



CUTTING-EDGE SCIENCE 2022

international scientific and practical conference



2022 SHAWNEE, USA

ISBN 978-1-64945-234-4
DOI:10.5281/zenodo.5091677

International scientific and practical conference

CUTTING EDGE-SCIENCE

2022 Shawnee, USA

Conference Proceedings

Primedia E-launch

Shawnee, USA

PRIMEDIA E-LAUNCH

International scientific and practical conference

CUTTING EDGE-SCIENCE

2022 Shawnee, USA

Conference Proceedings

Science editor: G. Kolne

Copyright © 2022

By Primedia E-launch LLC

All rights reserved.

Available at virtualconferences.press

Published Primedia E-launch LLC.

Shawnee, USA

ISBN 978-1-64945-234-4

DOI:10.5281/zenodo.5091677

Primedia E-launch LLC, 5518 Flint St, Shawnee, 66203, USA

<https://orcid.org/0000-0001-9154-6049>

instituteforscientificresearch@gmail.com

ISBN 978-1-64945-234-4

DOI:10.5281/zenodo.5091677

N.M. Hasanguliyeva, N.V. Shakunova, S.A. Agayeva, Yu.N. Litvishkov: Hydrothermal microwave synthesis of nanosized co-mn - oxide catalyts of liquid-phase oxidation of aromatic hydrocarbons.....	44
Yolchuyeva E.A., F.F. Rashidova: Analysis of pesticides in the composition of grape varieties bayanshire and savignon cabernet.....	48
Ismailova B.A.: Selection of catalyts for esterification reactions and theirsurface survey.....	51
Niftaliyeva K.: Typological characteristics of the modern media system.....	55
Rustamova S.: Influence of students' learning skills and intellectual indicators on the quality of higher education.....	57
Nadirova Sh. M.: The educational significance of the Koroglu epic.....	61
İbrahimov R.: History of the emergence and formation of mobile journalism in the media system.....	65
Abasova N.: Role of environmental pollution in the emergence and development of liver disease.....	67
Abasova N.: Fatal bleeding from long-term use of anticoagulants after coronary stenting in patients with peptic ulcer and coagulopathy.....	70
Gasimova S.: A new look at the bolshevik movement in azerbaijan in the early xx century: an examination of the problem in the soviet and contemporary period.....	73
V.Kh. Gasimova, L.A. Huseynova: Estimation of influence of the “infanvir” preparation on the several infectious diseases of the vegetable plants.....	76
Fatullayeva Perizad Amrulla, Mejidov Ajdar Akber: Synthesis and structure of cu (II) and vo(II) complexes with salicylic acid hydrazide and 3,5-ditretbutyl salicylic aldehyde hydrazone.....	78
Guliyeva E. Arif Aga, Jalaladdinov Fadail Fatullah, Asgerova Tarana Yashar kızı, Tamilla Haqverdiyeva Memmed: Synthesis of Cu (II), Ni (II), Co (II) complexes with hydrazide of maleic acid.....	83
Khudanov B.O., Gulyamov D.T., Abdurahimova F.A.: The comparative efficiency of using Quantitative light induced fluorescence technology in predicting tooth caries.....	86
Karimova M.H., Inomjonova M.I., Askarova N.A., Saginova J.T. Modern aspects of keratorefractive interventions.....	87
Suyunov Nurmuhammad Kudrat The main idea of the novel M. Semenova "Valkyrie"	

Modern aspects of keratorefractive interventions

D.m.s. prof: Karimova M.H., Inomjonova M.I., Askarova N.A., Saginova J.T.
Tashkent Medical Academy Uzbekistan, Tashkent

Karimova Muyassar Khamidovna - Professor, Doctor of Medical Sciences,
Department of Ophthalmology, Tashkent Medical Academy (Tashkent, Uzbekistan),

Inomzhonova Malika Ilkhomzhonovna - first-year master's student of the Department
of Ophthalmology of the Tashkent Medical Academy, moki44khon@icloud.com

Askarova Namuna Alisherovna - second-year master's student of the Department of
Ophthalmology of the Tashkent Medical Academy, namunaasqarova4@gmail.com

Saginova Jadira Turdimuratovna - first-year master's student of the Department of
Ophthalmology of the Tashkent Medical Academy, jankasaginova@gmail.com

Abstract.

