IX МЕЖДУНАРОДЕН СИМПОЗИУМ

на

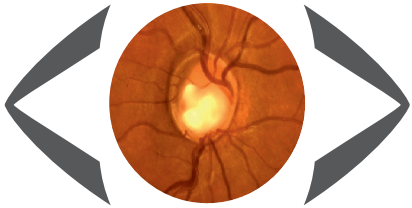
Фондация

„Национална Академия Глаукома”

ПРОГРАМА

23 април 2016 г.

Хотел „Форум“, София, България



IX МЕЖДУНАРОДЕН СИМПОЗИУМ
на
Фондация
„Национална Академия Глаукома”
Сесии: Глаукома & Ретина

Организационен комитет

Председател: Проф. Ботьо Ангелов д.м.

Членове:
Проф. Г. Сайн д.м. (САЩ)
Проф. П. Йованович д.м. (Сърбия)
Доц. К. Парса д.м. (Франция)
Доц. Ж. Джорджевич-Йосич д.м. (Сърбия)
Доц. М. Божич д.м. (Сърбия)
Проф. С. Чернинкова д.м.н.
Доц. Хр. Благоева д.м.
Д-р И. Маржанович д.м. (Сърбия)
Д-р М. Тодорова д.м. (Швейцария)
Д-р М. Гелрих д.м. (Германия)
Д-р Б. Цветкова (Франция)

П Р О Г Р А М А

От 08:00 **Регистрация**

От 09:00 **Официално откриване**

Сесия Глаукома & Ретина

Председатели: Проф. Б. Ангелов, Проф. Б. Петровски, Доц. Б. Дъбов, Доц. А. Попова, Доц. Хр. Благоева, С. Цекич, Д. Ризимич, Б. Самсонова, Хр. Видинова

09:00 - 09:10 **1. Клинико-генетични аспекти на късогледството асоциирано с глаукома в детска възраст**
А. Попова
Медицински Университет, УМБАЛ „Александровска”, София

09:10 - 09:20 **2. Клинична симптоматика при пациенти от две български ромски фамилии с Retinitis pigmentosa вследствие с. 2405_2406delAG мутация в RPGR гена**
[1]С. Чернинкова, [2,3]К. Каменарова, [2,3]В. Митев, [1]И. Търнев, [2,3]Р. Кънева
[1]Катедра по Неврология, Медицински Университет, София
[2]Център по Молекулярна медицина, Медицински Университет, София
[3]Катедра по Медицинска химия и биохимия, Медицински Университет, София

09:20 - 09:30 **3. Диагностични методи при дисфункция на Мейбомиевите жлези**
Д. Димова, Б. Ангелов
Медицински Институт, МВР, Очно отделение, София

09:30 - 09:40 **4. Автофлуоресценцията при диагностика на сухата и влажна форма на МДСВ - новости в диагностиката**
Пр. Гугучкова, Хр. Видинова
СОБАЛ „Зрение”, София

09:40 - 09:50 **5. Паренхим на макулата - кавитации и вакуоли**
Б. Дъбов
УМБАЛ „Св. Анна”, София

09:50 - 10:00 **6. Нашият опит с Eylea**
Хр. Благоева, Д. Геров, В. Баков, О.Талеб
МБАЛ „Света София“, София

10:00 - 10:10 **7. Хитиназа-3-подобен-протеин-1 и стандартни биомаркери при системно възпаление при пациенти с диабетна ретинопатия**
[1]С. Цекич, [2]И. Йованович, [1]П. Йованович, [3]Т. Цветкович, [4]М. Песич, [1]М. Раденкович
[1]Медицински факултет Ниш, Клиника по очни болести, Клиничен Център Ниш, Сърбия
[2]Медицински факултет Ниш, Отделение по Анатомия, Сърбия
[3]Медицински факултет Ниш, Отделение по Биохимия и Център по Биохимични изследвания към Клиничен Център Ниш, Сърбия
[4]Медицински факултет Ниш, Клиника по метаболитни нарушения и диабет, Клиничен Център Ниш, Сърбия

10:10 - 10:20 **8. Кога да сменим анти-VEGF и какво да очакваме при тази смяна в Сърбия**
[1,2]Д. Рисимич
[1]Белградски Университет, Медицински факултет, Белград, Сърбия
[2]Клиника по очни болести, Клиничен Център Сърбия, Белград, Сърбия

10:20 - 10:30 **Дискусия**

10:30 - 11:00 **Кафе пауза**

Сръбско-Български Глаукомен Симпозиум

Председатели: Проф. Б. Ангелов, Проф. П. Йованович, Доц. Ж. Джорджевич-Йосич, Доц. М. Божич, И. Маржанович, М. Божинович, М. Раденкович, Н. Бйелович

11:00 - 11:10 **9. Вътреочно налягане и централна дебелина на роговицата сред здраво население студенти**
М. Божич
Белградски Университет, Медицински факултет, Университетска Очна Болница, Отделение по Глаукома, Белград, Сърбия

11:10 - 11:20 **10. Промени в амплитудата на очния пулс измерен с Динамичен Контурен Тонометър след понижаване на завишеното вътреочно налягане при пациенти с глаукома**
И. Маржанович
Университетска Очна Клиника, Клиничен Център Сърбия, Медицински Университет-Белград, Сърбия

11:20 - 11:30 **11. Предиктори на глаукомния процес**
Хр. Благоева, В. Баков
МБАЛ „Света София”, София

11:30 - 11:40 **12. Възможности за изследване на слъзния филм с корнеален топограф ANTARES (CSO) при първична откритоъгълна глаукома - клинични случаи**
Д. Димова, Б. Ангелов, А. Наралиева, М. Баташки
Медицински Институт, МВР, Очно отделение, София

11:40 - 11:50 **13. Дебелина на неврофибрилерния слой на ретината при диагноза глаукома с нормално налягане**
М. Божинович, П. Йованович, Ж. Джорджевич-Йосич, М. Раденкович, М. Петрович, М. Живкович
Офталмологична Клиника, Клиничен Център Ниш, Сърбия

11:50 - 12:00 **14. Разпространение на вторична глаукома при пациенти след витреоретинална хирургия**
М. Раденкович, П. Йованович, Ж. Джорджевич-Йосич, Б. Томашевич, Б. Джинич, С. Новак, А. Веселинович, М. Златанович, М. Тренкич-Божинович, М. Живкович, С. Цекич
Клиничен Център Ниш, Клиника по очни болести, Сърбия

12:00 - 12:10 **15. Лазерно лечение при тесноъгълна псевдоексфолиативна глаукома**
[1]Н. Бйелович, [2]И. Сенчанич
[1]Център за зрение „Офталмика“, Белград, Сърбия

[2]Болничен център „Звездара“, Клиника по очни болести „Проф. Д-р Иван Станкович“, Белград, Сърбия

12:10 - 12:20 **16. Комбинирана факоемулсификация и филтрационна хирургия**
Ж. Джорджевич-Йосич
Медицински факултет - Ниш, Клиника по очни болести, Клиничен Център Ниш, Сърбия

12:20 - 12:30 **17. Супрахороидален visco дренаж при глаукома**
Пр. Гугучкова, Б. Самсонова, М. Неме
Българо-Американски очен център „Пролайт”, София, Очна Клиника „Зрение“

12:30 - 12:40 **18. Модифицирана трабекулектомия с нов биодеградабилен имплант (Ologen™) при откритоъгълна глаукома**
Б. Ангелов
Медицински Институт, МВР, Очно отделение, София

