@gmail.com">nakayama.luis@gmail.com</a>
Alexandre Xavier da Costa	<a href="mailto:dr.alexandre.x@gmail.com">dr.alexandre.x@gmail.com</a>	Luisa Salles de Moura Mendonça	<a href="mailto:luisasmendonca@gmail.com">luisasmendonca@gmail.com</a>
Aline Couto Carneiro	<a href="mailto:alinecouto.epm@gmail.com">alinecouto.epm@gmail.com</a>	Luiz Filipe Adami Lucatto	<a href="mailto:filipeadami@yahoo.com.br">filipeadami@yahoo.com.br</a>
Aline Lutz de Araujo	<a href="mailto:alinelutz.a@gmail.com">alinelutz.a@gmail.com</a>	Maria Carolina Marquezan	<a href="mailto:mcmarquezan@gmail.com">mcmarquezan@gmail.com</a>
Aline Silveira Moriyama	<a href="mailto:aline_moriyama@yahoo.com">aline_moriyama@yahoo.com</a>	Mariana Batista Gonçalves	<a href="mailto:mari-batista@bol.com.br">mari-batista@bol.com.br</a>
Ana Carla Ramos Vieira Costa	<a href="mailto:anacarlavc@hotmail.com">anacarlavc@hotmail.com</a>	Mariana Kawamuro	<a href="mailto:mkawamuro@gmail.com">mkawamuro@gmail.com</a>
Ana Luisa Hoffling de Lima Farah	<a href="mailto:coftalmo@uol.com.br">coftalmo@uol.com.br</a>	Mariana Vallim Salles	<a href="mailto:marivallim@yahoo.com.br">marivallim@yahoo.com.br</a>
Ana Luiza Bassoli Scoralick Delgado	<a href="mailto:albscoralick@gmail.com">albscoralick@gmail.com</a>	Marília Cirillo Rollo	<a href="mailto:mari_cirillo@hotmail.com">mari_cirillo@hotmail.com</a>
Ana Luiza Fontes de Azevedo Costa	<a href="mailto:luizafacosta@hotmail.com">luizafacosta@hotmail.com</a>	Marisa Lucia Romani Paraboni	<a href="mailto:marisar@uri.com.br">marisar@uri.com.br</a>
Andre Hiroshi Bando	<a href="mailto:andrebando@hotmail.com">andrebando@hotmail.com</a>	Marlon Ribeiro Silva	<a href="mailto:marlon.educ@gmail.com">marlon.educ@gmail.com</a>
Arthur G. Fernandes	<a href="mailto:arthur_abz@yahoo.com.br">arthur_abz@yahoo.com.br</a>	Matheus Porto Sticca	<a href="mailto:86matheus@gmail.com">86matheus@gmail.com</a>
Augusto Paranhos Jr.	<a href="mailto:augusto.paranhos@uol.com.br">augusto.paranhos@uol.com.br</a>	Maurício Maia	<a href="mailto:retina@femanet.com.br">retina@femanet.com.br</a>
Bernardo Teixeira Lopes	<a href="mailto:blopesmed@gmail.com">blopesmed@gmail.com</a>	Mauro Silveira de Queiroz Campos	<a href="mailto:mscampos@uol.com.br">mscampos@uol.com.br</a>
Brunella Maria Pavan Taffner	<a href="mailto:brunellapavan@hotmail.com">brunellapavan@hotmail.com</a>	Michel Eid Farah	<a href="mailto:mefarah@uol.com.br">mefarah@uol.com.br</a>
Bruno de Paula Freitas	<a href="mailto:brunodepaulafreitas@hotmail.com">brunodepaulafreitas@hotmail.com</a>	Midori Hentona Osaki	<a href="mailto:midori_osaki@yahoo.com.br">midori_osaki@yahoo.com.br</a>