This article discusses the issue of modern approaches to the surgical treatment of myopia. The analysis of refraction disorders, namely myopia of the visual organ and the operational effectiveness of the main types of kerato-refractive interventions used in the treatment of such patients was carried out. The effectiveness of this work is reported by data in the literature, which confirms the prospect of research on the effectiveness of surgical interventions in complex treatment in patients with myopia.

It is necessary to look for new effective methods and types of surgical treatment of myopia and deeper research related to this area.

Keywords: refraction, myopia, correction, laser keratomileusis.

Introduction.

Myopia remains one of the many common eye diseases in our time and a common cause of impaired vision. WHO claims that the number of people with

ISBN 978-1-64945-234-4

DOI:10.5281/zenodo.5091677

myopia in developed countries ranges from 10 to 90%. In Russia >10% of the population are myopes, in the USA and Europe >25%, and in Asian countries >80% [3, p. 113]. The World Health Organization confirms low vision with uncorrected refraction as one of the main tasks for eliminating avoidable blindness [4, p. 280].

Uncorrected myopia leads to various difficulties in performing visual work and reduces its adaptation, worsening the quality of life [5, p. 49]. This pathology can lead to retinal detachment and myopic maculopathy, which are accompanied by disability [6, p. 186]. In all age groups of the population, vision disability with myopia is 18, 0% and occupies the third dominant place [5, p. 49]. Preservation and strengthening of population health, continuation of active labor functioning and longevity is one of the basic final goals of the International Comprehensive Program "Health of the Nation - 2020" [4, p. 280].

The regulation of myopia and the elimination of complications associated with this type of refractive error continues to be one of the most pressing problems in ophthalmology.

1965 was recommended by E.S. Avetisov's three-component theory of myopia, which today is the basic theory of pathogenesis. The theory connects the occurrence of myopia with the following factors: 1 - genetics, 2 - weakening of accommodation, 3 - weakening of scleral stability and flexibility. It is for this reason that if the PZO of the organ of vision is lengthened during its growth, then at a close distance, weakened accommodation and many times more than the usual visual load extracts the tension of accommodation [1, p. 944].

In their studies, S. A. Read et al. (2015) found a statistically true relationship by comparing the daily mean illumination and axial growth of the organ of vision. His theory states that the dependence, which was noted during the 18-month control, explains the greater illumination by the slow growth of the PZO of the eye ($p = 0.047$). Was studied the role of vitamin D produced and activated when exposed to the outdoors under the influence of ultraviolet light [12, p. 66].

A multidisciplinary study in the United States (CLEERE) contradicts the theory of declining work at close range. Their study with 5000 patients showed that the duration of exposure to ultraviolet rays is more influential on the likelihood of the onset and progression of myopia [20, p. 64].

To date, information in the modern bibliography indicates a significant decline in the accommodative response and high esophoria at close range in patients with progressive myopia compared with patients with emmetropia [19, p. 498].

As S. N. Fedorov (2000) attests, "Until now there is no single scientifically substantiated concept of the development of myopia, including progressive," which substantiates the basic theory of the pathogenesis of myopia: In the modern world, they use developing refractive surgery, which combines a number of activities affecting the refraction of the eye by acting on the cornea or lens, which are the main components of refraction [15, p. 28]. To eliminate corneal aberrations caused by wearing contact lenses, it is advisable to stop wearing soft lenses 2 weeks before keratotomy and hard lenses for 1 week for each year [8, p. 738].

Corneal microsurgery is mainly aimed at flattening it:

a) radial keratotomy - is a radial incision along the periphery of the cornea.

The procedure is effective for mild myopia;

b) photorefractive keratectomy - performed using an excimer laser. PRK is effective in that it minimally damages the surrounding tissue. Carries out dosed removal of root tissue at a given depth. When correcting myopia, the central location of the tissue of the anterior surface of the cornea becomes flat; 10 μm ablation corrects 1 diopter. With the help of PRK, myopia up to 6 diopters is corrected.