12:40 - 13:00 **Дискусия**

13:00 - 14:00 **ОБЯД**

14:00 - 14:20 **Фирмена презентация „Alcon”**

Сесия Глаукома & Ретина & Вариа

Председатели: Проф. Б. Ангелов, Проф. Г. Сайн, Проф. Пр. Гугучкова, Доц. К. Парса, Проф. С. Чернинкова, М. Тодорова, М. Гелрих

14:20 - 14:40 **19. Биомикроскопът: минало - настояще - бъдеще**
М. Гелрих
Университет и Офталмологична Практика, Келингюсен, Германия

14:40 - 14:50 **20. Шпалт лампата в страната на чудесата - видео**
[1]М. Гелрих, [2]К. Кандциа
[1]Университет и Офталмологична Практика, Келингюсен, Германия
[2]Отделение по Орт- и плеоптика, Университетска Очна Клиника, Кил, Германия

14:50 - 15:00 **21. Интраоперативна апликация на локален Митомицин Ц при глаукома и операция за птеригиум**
Г. Сайн
Канзаски Университет и Университет в Мисури, Канзас Сити, Мисури, САЩ
Клиничен Изследовател в Очна и Ушна Клиника, Масачузец/Харвард

15:00 - 15:10 **22. Безопастност и полезно действие на увреден сулкус подкрепен с имплантация на еднокомпонентна вътреочна леща и липса на UGH синдром**
Г. Сайн
Канзаски Университет и Университетът в Мисури, Канзас Сити, САЩ

15:10 - 15:20 **23. Възможности за изследване на слъзния филм с корнеален топограф ANTARES (CSO) преди и след катарактна хирургия**
Д. Димова, Б. Ангелов, А. Наралиева, М. Баташки, М. Михайлова
Медицински Институт, МВР, Очно отделение, София

15:20 - 15:40	**24. Как централната дебелина на роговицата показва чувствителност при глаукома?** ***К. Парса*** *Кенз-Ван Национална Очна Болница, Париж, Франция*
15:40 - 15:50	**25. Дефицит на кръвния поток при пациенти с глаукома** ***Хр. Благоева, О. Талеб*** *МБАЛ „Света София”, София*
15:50 - 16:20	**26. Глаукома и ретинални промени при „Стърдж-Вебер”синдром** ***К. Парса*** *Кенз-Ван Национална Очна Болница, Париж, Франция*
16:20 - 16:40	**27. Оксигенация при глаукома** ***М. Тодорова*** *Базелски Университет, Отделение по Офталмология, Базел, Швейцария*
16:40 - 16:50	**28. Предизвикателства във витреалната хирургия** ***Б. Дъбов*** *УМБАЛ „Св. Анна”, София*
16:50 - 17:00	**Дискусия и официално закриване**
17:00	**КОКТЕЙЛ**

IX INTERNATIONAL SYMPOSIUM

of

„National Academy Glaucoma"

Foundation

PROGRAM

23 April 2016

Hotel „Forum", Sofia, Bulgaria

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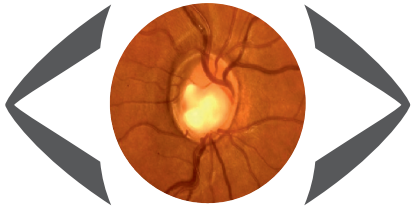

IX INTERNATIONAL SYMPOSIUM
of
„National Academy Glaucoma"
Foundation
Sessions: Glaucoma & Retina

Organization committee

Chairman: Prof. Botio Anguelov PhD

Members: Prof. G. Singh PhD (USA)
Prof. P. Jovanović PhD (Serbia)
Assoc. Prof. C. Parsa PhD (France)
Assoc. Prof. J. Djordjevic-Jocic PhD (Serbia)
Assoc. Prof. M. Bozic PhD (Serbia)
Prof. S. Cherninkova PhD, DSci
Assoc. Prof. H. Blagoeva PhD
Dr. I. Marjanović PhD (Serbia)
Dr. M. Todorova PhD (Switzerland)
Dr. M. Gellrich PhD (Germany)
Dr. B. Tzvetkova (France)

PROGRAM

From 08:00 **Registration**

From 09:00 **Official opening**

Glaucoma & Retina Session

Chairmen: Prof. B. Anguelov, Prof. B. Petrovski, Assoc. Prof. B. Dabov, Assoc. Prof. A. Popova, Assoc. Prof. Hr. Blagoeva, S. Cekić, D. Risimić, B. Samsonova, Hr. Vidinova

09:00 - 09:10 **1. Clinical and genetic aspects of myopia associated with glaucoma in childhood**
A. Popova
Medical University, "Alexandrovska" Hospital, Sofia

09:10 - 09:20 **2. Clinical findings in members of two Bulgarian roma families with retinitis pigmentosa caused by c.2405_2406delAG mutation in RPGR**
[1]S. Cherninkova, [2,3]K. Kamenarova, [2,3]V. Mitev, [1]I. Tournev, [2,3]R. Kaneva
[1]Department of Neurology, University Hospital "Alexandrovska", Medical University Sofia
[2]Molecular Medicine Centre, Medical University Sofia
[3]Department of Medical Chemistry and Biochemistry, Medical Faculty, Medical University Sofia

09:20 - 09:30 **3. Diagnostic methods in dysfunction of the Meibomian glands**
D. Dimova, B. Anguelov
Medical Institute, Ministry of Interior, Eye Clinic, Sofia

09:30 - 09:40 **4. Fundus autofluorescene in the diagnosis of dry and wet AMD - new diagnostic possibilities**
Pr. Guguchkova, Hr. Vidinova
Eye Hospital "Zrenie", Sofia

09:40 - 09:50 **5. Macular parenchyma - cavitations and vacuoles**
B. Dabov
"St. Anna" Hospital, Sofia

09:50 - 10:00 **6. Our experience with Eylea**
Hr. Blagoeva, D. Gerov, V. Bakov, O. Taleb
"St. Sofia" Hospital, Sofia

10:00 - 10:10 **7. Chitinase-3-like-protein-1 and standard biomarkers of systemic Inflammation in diabetic retinopathy patients**
[1]S. Cekić, [2]I. Jovanović, [1]P. Jovanović, [3]T. Cvetković, [4]M. Pešić, [1]M. Radenković
[1]Faculty of Medicine, University of Niš, Clinic for Eye Diseases, Clinical Centre Niš, Serbia
[2]Faculty of Medicine, University of Niš, Department for Anatomy, Serbia
[3]Faculty of Medicine, University of Niš, Department for Biochemistry and Center for Biochemical Research of Clinical Centre in Niš, Serbia
[4]Faculty of Medicine, University of Niš, Clinic for Metabolic Disorders and Diabetes, Clinical Centre Niš, Serbia

10:10 - 10:20 **8. When to change the anti VEGF and what to expect with the switch in Serbia**
[1,2]D. Risimić
[1]University of Belgrade, Faculty of Medicine, Belgrade, Serbia
[2]Clinic for Eye Diseases, Clinical Centre of Serbia, Belgrade, Serbia

10:20 - 10:30 **Discussion**

10:30 - 11:00 **Coffee break**

Serbian-Bulgarian Glaucoma Symposium

Chairmen: Prof. B. Anguelov, Prof. P. Jovanović, Assoc. Prof. J. Djordjevic-Jocic, Assoc. Prof. M. Bozic, I. Marjanović, M. Božinović, M. Radenković, N. Bjelović

11:00 - 11:10 **9. Intraocular pressure and central corneal thickness in healthy student population**
M. Bozic
University of Belgrade, Medical Faculty, University Eye Hospital, Glaucoma Department, Belgrade, Serbia