Bruno de Queiroz Alves	<a href="mailto:bruno.q.a@gmail.com">bruno.q.a@gmail.com</a>	Miguel Noel Nascentes Burnier	<a href="mailto:miguel.burnier@mcgill.ca">miguel.burnier@mcgill.ca</a>
Bruno Mauricio Rodrigues Oliveira	<a href="mailto:brunomro@gmail.com">brunomro@gmail.com</a>	Murilo Ubukata Polizelli	<a href="mailto:murilopolizelli@gmail.com">murilopolizelli@gmail.com</a>
Caio Henrique Marques Texeira	<a href="mailto:caiomtex@gmail.com">caiomtex@gmail.com</a>	Natalia Mussi	<a href="mailto:natalia_mussi@yahoo.com.br">natalia_mussi@yahoo.com.br</a>
Caio Vinicius Sato Regatieri	<a href="mailto:caiore@gmail.com">caiore@gmail.com</a>	Nicolas Cesário Pereira	<a href="mailto:nicolascepe@gmail.com">nicolascepe@gmail.com</a>
Camila Mendes Costa Campelo	<a href="mailto:c.campelo89@hotmail.com">c.campelo89@hotmail.com</a>	Nikoly Tigani Fares	<a href="mailto:nik.fares@yahoo.com.br">nik.fares@yahoo.com.br</a>
Carmen Adelaide B. da Luz-Pessuti	<a href="mailto:carmenluzpessuti@gmail.com">carmenluzpessuti@gmail.com</a>	Norma Allemann	<a href="mailto:norma.allemann@pobox.com">norma.allemann@pobox.com</a>
Carolina P. B. Gracitelli	<a href="mailto:carolepm@gmail.com">carolepm@gmail.com</a>	Oswaldo Ferreira Moura Brasil	<a href="mailto:dicoretina@gmail.com">dicoretina@gmail.com</a>
Claudia Maria Osório Chaves	<a href="mailto:claudiamachaves@gmail.com">claudiamachaves@gmail.com</a>	Pablo Felipe Rodrigues	<a href="mailto:drpablo.rodrigues@gmail.com">drpablo.rodrigues@gmail.com</a>
Cristiane Siqueira da Cruz Costa	<a href="mailto:cristianeacruz@hotmail.com">cristianeacruz@hotmail.com</a>	Patricia de Freitas Dotto	<a href="mailto:patdotto@gmail.com">patdotto@gmail.com</a>
Cristiane Siqueira Peris	<a href="mailto:periscristiane@gmail.com">periscristiane@gmail.com</a>	Paula Marques Marinho	<a href="mailto:paula.marinho@gmail.com">paula.marinho@gmail.com</a>
Cristina Cardoso Coimbra Cunha	<a href="mailto:cristinacoimbracunha@gmail.com">cristinacoimbracunha@gmail.com</a>	Paulo Alberto Cervi Rosa	<a href="mailto:paulopacr@hotmail.com">paulopacr@hotmail.com</a>
Cristina Muccioli	<a href="mailto:cmuccioli@uol.com.br">cmuccioli@uol.com.br</a>	Paulo Augusto de Arruda Mello	<a href="mailto:paugusto@uol.com.br">paugusto@uol.com.br</a>
Daniela S Calucci	<a href="mailto:danielacalucci@hotmail.com">danielacalucci@hotmail.com</a>	Paulo Schor	<a href="mailto:pschor@pobox.com">pschor@pobox.com</a>
Dante Akira Kondo kuroiwa	<a href="mailto:akira.epm78@gmail.com">akira.epm78@gmail.com</a>	Rafael Ramos Caiado	<a href="mailto:rrcaiado@hotmail.com">rrcaiado@hotmail.com</a>
Dayane Issaho	<a href="mailto:dayvissaho@gmail.com">dayvissaho@gmail.com</a>	Ramon Antunes de Oliveira	<a href="mailto:ramonntt@gmail.com">ramonntt@gmail.com</a>