In the modern world, PRK manipulation is performed less often and mainly for patients who cannot perform laser keratomileusis. If you give examples, then with a very thin cornea; complications - delayed epithelialization, corneal hazy and halo (halo), decreased night vision.

c) standard laser keratomileusis is a common refractive procedure used today. It has greater capabilities than PRK and can correct myopia - up to 12 diopters,

depending on the thickness of the cornea. LASIK differs from PRK in that during the operation the epithelial and Bowman's membranes are not removed.

This suggests that, in practice, it is possible to achieve pain relief by means of a previously formed corneal valve by mechanical keratoma and photoablation of deeper tissues of the stroma. Such a procedure is provided with prolonged rehabilitation, painless elimination of corneal opacity and correction of ametropia of varying degrees;

d) laser keratomileusis with aberrometry and femtosecond support (Femto-LASIK). The basic disadvantage of LASIK is the deterioration of twilight vision. This is due to the fact that the operation is performed in the central part of the cornea. In the dark, when the pupil expands to its maximum diameter, the field of view increases, the light rays are refracted not only in the operated central part, but also in the non-operated peripheral part of the cornea. Unlike a standard LASIK, Femto-LASIK forms a valve of any diameter and expands the surgical site to the required diameters of the patient's pupils.

The advantages of Femto-LASIK can be considered: speed of conduction, minimal tissue trauma, increased adaptation of the corneal valve. These qualities are the main criteria for reducing eye response and accelerating tissue healing after surgery. With the help of a femtosecond laser with predetermined parameters, suitable for the selected specific eye, the flap on the superficial cornea is detached accurately, quickly and painlessly. The rays exfoliate the cell layers with the help of gas bubbles, which creates a painless manipulation. By acting for several seconds, it precisely changes the curvature of the cornea to the desired parameters [8, p. 738].

In refractive surgery, the results of surgical interventions are analyzed and evaluated according to generally accepted standards. In comparison with other types of kerato-refractive surgery with LASIK, prior to the procedure, the topographic and biomechanical parameters of the cornea are usually distinguished and analyzed in order to precisely flatten the indicated surface [9, p. 209]. The scientist I. Pallikaris, who occupies a leading position in modern keratorefractive surgery, noted in 1989

that it is during the LASIK operation that myopia is characterized by a shorter recovery period, rapid regression and a favorable refractive effect [8, p. 741].

According to M. Qazi, C. Roberts (2005), this is due to the difference in the structure of the ablation profile, i.e. in the number, location and depth of transition points near the formed ablation zone [12, p. 68]. In myopia, two transition points are significant: the optical zone and its transition points to the peripheral zone. They argue that during ablation, the location and depth of the transition zones can affect the biomechanical response of the corneal stroma and the results of the operation [16, p. 8].

Thus, to date, different types of CRC have improved the efficiency of myopia correction, but have not completely solved the problem. Regression of the effect, which depends both on the initial thickness of the cornea and on the consistency of coagulates after a time after surgery [17, p. 48]. With all the advantages of any type of CRC, consisting in low invasiveness and intactness of the central optical zone, regression of the refractive effect is the main problem of this technology [5, p. 50]

Literature:

1. Аветисов С. Э. Офтальмология: национальное руководство под ред. С. Э. Аветисова, Е. А. Егорова, Л. К. Мошетовой, В. В. Нероева, Х. П. Тахчиди. - М.: ГЭОТАР-Медиа, 2011. 944 с.
2. Ежова Е.А. Москва: Клинико-морфофункциональная система оценки эффективности и безопасности применения ортокератологической коррекции у пациентов миопией. Диссертация на соискание ученой степени кандидата медицинских наук, 2018.
3. Кондратюк Е.А., Мелихова И.А., Балалин С.В. Волгоград: Влияние ортокератологических контактных линз на морфофункциональные свойства роговицы у детей и у подростков с миопией по данным конфокальной микроскопии. Вестник ВолГМУ Приложение «Актуальные вопросы современной офтальмологии – 2013», 2013. 113-117 с.