11:10 - 11:20 **10. Changes in ocular pulse amplitude measured with dynamic contour tonometer after decrease of the elevated intraocular pressure in glaucoma patients**
I. Marjanović
University Eye Clinic, Clinical Center of Serbia, Belgrade University School of Medicine, Belgrade, Serbia

11:20 - 11:30 **11. Glaucoma predictors**
Hr. Blagoeva, V. Bakov
"St. Sofia" Hospital, Sofia

11:30 - 11:40 **12. Study of break-up time with corneal topographer ANTARES (CSO) in primary open-angle glaucoma - clinical cases**
D. Dimova, B. Anguelov, A. Naralieva, M. Batashki
Medical Institute, Ministry of Interior, Eye Clinic, Sofia

11:40 - 11:50 **13. Retinal nerve fiber layer thickness in the diagnosis of normal tension glaucoma**
M. Božinović, P. Jovanović, J. Djordjevic-Jocic, M. Radenković, M. Petrović, M. Živković
Ophthalmology Clinic, Clinical Center Niš, Serbia

11:50 - 12:00 **14. The incidence of secondary glaucoma in patients after vitreoretinal surgery**
M. Radenković, P. Jovanović, J. Djordjević-Jocić, B. Tomašević, B. Džunić, S. Novak, A. Veselinović, M. Zlatanović, M. Trenkić-Božinović, M. Živković, S. Cekić
Clinical Center Niš, Clinic for Eye Diseases, Niš, Serbia

12:00 - 12:10 **15. Laser treatment for narrow angle pseudoexfoliative glaucoma**
[1]N. Bjelović, [2]I. Senćanić
[1]Centre for Sight "Oftalmika", Belgrade, Serbia
[2]Hospital Center "Zvezdara", Clinic for Eye Diseases "Prof. Dr Ivan Stankovic", Belgrade, Serbia

12:10 - 12:20 **16. Combined phacoemulsification and filtration surgery**
J. Djordjevic-Jocic
Faculty of Medicine University of Niš, Clinic for Eye Diseases, Clinical Centre Niš, Serbia

12:20 - 12:30 **17. Suprachoroidal visco drainage at glaucoma**
Pr. Guguchkova, B. Samsonova, M. Neme
Bulgarian-American Eye Center "Prolight", Eye Clinic "Zrenie"

12:30 - 12:40 **18. New biodegradable implant (Ologen™) with modified trabeculectomy in open-angle glaucoma surgery**
B. Anguelov
Medical Institute, Ministry of Interior, Eye Clinic, Sofia

12:40 - 13:00 **Discussion**

13:00 - 14:00 **LUNCH**

14:00 - 14:20 **Company presentation of "Alcon"**

Glaucoma & Retina & Varia Session

Chairmen: Prof. B. Anguelov, Prof. G. Singh, Prof. Pr. Guguchkova, Assoc. Prof. C. Parsa, Prof. S. Cherninkova, M. Todorova, M. Gellrich

14:20 - 14:40 **19. The slit lamp: past - presence - future**
M. Gellrich
University and Ophthalmological Practice, Kellinghusen, Germany

14:40 - 14:50 **20. Slit lamp in wonderland - video**
[1]M. Gellrich, [2]C. Kandzia
[1]University and Ophthalmological Practice, Kellinghusen, Germany
[2]Departrment of Orth- and pleoptics, University Eye Clinic, Kiel, Germany

14:50 - 15:00 **21. Intra operative application of topical Mitomycin C in glaucoma and pterygium surgery**
G. Singh
University of Kansas and University of Missouri, Kansas City, Missouri, USA
Ex-Clinical Fellow at Massachusetts Eye and Ear Infirmary/Harvard Medical School

15:00 - 15:10 **22. Safety and efficacy of inadvertent sulcus supported one piece intra ocular lens implantation and absence of UGH syndrome**
G. Singh
University of Kansas and University of Missouri, Kansas City, USA

15:10 - 15:20 **23. Study of break-up time with corneal topographer ANTARES (CSO) before and after cataract surgery**
B. Anguelov, D. Dimova, A. Naralieva, M. Batashki, M. Mihailova
Medical Institute, Ministry of Interior, Eye Clinic, Sofia

15:20 - 15:40 **24. How does central corneal thickness indicate a susceptibility for glaucoma?**
C. Parsa
Quinze-Vingts National Eye Hospital, Paris, France

15:40 - 15:50	**25. Blood flow deficiency in patients with glaucoma** ***Hr. Blagoeva, O. Taleb*** *"St. Sofia" Hospital, Sofia*
15:50 - 16:20	**26. Glaucoma and retinal changes in the "Sturge-Weber" syndrome** ***C. Parsa*** *Quinze-Vingts National Eye Hospital, Paris, France*
16:20 - 16:40	**27. Oxygenation in glaucoma** ***M. Todorova*** *University of Basel, Department of Ophthalmology, Basel, Switzerland*
16:40 - 16:50	**28. Challenges in vitreoretinal surgery** ***B. Dabov*** *"St. Anna" Hospital, Sofia*
16:50 - 17:00	**Discussion and Official closing**
17:00	**COCTAIL**

1. Clinical and genetic aspects of myopia associated with glaucoma in childhood

A. Popova
Medical University, "Alexandrovska" Hospital, Sofia

Association myopia and glaucoma has long discussed problem in ophthalmic literature, but mostly in adults. As myopia, as well as glaucoma, they are mostly isolated ocular diseases irrespective of the age of the individual, but with a different genesis in children and in adults. Myopia up than 6 diopters shperical equivalent was proven clinical symptom of monogenic determined pathology. High degrees of myopia are a proven risk factor for glaucoma in adults. In the phenotype of majority of glaucoma in childhood myopia attended by varying degrees. The article discusses the clinical and genetic aspects of myopia combined with glaucoma in children.

2. Clinical findings in members of two Bulgarian roma families with retinitis pigmentosa caused by c.2405_2406delAG mutation in RPGR

[1]S. Cherninkova, [2,3]K. Kamenarova, [2,3]V. Mitev, [1]I. Tournev, [2,3]R. Kaneva
[1]Department of Neurology, University Hospital "Alexandrovska", Medical University Sofia
[2]Molecular Medicine Centre, Medical University Sofia
[3]Department of Medical Chemistry and Biochemistry, Medical Faculty, Medical University Sofia

We evaluated one affected male with Retinitis pigmentosa and his affected mother from a four-generation Bulgarian Roma pedigree from Eleshnitsa, Blagoevgrad, Western Bulgaria. Affected male patient showed the classic signs of Retinitis pigmentosa including pallor of the optic discs, attenuation of vessels, and bone-spicule pigmentations. Direct sequencing of RPGR gene in the clinically affected male patient identified a known c.2405_2406delAG mutation in ORF15. The same sequence variant was also present in heterozygous state in his mother showing signs of Retinitis pigmentosa (pigmentary clumps, attenuated vessels, optic disc pallor) with later onset. The same sequence variant has been previously reported in other Bulgarian Roma pedigree from Peshtera, South Bulgaria. In this family the female carriers of one mutated allele are asymptomatic or minimally affected indicating that a single mutation which causes X-linked disease can be associated with very different levels of disease severity in female carriers. Our results highlight the hypothesis that an additional gene (or genes), linked to RPGR, modulate disease expression in affected carriers.