Deise Fialho da Costa	<a href="mailto:deisefialho@yahoo.com.br">deisefialho@yahoo.com.br</a>	Renan Mendonça Rodrigues	<a href="mailto:renanrodrigues.med@gmail.com">renanrodrigues.med@gmail.com</a>
Denise de Freitas	<a href="mailto:dfreitas@uol.com.br">dfreitas@uol.com.br</a>	Renata Cavalcanti Portela	<a href="mailto:renatacportela13@gmail.com">renatacportela13@gmail.com</a>
Diego Lisboa Araújo	<a href="mailto:diego_lisboa10@hotmail.com">diego_lisboa10@hotmail.com</a>	Renata Ruoco Loureiro	<a href="mailto:renata.ruoco@hotmail.com">renata.ruoco@hotmail.com</a>
Diego Torres Dias	<a href="mailto:diego.torres@outlook.com.br">diego.torres@outlook.com.br</a>	Renato Ambrosio	<a href="mailto:renatoambrosiojr@terra.com.br">renatoambrosiojr@terra.com.br</a>
Eduardo Alonzo Garcia	<a href="mailto:e2704.garcia@gmail.com">e2704.garcia@gmail.com</a>	Renato Magalhaes Passos	<a href="mailto:renatompasos@yahoo.com.br">renatompasos@yahoo.com.br</a>
Eduardo Amorim Novais	<a href="mailto:eduardo@novais.md">eduardo@novais.md</a>	Renato Wendell Damasceno	<a href="mailto:renatowendell@hotmail.com">renatowendell@hotmail.com</a>
Eduardo Buchelle Rodrigues	<a href="mailto:edubrodrigues@yahoo.com.br">edubrodrigues@yahoo.com.br</a>	Ricardo Salles Cauduro	<a href="mailto:cauduro.ricardo@gmail.com">cauduro.ricardo@gmail.com</a>
Elaine Regina Sato Watanabe	<a href="mailto:elaine_watanabe@yahoo.com.br">elaine_watanabe@yahoo.com.br</a>	Roberto Murad Vessani	<a href="mailto:robves@terra.com.br">robves@terra.com.br</a>
Élcio Hideo Sato	<a href="mailto:cornea@pobox.com">cornea@pobox.com</a>	Rodrigo Antonio Brant	<a href="mailto:rodrigo.brant@ophthal.com.br">rodrigo.brant@ophthal.com.br</a>
Elise V. Taniguchi	<a href="mailto:elise_taniguchi@hob.med.br">elise_taniguchi@hob.med.br</a>	Rodrigo Sidi Morizot Leite	<a href="mailto:rodrigomorizot@hotmail.com">rodrigomorizot@hotmail.com</a>
Elmar Torres Neto	<a href="mailto:elmaroft@hotmail.com">elmaroft@hotmail.com</a>	Rossen Mihaylov Hazarbassanov	<a href="mailto:hazarbassanov@gmail.com">hazarbassanov@gmail.com</a>
Ever Ernesto Caso Rodrigues	<a href="mailto:ehverc@gmail.com">ehverc@gmail.com</a>	Rubens Belfort Jr.	<a href="mailto:clinbelf@uol.com.br">clinbelf@uol.com.br</a>
Fabiana Louise Motta	<a href="mailto:fabiana.louise@gmail.com">fabiana.louise@gmail.com</a>	Solange Rios Salomão	<a href="mailto:ssalomao@unifesp.br">ssalomao@unifesp.br</a>
Fábio Barreto Morrais	<a href="mailto:barretomorrais@ig.com.br">barretomorrais@ig.com.br</a>	Tarciana de Souza Soares	<a href="mailto:starciana@yahoo.com.br">starciana@yahoo.com.br</a>
Fábio Mendonça Xavier Andrade	<a href="mailto:fabio16.xavier@gmail.com">fabio16.xavier@gmail.com</a>	Thais Sousa Mendes	<a href="mailto:thaismendesoft@gmail.com">thaismendesoft@gmail.com</a>