4. Ежова Е. А., Мелихова И. А., Балалин С.В. Санкт-Петербург: Анализ результатов конфокальной микроскопии роговицы пациентов с миопией при использовании ортокератологических линз. Сборник материалов научной конференции офтальмологов «Невские горизонты-2014», - 2014. 280-282 с.
5. Ассоциация врачей – офтальмологов, Москва: Диагностика и лечения близорукости у детей. Российская педиатрическая офтальмология, «Федеральные клинические рекомендации - №2». – 2014. 49-63 с.
6. Егоров Е.А., Эскина Э.Н., Гветадзе А.А., Белогурова А.В., Степанова М.А. Москва: Морфометрические особенности глазного яблока у пациентов с близорукостью и их влияние на зрительные функции. Русский медицинский журнал «Клиническая офтальмология - №4». – 2015 186-190 с.
7. Л.А. Каргина, Москва: «Аккомодация». Межрегиональная ассоциация офтальмологов России Экспертный совет по аккомодации и рефракции (ЭСАР) «Руководство для врачей» – 2012.
8. Клименко К.В., Думлер И.С., Санкт – Петербург: Новые технологии в мониторинге миопии. Бюллетень медицинских Интернет-конференций (ISSN 2224-6150) №5 – 2017. Том 7. 735 с.
9. Иомдина Е.Н., Бауэр С.М., Котляр К.Е. Биомеханика глаза: Теоретические аспекты и клинические приложения. – М.: Реал Тайм, 2015. – 208 с. Iomdina EN, Bauer SM, Kotlyar KE (2015).
10. Е.Н. Иомдина, Е.П. Тарутта. Современные направления фундаментальных исследований патогенеза прогрессирующей миопии. Вестник Российской академии медицинских наук. – 2014. – №3-4, Т. 69. 44-49 с.
11. С.А. Мохначева, В.С. Рыкун, Н.В. Грищенко, Челябинская область. Современные представления о проблеме прогрессирования миопии. Вестник Совета молодых ученых и специалистов Челябинской области. – 2014. – №1-2. 60- 65 с.

ISBN 978-1-64945-234-4

DOI:10.5281/zenodo.5091677

12. Жукова О.В., Егорова А.В. Исследование аккомодации, возрастные нормы. Компьютерная аккомодография. В кн.: Катаргиной Л.А., ред. Аккомодация. Руководство для врачей. М.: Апрель; 2012: 66-6.

13. Пантелеева О.А., Тарутта Е.П., Маркосян Г.А. Наследственные факторы в развитии миопии. Российский офтальмологический журнал. 2009. 48-50 с.

14. Удодов Е.Н. Близорукость: [электронный ресурс] // Офтальмологический портал: ваш компас в мире зрения. Минск, 2009-2016. URL: <http://www.vseoglazah.ru/eye-diseases/myopia/>. (Дата обращения: 31.10.2016).

15. Тарутта Е. П., Вержанская Т. Ю. Возможные механизмы тормозящего влияния ортокератологических линз на прогрессирование миопии. Российский офтальмологический журнал. 2008. 26-30 с.

16. Проскурина О.В. Методы коррекции и лечения нарушений аккомодации. Оптическая коррекция. В кн.: Катаргиной Л.А., ред. Аккомодация. Руководство для врачей. М.: Апрель; 2012. 84-93 с.

17. Mutti D.O., Hayes J.R., Mitchell G.L., Jones L.A., Moeschberger M.L., Cotter S.A., Kleinstein R.N., Manny R.E., Twelker J.D., Zadnik K. Refractive error, axial length, and relative peripheral refractive error before and after the onset of myopia. The CLEERE Study Group. Invest. Ophthalmol. Vis. Sci. 2007; 48: 2510–19.

18. Pan CW, Ramamurthy D, Saw SM (2012). Worldwide prevalence and risk factors for myopia. Ophthalmic Physio. Opt., 32, 3-16

19. Kempen JH, Mitchell P, Lee KE (2004). The prevalence of refractive errors among adults in the United States, Western Europe, and Australia. Arch. Ophthalmol., 122, 495-505.

20. Lim CSS, Frick KD (2011). The economics of myopia. Animal Models to Clinical Trials, 63-80.