3. Diagnostic methods in dysfunction of the Meibomian glands

D. Dimova, B. Anguelov
Medical Institute, Ministry of Interior, Eye Clinic, Sofia

There are different diagnostic methods for examinations in dysfunction of Meibomian glands. Meibography is an examination in which the health of Meibomian glands is evaluated. Such examination can be performed by corneal topographer ANTARES (CSO). Basically, the glands health in patients with Meibomian glands dysfunctions tends to decrease as its area becomes smaller inside the eye-lid. A suffering (dry) eye in these patients presents a surface of "eroded" Meibomian glands. The aim is to calculate the ratio between the area covered with glands and the total eye-lid area in patients with different diseases including glaucoma. A low ratio in those patients determines a high probability of suffering dry eye. Proper diagnosis and appropriate therapy with artificial tears in those patients will improve the quality of ocular surface, their comfort and will drastically reduce their subjective complaints.

4. Fundus autofluorescene in the diagnosis of dry and wet AMD - new diagnostic possibilities

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Fundus autofluorescence is a new non invasive method of visualization of the eye fundus, in which the fluorescent abilities of lipofuscein at the level of RPE has been used.
Purpose: The aim of our study is to point out the abilities of fundus autofluorescence (FAF) in evaluating the changes and progression of AMD.

Material and methods: We enrolled 24 patients with dry form of AMD and 18 patients with exudative form of AMD among which 8 were with RPE detachment. All of the subjects were examined with RTVue OCT (Optovue). The autofluorescence was done with Cannon CX1 fundus camera. All patients were followed at a period of 6 months.
Results: In patients with dry form of AMD different types of FAF - focal, linear, diffuse has been seen. With the help of OCT and FAF we found out that of greatest rate of progression were the patients with diffuse type. In patients with wet form of AMD the FAF made it possible to evaluate the size of the lesion and vitality of the RPE. The autofluorescence was different in different size of the RPE detachment.
Conclusion: FAF pictures together with OCT enables us to estimate the changes and progression of AMD. In dry forms of AMD diffuse autofluorescence was a sign of future progression of the atrophic lesion. Different types of autofluorescence in RPE detachments enable us to judge of the dauer of the detachment, the integrity of the RPE and presence of fibrovascular tissue. Although both methods enable us to follow the changes in the RPE only FAF has the ability to predict the progression of the disease.

5. Macular parenchyma - cavitations and vacuoles

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Cysts and cavitations at the macula are a typical pathological finding.
Macular cysts are classified as follows:
1. Cysts with disturbance of the blood-retinal barrier.
2. Cysts with disturbance of the RPE barrier.
3. Tractional cysts.
4. Myopic foveoschisis.
5. Combined: cysts with disturbance of the blood-retinal barrier and vitreomacular traction.

The pathogenesis, OCT picture and possible treatment options are discussed.

6. Our experience with Eylea

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Purpose: To evaluate and analyze the results of the intravitreal application of Eylea on the eyes of patients with pathology of different type and degree in the macular area.
Materials and methods: The research is done in "St. Sofia" Hospital Sofia, it includes 15 patients (18 eyes), diagnosed with macular degeneration and diabetic macular edema. Each patient underwent routine diagnostic examinations, OCT, fluorescein angiography.
Results and discussion: For 16 eyes (89%), the diagnosis showed positive results - reduction to full removal of the activity signs for patients with macular degeneration or reduction of the macular edema. The therapy had no effect on two of the patients (11%). After another anti-VEGF medicament was used in their therapy, a positive effect was observed for one of these patients and the other one still did not have a positive effect.
Conclusion: The data analysis showed a more rapid effect and longer duration of Eylea in comparison with the other anti-VEGF medicaments for patients with macular degeneration and diabetic macular edema.

7. Chitinase-3-like-protein-1 and standard biomarkers of systemic Inflammation in diabetic retinopathy patients

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The aim of our study was to quantify basic inflammatory biomarkers and chitinase-3-like-protein-1 (YKL-40) in blood samples of the patients with mild, and very severe diabetic retinopathy.
Prospective case control study was carried on: 30 controls; 30 with mild diabetic retinopathy, and 30 patients with very severe diabetic retinopathy. Diabetic retinopathy was confirmed by photofundus, fluorescein angiography and classified by ETDRS classification. ESR, WBC, plasma fibrinogen level, CRP, glycemia, HbA1C, total cholesterol, and its fractions, triglycerides, and YKL-40 were measured. Additionally, API and BMI were calculated. Statistical package NCSS PASS 2007 was used.
Values of non-specific markers in groups of patients with diabetic retinopathy were significantly higher than in controls ($p<0.05$). Values of total cholesterol, its fractions, and trigycerides in groups of patients with diabetic retinopathy were significantly higher than in controls ($p<0.05$), and the values of HDL-C were significantly higher in controls and group with mild retinopathy that in very severe one ($p<0.05$). Values of BMI and API were significantly higher in the groups with diabetic retinopathy ($p<0.05$). Values of YKL-40 were significantly higher in the groups with diabetic retinopathy and between two different groups ($p<0.05$). YKL-40 is biomarkers of diabetic retinopathy and correlate with its severity.

8. When to change the anti-VEGF and what to expect with the switch in Serbia

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Introduction: Intravitreal injection of anti-vascular endothelial growth factor (VEGF) agents has revolutionized the management of age-related macular degeneration (AMD), diabetic macular edema (DME), macular edema in retinal vein occlusions (RVO), and other neovascular and macular edema accompanied retinal diseases. In patients with recalcitrant AMD despite prior anti-VEGF treatments, intravitreal aflibercept can result in anatomic improvement in the short term, reduction of SRF and reduction in PED dimensions, while preserving visual acuity. In Serbia, all patients are worried about cost of treatment and number of injections they need to get during the treatment.
Purpose: To evaluate the effects of aflibercept in patients with recalcitrant wet AMD despite prior anti-VEGF treatments and to find the best clinical approach and regimen for patients with neovascular and macular edema accompanied retinal diseases.
Material and Methods: We are presenting a several cases of patients with wet AMD and other retinal diseases in which we switch the anti-VEGF drug. We were following the effects of this drugs on visual acuity by Snellen chart and effects on macula anatomy using optical coherent tomography (OCT). The most of patients in our study had wet AMD or retinal vein occlusion. One patient had associated antiphospholipid syndrome and macular edema due to RVO. Our patients received an intravitreal injection of 1.25 mg (0.1 mL) of bevacizumab (Avastin®) as a first drug treatment option, and we switch the therapy to aflibercept (Eylea®) or triamcinolon acetonid when therapy with bevacizumab seem to be not effective enough. We followed the potential ocular and systemic side effects in all our patients.
Results: We changed a therapy from one to another anti-VEGF agent or corticosteroid drug when the therapy with bevacizumab seem to be not effective enough. Our patients were evaluated every month and were injected every 4 to 8 weeks according to a pro re nata regimen (PRN). The most of our patients had visual and anatomical improvement.
Conclusions: Anti-VEGF therapy becomes the standard of care for the treatment of wet AMD and many other retinal diseases. Switching anti-VEGF drugs shows positive results in patients with refractory or recurrent wet AMD and macular edema. Effective clinical approach in our patients may be not only switching therapy but combination of therapy. The individual treatment approach and PRN regimen were the most commonly used treatments regimen in our patients.