Fábio Ramos Carvalho	<a href="mailto:frscarvalho@gmail.com">frscarvalho@gmail.com</a>	Thiago Gonçalves dos S. Martins	<a href="mailto:thiagogsmartins@yahoo.com.br">thiagogsmartins@yahoo.com.br</a>
Felipe Marques de Carvalho Taguchi	<a href="mailto:felmct@gmail.com">felmct@gmail.com</a>	Tiago dos Santos Prata	<a href="mailto:tprata0807@gmail.com">tprata0807@gmail.com</a>
Flavio Eduardo Hirai	<a href="mailto:fhirai@unifesp.br">fhirai@unifesp.br</a>	Veronica Haysa Yamada	<a href="mailto:veronicaepm77@gmail.com">veronicaepm77@gmail.com</a>
Gabriel Costa Andrade	<a href="mailto:drgabrielandrade@gmail.com">drgabrielandrade@gmail.com</a>	Vinicius Ferreira Kniggendorf	<a href="mailto:vinicius_kdorf@yahoo.com.br">vinicius_kdorf@yahoo.com.br</a>
Guilherme Eiichi da Silva Takani	<a href="mailto:guilherme.eiichi@gmail.com">guilherme.eiichi@gmail.com</a>	Wallace Chamon	<a href="mailto:visus@pobox.com">visus@pobox.com</a>
Gustavo Souza Moura	<a href="mailto:oftalmosergipe@gmail.com">oftalmosergipe@gmail.com</a>	Walton Nosé	<a href="mailto:waltonose@hotmail.com">waltonose@hotmail.com</a>
Ibraim Viana Vieira	<a href="mailto:ibraim@gmail.com">ibraim@gmail.com</a>	Yuslay Fernandez Zamora	<a href="mailto:yuslay82@gmail.com">yuslay82@gmail.com</a>
Irineu Kenji Ogoshi Junior	<a href="mailto:ken_ogoshi@hotmail.com">ken_ogoshi@hotmail.com</a>		
Isabel Moreira Borelli	<a href="mailto:isabel_borelli@yahoo.com.br">isabel_borelli@yahoo.com.br</a>		
Ivan Maynard Tavares	<a href="mailto:im.tavares@uol.com.br">im.tavares@uol.com.br</a>		
Izabela Negrao Frota de Almeida	<a href="mailto:almeidaizabela@gmail.com">almeidaizabela@gmail.com</a>		
Jenifer Shen Ay Wu	<a href="mailto:jenifersawu@gmail.com">jenifersawu@gmail.com</a>		
José Alvaro Pereira Gomes	<a href="mailto:japgomes@uol.com.br">japgomes@uol.com.br</a>		
Júlia Gomes Fernandes Polido Cabral	<a href="mailto:juliapolido@yahoo.com.br">juliapolido@yahoo.com.br</a>		
Juliana de Filippi Sartori	<a href="mailto:juliana@vizarth.com">juliana@vizarth.com</a>		
Juliana Maria Ferraz Sallum	<a href="mailto:juliana@pobox.com">juliana@pobox.com</a>		
Juliana Moura Bastos Prazeres	<a href="mailto:juprazeres@hotmail.com">juprazeres@hotmail.com</a>		
Koiti Uchida Hamada	<a href="mailto:Ktpg77@gmail.com">Ktpg77@gmail.com</a>		
Lauro Augusto de Oliveira	<a href="mailto:laopadilha@gmail.com">laopadilha@gmail.com</a>		
Lilian Franca Machado	<a href="mailto:lilianmachado77@gmail.com">lilianmachado77@gmail.com</a>		
Luciana Lopes Rocha	<a href="mailto:luciana_lr@yahoo.com.br">luciana_lr@yahoo.com.br</a>		
Luciene Barbosa de Souza	<a href="mailto:lucieneb@uol.com.br">lucieneb@uol.com.br</a>		
Lucimeire Carvalho Nova	<a href="mailto:lucinova@gmail.com">lucinova@gmail.com</a>		