9. Intraocular pressure and central corneal thickness in healthy student population

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Introduction: Elevated intraocular pressure is a significant risk factor for the conversion of ocular hypertension into a primary open-angle glaucoma and indispensable parameter in the diagnosis of ocular hypertension and normotensive glaucoma. Central corneal thickness is an important indicator in the diagnosis of diseases of the cornea, such as keratoconus and Fuchs's dystrophy. There are few published studies to date which had the objective of determining the average value of intraocular pressure and central corneal thickness in the healthy population aged 20 - 30 years.
Objective: The objective of this study was to determine the distribution of the values of intraocular pressure and central corneal thickness in healthy student population.
Materials and Methods: In this cross-sectional study we carried out intraocular pressure and central corneal thickness measurement on a sample of healthy population, age 22 - 37 years (100 subjects, 200 eyes). Measurement of intraocular pressure was carried out by the method of Goldmann's tonometry applanation, and central corneal thickness was determined by ultrasound pachymetry. Analysis of numerical values was done by methods of descriptive statistics.
Results: The average intraocular pressure was 15.11±2.35 mmHg, and central corneal thickness 563.65±27.74 micrometers. There was no statistically significant difference in the average value of intraocular pressure (t test, $p > 0.05$), and the average value of the central corneal thickness (t test, $p > 0.05$) between the sexes.
Conclusion: Established average value of intraocular pressure and central corneal thickness was similar to those established in other cross-sectional studies of this type. Average values of intraocular pressure and central corneal thickness were slightly higher in female subjects, but not statistically significant.

10. Changes in ocular pulse amplitude measured with dynamic contour tonometer after decrease of the elevated intraocular pressure in glaucoma patients

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Purpose: To analyze changes in Ocular Pulse Amplitude (OPA) after decreasing of the elevated intraocular pressure (IOP) in glaucoma patients.
Methods: In this prospective, interventional study, we analyzed 77 eyes, of 60 glaucoma patients, all initially with elevated, then with decreased IOP. All underwent complete ophthalmologic examination, Goldmann Applanation and Dynamic Contour Tonometry, Central Corneal Thickness, Visual Field examination and HRT II.
Results: IOP significantly decrease, measured both with GAT: 30 mmHg (28 to 32,89) vs 15 mmHg (13 to 16); $p < 0,0001$; and DCT: 27,7 mmHg (26,67 to 29,81) vs 15,8 mmHg (12,4 to 18,25); $p < 0,0001$. OPA also significantly decreased after IOP reduction in glaucoma patients: 4 (3,66 to 4,34) vs 2,5 (2,3 to 2,94); $p < 0,0001$. Additional multiple regression analysis revealed that both GAT ($R2=0,02$; $r= 0,21$; std.err.= 0,03; $p=0,07$; and $R2= 0,12$; $r= 0,32$; std.err.= 0,05; $p= 0,82$) and DCT ($R2=0,02$; $r=0,11$; std.err.= 0,04; $p=0,32$; vs $R2= 0,12$; $r= 0,38$; std.err.= 0,07; $p=0,06$) before and after IOP decrease were not significantly correlated with OPA; as well as CCT before ($R2= 0,02$; $r= -0,04$; std.err.= 0,003; $p=0,79$) and after ($R2= 0,12$; $r= 0,07$, std.err.= 0,004; $p= 0,33$) IOP reduction. Correlation between OPA and C/D ratio also was not significant both before (rho= -0,142; $p= 0,29$) and after (rho= -0,16; $p= 0,25$) IOP reduction.
Conclusion: Significant IOP decrease in glaucoma patients implicate strong OPA reduction, in our study correlation between OPA and any of the observed parameters was not significant.

11. Glaucoma predictors

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Aim: The aim of the study is do determine diagnostic parameters, which to be evaluated as glaucoma predictors proving the development or presence of asymptomatic glaucomatous process.
Materials and methods: We examined a group of patients with risk factors for primary open-angle glaucoma development. The observed period was between 2008 - 2016 y. The analyzed data were based on the routine diagnostic methods: visual acuity, intraocular pressure measurement, pachymetry, slit lamp examination, fundoscopy and more specific methods as: computer perimetry (DICON), OCT (Optovue RTVue), Color Doppler Utrasonography (Fukuda Denshi). Clinical data from the cardiologic and neurologic exams are also evaluated. The patients with eye diseases were excluded from the study.
Results and discussion: The analyzed data give us the opportunity to determine some early glaucoma predictors which have high confidence.

12. Study of break-up time with corneal topographer ANTARES (CSO) in primary open-angle glaucoma - clinical cases

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Aim: This study aims to determine the break-up time of the tear film quality and ocular surface in patients with primary open-angle glaucoma of different conservative therapy.
Material and Methods: It presents opportunities for an objective examination of the tear films with corneal topographer ANTARES (CSO) in patients with primary open-angle glaucoma of different conservative therapy. We examined 47 patients (88 eyes), including 11 men and 36 women, age from 39 to 87, which are in different anti-glaucoma therapy. Clinical cases presented by changes in the break-up time of the tear film in such patients.
Results: From studied 88 eyes, 55 are reduced in time for the tearing of the tear film. Prolonged anti-glaucoma conservative therapy can lead to a further deterioration in the characteristics of the tear film.
Conclusion: The study of break-up time of the tear film in patients with primary open-angle glaucoma of conservative therapy with corneal topographer is essential for the precise eye diagnosis, definition of the therapeutic behaviour, observation of patients, improving quality of life and cooperation with patient.

13. Retinal nerve fiber layer thickness in the diagnosis of normal tension glaucoma

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Introduction: Glaucoma is a progressive optic neuropathy with characteristic morphological changes of the optic nerve head and the accompanying changes in the visual field. The structural and functional changes in patients with primary open angle glaucoma (POAG) with elevated intraocular pressure (HTG) and without elevated intraocular pressure (NTG) are almost identical in some studies, as well as being completely different in others.
Aim: The aim of this study was to determine the differences in the RNFL thinning pattern in patients with POAG with and without elevated intraocular pressure that can be used in the diagnosis of normal tension glaucoma.
Methods and Patients: This prospective study included 38 eyes (38 patients) suffering from POAG with normal IOP (NTG) and 50 eyes (50 patients) suffering from POAG with elevated IOP (HTG), paired by the degree of structural glaucomatous changes of the optic nerve head and by age. The following demographic, stereometric and functional parameters were measured and studied: the patients' age, gender, best corrected visual acuity (BCVA), intraocular pressure (IOP), the size of the optic nerve head excavation (C/D), the value of mean deviation (MD) and corrected pattern standard deviation (CPSD), disc area, rim area, rim volume, cup/disc (C/D) area ratio, the global

average thickness of peripapillary retinal nerve fibers (RNFL Avg) and average RNFL thickness in four quadrants and all sectors measured by OCT.
Results: The average age of the examined population was 65.49 ± 9.36 years (Min 44 years, Max 83 years). There was no statistically significant difference by age and by gender between the two study groups (p = 0.795 and p = 0.807). BCVA was higher in patients with NTG but there was no statistically significant difference compared to HTG patients (p = 0.160). IOP was statistically significantly higher in patients with HTG compared to NTG patients (17.40 ± 2.77 vs. 14.95 ± 3.01, p = 0.009). The C/D (p = 0.258), MD (p = 0.477), CPSD (p = 0.943), disk area (p = 0.515), rim area (p = 0.294), rim volume (p = 0.118), C/D area R (p = 0.103), RNFL Avg (p = 0.632), RNFL Sup (p = 0.283), RNFL Inf (p = 0.488), and sectoral (12 clock-hour; 30°) RNFL thickness values were not statistically significantly different between the groups.
Conclusion: OCT measurements of RNFL thickness help us in diagnosis and provide clinically significant information in the monitoring of glaucomatous changes. There are no differences in RNFL thinning pattern per sectors and quadrants between NTG and HTG, as assessed by OCT.

14. The incidence of secondary glaucoma in patients after vitreoretinal surgery

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Introduction: Vitreoretinal surgery is not infrequently associated with transient or prolonged (permanent) increase in IOP as a complication. The increase can occur immediately (in the first hours), or in early or late postoperative phase. Secondary glaucoma could be a complication of external procedure in solving uncomplicated retinal detachment (scleral buckling, Custodis; Schepens, 1950) as well as internal procedure (pars plana vitrectomy in the treatment of complicated retinal detachment, Proliferative Diabetic Retinopathy, endophthalmitis, hemophtalmus, macular hole) and after intravitreal application of steroids. Tamponading agents (expanding gases and silicone oils) cause a secondary glaucoma due to mechanism of pupillary block (aphakic, pseudophakic, phakic - in case of lens subluxation), migration of the emulsified oil or nonemulsified oil in Anterior Chamber (CA), infiltration and inflammation of trabecular meshwork, "overfill" - of silicone oil or synechial closure. Unlike Vitrectomy via pars plana where dominated mechanism of secondary glaucoma is open angle mechanism, after buckling procedure secondary glaucoma occurs due to the pathomechanism of closed angle.
Objective: A retrospective analysis of the incidence of secondary glaucoma following vitreoretinal surgery (vitrectomy via pars plana/scleral buckling) at the Clinic for eye diseases in Nis in the three-year period (2012 - 2014).
Methods: Descriptive statistical analysis of 274 operated eyes (without evacuation of silicon oil) performed by five vitreal surgeons, 263 VPP and 11 combined procedures (VPP and buckling). Ocular Hypertension was defined as an increase of IOP > 21 mmHg, and hypotonia < 6 mmHg.
Results: In 274 operated eyes: 201 (73.3%) retinal detachment, 46 (16.8%) hemophtalmos, 18 (6.6%) lens luxation, 8 (2.9%) penetrating injuries and 1 (0.4%) endophthalmitis was done. Among 263 VPP: 212 (80.6%) was done without retinotomy, 41 (15.6%) with retinotomy to 180 degree, and 10 (3.8%) with retinotomy to 360 degrees. Of the total number of operated eyes 84 (30.7%) complications with increased IOP was observed and 190 (69.3%) eyes without secondary glaucoma. Early increase of IOP to 30 mmHg (in first 48 hours) was measured in 34 (40%) patients. In 20 patients (24%) evacuation of silicon oil was performed, 30 patients (36%) regulated IOP using monotherapy and 34 (40%) by combined therapy. Among 20 evacuation of silicone oil in 3 (1.1%) patients trabeculectomy was done. Gender distribution between respondents: 164 (59.9%) male and 110 (40.1%) female.
Conclusion: The pathomechanism of secondary glaucoma occurence after vitreoretinal surgery is multifactorial and requires correct diagnosis in order adequate treating. Scleral buckling results in transient increase of IOP which is usually regulated by antiglaucoma topical therapy. Glaucoma due to tamponading silicon oil is refractory form, requires maximal medical and/or surgical therapy: evacuation of silicon oil, trabeculectomy, drainage implants or cyclodestructive procedure in order to control disease.

15. Laser treatment for narrow angle pseudoexfoliative glaucoma

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Introduction: Pseudoexfoliation syndrome (PXS) is the most common cause of secondary open angle glaucoma. At the time of PXS diagnosis, 20% of newly diagnosed patients have elevated intraocular pressure (IOP). About 50% of these patients develop open angle or narrow angle glaucoma. In case of a narrow angle glaucoma, patients may benefit from laser iridotomy or early cataract extraction.
Aim of the study: Evaluation for laser treatment in narrow angle pseudoexfoliativ (PXF) glaucoma.
Material and Methods: Cross-sectional cohort study included 25 patients (29 eyes) with narrow angle PXF glaucoma, treated in Center for sight "Oftalmika", from March 2009 to February 2015. All patients undervent laser iridotomy (LI) and subsequent interventions: argon laser peripheral iridoplasty (ALPI) and/or argon laser trabeculoplasty (ALT). The mean age was 68.8 ± 16,8 years. Most patients were females (79.2%). Follow up after laser treatment was 6 months.
Results: The average IOP before laser treatment was 27.6 ± 8.5 mmHg. The average number of antiglaucoma medications before treatment was 2.4 ± 0.8. Laser iridotomy as single procedure was performed in 11 eyes, ALPI and ALT in 1 eye, LI and ALT in 12 eyes and combination of LI, ALPI and ALT in 5 eyes. The average period from laser iridotomy to subsequent procedures was 2.2 ±1.9 months. At month 6 follow up visit, the average IOP reduction was 18.4 mmHg or 33,3% ($p < 0.05$). Number of antiglaucoma medications was reduced by 1.9 ($p < 0.05$) and there were no need for systemic antiglaucoma therapy. The average time to reach normal IOP was 2.6 ± 1.6 months. In one eye glaucoma surgery was mandatory and in one eye cataract extraction to achieve normal IOP.
Conclusion: Laser treatments are effective in the treatment for narrow angle PXF glaucoma. They enable reduction of antiglaucoma medication and allow good intraocular pressure control.

16. Combined phacoemulsification and filtration surgery

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The lowering of IOP remains the primary treatment goal in the management of all forms of glaucoma whether to prevent or deal it's development in individuals at risk or to stabilize neuropathy and the field loss in patients with established disease. Most patients with ocular hypertension or glaucoma will develop cataract at some point, so the timing and sequencing of cataract surgery over the course of patient's glaucoma management is common challenge for the practicing ophthalmologist. Therefore, patient's with manifest glaucoma and patients who undergone some of filtering surgery with falled bleb and have visual symptomatic cataract is game of chess, with the best practitioners. The purpose of this presentation is which the role of phaco alone and phaco performed in conjunction with some of the newer, minimally invasive procedures (phaco-plus) in this patients.

17. Suprachoroidal visco drainage at glaucoma

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Suprachoroidal cypass implantation causes formation of a subscleral lake, different in size at any patient. Anterior segment OCT allows to detect anatomic features of the lake, predicting good compensation of the IOP, for example: presence of posterior fluid, circumferential fluid and tenting. Visco-expansion in the supraciliary place can cause maintenance of broad enough suprachoroidal lake with good functional capacity. The quality and quantity of visco are of primary importance for the success of Visco-expansion. The future clinical trials are going to prove the safety and efficacy of the method at refractory glaucoma and the possibility for application of medical treatment using Visco-expansion.

18. New biodegradable implant (Ologen™) with modified trabeculectomy in open-angle glaucoma surgery

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Dissatisfaction with some results in glaucoma surgery leads to the development of new operational methods, creation of new implants, as well as performing a number of modified operations. In 15 eyes with open-angle glaucoma perform modified trabeculoectomy with a new biodegradable implant (Ologen™, Aeon Astron). The specific steps in the modified trabeculectomy are few. Creating a broad triangular scleral flap. The biodegradable implant Ologen (diameter 12.0 mm and height 1.0 mm) is cut only in the centre. Tip of the scleral flap is passed through the cut central part of the implant, half of the implant is placed under and other half over the respective shaped flap. The scleral flap is fixed to the adjacent sclera with a suture thread 10/0 non-absorbable without suturing the implant. The other steps of the operation follow as in a standard trabeculectomy. In the postoperative follow-up period (between 20 months and 8 months at different eyes) was achieved lowering of intraocular pressure dropping and the need for anti-glaucoma therapy. In order to take account more fully the advantages and results of the operation, it is desirable to follow a longer period of time of more surgical patients.

19. The slit lamp: past - presence - future

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1. Past - measurements by photographic ophthalmometry
Allvar Gullstrand developed the slit lamp as a device to measure the posterior curvature of the cornea. A Nernst bulb fulfilled the criteria of a strong homogenous light source. It was projected in a slit to obtain a sharply delineated real image which could be used for catoptric measurements. Gullstrand himself called his concept "photographic ophthalmometry" which is totally different from the present use of the slit lamp.
2. Presence - examination and biomicroscopy
Gullstrand soon discovered that the transparent tissues of the eye could be examined at good contrast with focal illumination from his Nernst slit lamp. In 1911 together with the Zeiss company which also offered a suitable biomicroscope for observation the slit lamp was demonstrated to the ophthalmological world on the 37th assembly of the German ophthalmological society in Heidelberg. In a short time the slit lamp became the most important instrument for biomicroscopy in ophthalmological practice.
3. Future - documentation by videography
In our times video recordings with the slit lamp and digital image processing are major developments which could form the basis for a new and third concept called videography: Examples are given that a video slit lamp can be used for documentation of squint and to create panretinal fundus images. It might be used for imaging in glaucoma, for pupillography and also to determine the power of intraocular lenses. Such a broad application at affordable expense is particularly interesting for ophthalmologists without specialization and without access to high end diagnostic tools or a photo department.

20. Slit lamp in wonderland - video

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Reflexes that accompany every examination at the slit lamp are usually regarded as annoying and therefore do not receive much attention.
In the first part of this video the four Purkinje images which are reflections on the eye's optical surfaces are introduced in the phakic eye.

In the pseudophakic eye, however, the refracting surfaces of the IOL have excellent optical properties and therefore form Purkinje images 3 and 4 of high quality. Especially the third Purkinje image from the anterior IOL surface, which is usually hardly visible in the phakic eye can be detected deep in the vitreous, enlarged through the eye's own optics like a magnifying glass. It contains valuable information about the anterior curvature and thus about the power of the IOL. If the same IOL-type is implanted in a patient, often a difference between right and left of 0.5 D in its power can be detected by the difference in size of the respective 3rd Purkinje image.
The film is the fifth part of a didactic cycle on slit lamp videography - a follow concept for clinical biomicroscopy. Videography describes advanced applications of our most essential instrument in daily practice. "Slit lamp in wonderland" was awarded the video prize of the DOG conference in 2015. This film encourages any slit lamp user - beginners and those who consider themselves experienced - to "understand the language of reflections" of the eye in order to understand the basics of refractional changes during clinical examination with the slit lamp.

21. Intra operative application of topical Mitomycin C in glaucoma and pterygium surgery

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Introduction: High failure rates of glaucoma filtration surgery and equally high recurrence rates of pterygium have baffled ophthalmic surgeons for decades. In 1986, while a Clinical Fellow at Massachusetts Eye and Ear Infirmary/Harvard Medical School, I introduced the role of topical Mitomycin C after pterygium excision to the Western World. A clinical study to evaluate the efficacy of Mitomycin C topical eye drops after pterygium excision started in Boston was continued in UCLA. After achieving a non-toxic and efficacious dosing of Mitomycin C, it gained popularity in USA and Europe. Influenced by these results, we initiated animal studies of adjunct topical Mitomycin C application during trabeculectomy procedure. Suddenly, adjunct application of topical Mitomycin C with prolonged survival of filtration procedures gained popularity in management of resistant glaucomatous eyes.
Methods: Application of Weck-Cell sponge soaked in topical Mitomycin C in the area of trabeculectomy before and/or after raising partial thickness sclera flap has been tried in primary trabeculectomy and in eyes with failed filtration blebs. The concentrations of 0.01 - 0.02% (0.1 - 0.2 mg/ml) have been tried for one minute, one and a half minute, and two minutes in different studies. I have used 0.02% Mitomycin C for one minute before raising sclera flap, and for half a minute under the flap before scleral punching in eyes with severe glaucoma and failed filtration blebs. Similarly, initially, topical Mitomycin C was used in the form of 0.02% (0.2 mg/ml) eye drops four times a day for 10 days after pterygium excision of primary and recurrent pterygia. Later on, it was modified to apply locally in the bare sclera area after pterygium excision as a sponge soaked in 0.02% Mitomycin C for one minute. Topical Mitomycin C application was compared with conjunctival autografting after pterygium excision.
Results: Intra-operative application of Mitomycin C in the area of trabeculectomy in open angle glaucoma eyes, resistant to anti-glaucoma treatment or with previous failed filtration procedures, had more than 30 - 50% reduction of intra-ocular pressure post-operatively after one to two year follow-up. Some eyes included in successful group required reduced number of topical anti-glaucoma medication after adjunct use of Mitomycin C in trabeculectomy procedure. Pterygium recurrence rates have dropped from 50 - 70 % after primary bare scleral pterygium excision to 5 - 10% after topical application of Mitomycin C in the form of eye drops or intra-operative sponge application. The results have been comparable to those of conjunctival autografting after pterygium excision. Complications associated with Mitomycin C were all in eyes only with prolonged and/or high concentrations use of medicine.
Conclusions: After 30 years of introduction to the Western World, Mitomycin C has established its place as an alternative, safe and effective treatment modality in management of eyes with severe glaucoma and pterygium. During an AAO annual meeting in Chicago, while discussing my presentation, a senior reviewer made a comment that there was "no role of Mitomycin C in

Ophthalmology". This modality has been successfully and effectively used since 1950 s - 60 s in the East. Numerous studies have determined valuable role of topical Mitomycin C in management of eyes with severe glaucoma and recurrent pterygia, as well as in certain conjunctival tumours.

22. Safety and efficacy of inadvertent sulcus supported one piece intra ocular lens implantation and absence of UGH syndrome

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Introduction: Three piece Intra Ocular Lens Implant (IOL) is the preferred lens over one piece IOL for Sulcus supported lens subsequent to unplanned accidental posterior capsule rupture during cataract surgery. Unavailability of Three Piece IOL as a back-up IOL in Ambulatory Surgery Center setting, dictated by the cost-effectiveness factor, compels surgeon to either place a one piece IOL in sulcus or an anterior chamber IOL. Both these options have their own potential risks and complications. In a prospective study over five years we evaluated the safety and efficacy of One Piece IOL as sulcus supported lens, especially looking for Uveitis-Glaucoma-Hyphema (UGH) syndrome.
Methods: Accidental tears in posterior capsule, with or without need for anterior vitrectomy, determined to be large enough to safely support an in-the-bag IOL compelled the surgeon to place the available One Piece IOL into the sulcus. In presence of an intact anterior capsular rim, viscoelastic material was inserted between the iris and anterior capsular rim to slide in a foldable one piece IOL into the posterior chamber as a sulcus supported IOL. Post-operative slit lamp examinations were performed on days 1, 7, 21 and 42, and there after every six months, specifically looking for any signs of uveitis, raised intra-ocular pressure, hyphema (UGH syndrome), decentration of IOL, and iris pigment defects.
Results: In a prospective study over five years, we have implanted seventeen one piece sulcus supported IOLs out of total of 1087 (1.56%) cataract surgeries performed under topical anesthesia by one surgeon. One of 17 eyes developed 1+ (scale of 0 - 4) pigment cells lasting for two weeks, one eye had 2 mmHg increase in intraocular pressure when compared with preoperative numbers and lasted less than three months. None of the 17 eyes had any signs of hyphema, chronic uveitis, IOL subluxation, or iris transillumination on postoperative examinations ranging from 7 to 52 months. None of the 17 eyes had any significant ocular symptoms related with cataract surgery and IOL implantation. None of these eyes had any signs of UGH syndrome.
Conclusions: The results of eyes operated with one-piece sulcus supported IOLs support the hypothesis that such IOLs could be safely and effectively implanted in unplanned accidental rupture of posterior capsule, especially when three-piece IOLs are not available. In the past, one piece sulcus supported IOLs have been implicated with UGH syndrome. The absence of UGH syndrome in our small study suggests that meticulous positioning of one piece sulcus supported IOLs could prevent dreaded complication of UGH syndrome. Advances in better polishing of IOL surface, better quality of material used over the years along with careful insertion of this IOL in the sulcus have reduced the complication rates to be negligible and therefore the inventory of three piece IOLs as back up lenses is not necessary.

23. Study of break-up time with corneal topographer ANTARES (CSO) before and after cataract surgery

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Aim: This study aims to determine the break-up time of the tear film in patients before and after cataract surgery.
Material and Methods: In the study are included 73 patients (107 eyes) before cataract surgery, 33 men and 40 women at age from 46 to 87 years. In the study are included also 15 patients, 16 (eyes) after cataract surgery which are tracked in 7, 15 and 30 days after surgery. We have performed pre- and postoperatively objective study of the tear film with corneal topographer ANTARES (CSO). We present clinical cases before and after surgery for cataract.

Results: From 107 eyes, 75 of studied eyes are with reduced break up time of the tear film before surgery. We found symptoms of discomfort, visual disturbance, instability of the tear film and ocular surface damage. In the study are included also 15 patients after cataract surgery which are tracked in 7, 15 and 30 days after surgery. All of those patients are with reduced break-up time in different degree and all of them received artificial tears. The degree of disturbance depends on type of surgery, duration of surgery, type of postoperative drops and etc.
Conclusion: It is necessary to research the tear film in patients before and after cataract surgery. Many of these patients are with damaged tear film who are studied with corneal topographer. Compliance between the doctor and the patient and proper conservative therapy (if it is needed) with artificial tears will improve and increase the comfort and quality of life.

24. How does central corneal thickness indicate a susceptibility for glaucoma?

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Aims: To evaluate a possible relationship between central corneal thickness (CCT) and optic disc area in patients with primary open-angle glaucoma (POAG).
Methods: Patients with POAG underwent eye examination, optic disc imaging with the Heidelberg Retina Tomograph II (HRT II) and ultra sound corneal pachymetry. Exclusion criteria were prior ocular surgery and low-quality HRT II images (HRT standard deviation (SD)>.50). Pearson's correlation coefficients were calculated to assess the associations between CCT and optic disc area.
Results: 212 eyes of 137 patients with POAG were examined. In all, 66 (48%) subjects were women, 104 (76%) were Caucasian, 26 (19%) African-American and 7 (5%) other races. 72 eyes remained after excluding those with prior intraocular surgery and low-quality HRT II images. In a univariate analysis of this group, CCT was inversely correlated with optic disc surface area (Pearson's correlation coefficient r = 20.284, p = 0.036, n = 72). Mean (SD) disc area was 2 (0.53) mm^2 (n = 160). Caucasians had significantly smaller discs ($p<0.001$) than other races (Caucasian 1.9 (0.47) mm^2 (n = 119), African-Americans 2.4 (0.54) mm^2 (n = 31), other races 2.3 (0.45) mm^2 (n = 10).
Conclusion: CCT is inversely correlated to optic disc area. Although thicker corneas have been recognized to cause slight overestimation of true intraocular pressure (IOP), they may also indicate the presence of a substantially smaller, and thus more robust, optic nerve head. People with thinner corneas which slightly underestimate the true IOP may also have larger and more deformable optic discs.

25. Blood flow deficiency in patients with glaucoma

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Elevated intraocular pressure is currently the only major risk factor being treated in the management of glaucoma. However, despite lowering of IOP, some patients continue to experience progressive visual field loss leading to irreversible loss of vision and ultimately blindness. In the last years, alterations in ocular blood flow and abnormal vascular autoregulation are emerging as key components of the disease process of primary glaucoma. Clinical trials have demonstrated deficiencies of blood flow in patients with glaucoma in the retinal, choroidal, and retrobulbar circulations. Ischemia has been shown to regionally correspond with areas of visual field loss. Abnormalities in ocular perfusion pressure and blood pressure as well as nocturnal hypotension, aging of the vasculature, optic disc haemorrhage, migraine and diabetes have also been associated with the disease.
The purpose of this presentation is to focus on these vascular abnormalities that have been implicated as risk factors for glaucoma progression and as such to try and advocate an additional route in the pathogenesis of glaucomatous optic neuropathy.

26. Glaucoma and retinal changes in the "Sturge-Weber" syndrome

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According to a new, unifying view of the pathogenesis of Sturge-Weber syndrome and related syndromes, signs and symptoms all arise from localized primary venous dysplasia, with effects of venous hypertension transmitted to nearby areas via persisting communicating venous passageways and compensatory collateral venous channels. Port-wine stains result from a vascular disorder rather than a neural disorder. Symptoms, including retinal detachment and glaucoma depend upon the extent and location of the venous dysplasia. This hypothesis is supported by data with original observations and Doppler ultrasonographic studies of orbital venous flow in 20 patients with the Sturge-Weber syndrome. This new understanding of underlying pathophysiology also elucidates the noted bimodal presentation of glaucoma during childhood. Therapies aimed at obliterating port-winestains to minimize the cosmetic blemish will reduce collateral venous blood-flow passageways. In some instances, this reduction may worsen blood stasis within the orbit and brain and potentially exacerbate the glaucoma as well as choroidal thickening and chance for retinal detachment.

27. Oxygenation in glaucoma

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Purpose: There is increasing evidence that alterations in retino-choroidal blood flow play a crucial role in the pathogenesis of glaucoma. Studying the oxygen saturation of retinal vessels on patients affected by glaucoma, suggest the oxygen metabolism to be altered. In the present study we evaluated the relationship between vascular dysregulation and retinal oxygen consumption in glaucoma patients.
Methods: Retinal vascular responses to flicker light of 31 eyes of 18 randomly selected glaucoma patients (10 ♂& 8♀) were measured by means of Retinal Vessel Analyser (RVA: IMEDOS Systems UG). Patients were grouped according to their median vascular responsiveness. In each group, retinal vessel oxygen saturation of the major arterioles (A-SO2) and venules (V-SO2) was measured. The corresponding A-V SO2 difference was calculated. Glaucomatous damage was assessed using Optical Coherence Tomography (Carl Zeiss Meditec, Dublin, CA, USA) and static automated perimetry (Octopus; Haag-Streit International). In addition, we calculated the mean retinal oxygen consumption per micron of nerve fibre layer thickness, O2-C [%/µm].
Results: O2-C, in elderly patients (n=16 eyes) was significantly higher than in younger patients (n=15 eyes) (p=0.004). Age did not show effect on V-SO2 (p=0.697), or on A-V SO2 (p=0.674), but on A-SO2: being severely reduced in elderly patients (p=0.007). Grouped in respect to venular vascular responsiveness (≤/> 2.90%), subjects with reduced responses had significantly higher O2-C (p=0.027). Age did not differ between vascular responsiveness groups (p=0.141).
Conclusion: Reduced venular vascular responsiveness was associated with increased O2-C. Thus, axons of ganglion cells in glaucomatous eyes with vascular dysregulation seem to consume more O2 [%/µm] than eyes with normal flicker reaction. The letter presumably leads to increase in oxidative stress and thus, to progression of glaucomatous damage.

28. Challenges in vitreoretinal surgery

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Two difficult operative options are presented:
a) Vitreous suregery upon broad subretinal proliferations in posttraumatic retinal detachment;
b) Surgery of retinal detachment in case of keratoprosthesis in an ultimate eye.
The pathogenesis and the surgical technique are described. Video is presented.