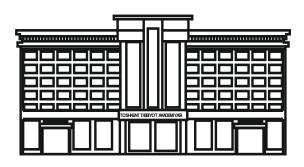
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# TOSHKENT TIBBIYOT AKADEMIYASI AXBOROTNOMASI



# ВЕСТНИК

ТАШКЕНТСКОЙ МЕДИЦИНСКОЙ АКАДЕМИИ

Тошкент

Помыткина Н.В., Сорокин Е.Л., Пашенцев Я.Е.ИЗУЧЕНИЕ ГЕМОДИНАМИКИ ГЛАЗ У БЕ- РЕМЕННЫХ ЖЕНЩИН С САХАРНЫМ ДИАБЕТОМ	111
Sabirova D.B., Yusupov A.A. THE USE OF THE DRUG VIZQUE®IN AGE-RELATED MACULAR DEGENERATION OF THE RETINA	114
Савранова Т.Н., Розукулов В.У., Саиджонов С.С., Асадов Д.А. СРАВНИТЕЛЬНЫЕ РЕЗУЛЬТАТЫ DSAEK С ФЕМТОЛАЗЕРАССИСТИРОВАННОЙ DLEK У ПАЦИЕНТОВ С ЭНДОТЕЛИАЛЬНО-ЭПИТЕЛИАЛЬНОЙ ДИСТРОФИЕЙ РОГОВИЦЫ	116
Сайдалиев У.Т.,Тошбоев М.У.ПРИМЕНЕНИЕ КСЕНОТРАНСПЛАНТАТА ПРИ ПЕРФОРАЦИИ РОГОВИЦЫ	118
Sattarova J.O., Karimova M.X., Vaxabova N.T.,Abdullaeva S.I.REANIMATSIYA BOʻLIMIDAGI BEMORLARDA KONYUNKTIVANING MIKROFLORASINI OʻRGANISH	121
Сидоренко Е.И., Бузруков Б.Т., Бондарь Н.О. ПРОБЛЕМЫ ИССЛЕДОВАНИЯ ВНУТРИГЛАЗ- НОГО ДАВЛЕНИЯ У НОВОРОЖДЕННЫХ	124
Соболев Н.П., Тепловодская В.В., Судакова Е.П. ПРЕИМУЩЕСТВА ИРИДОХРУСТАЛИКО- ВОЙ ДИАФРАГМЫ МОДУЛЬНОЙ КОНСТРУКЦИИ В ХИРУРГИЧЕСКОМ ЛЕЧЕНИИ ПАЦИ- ЕНТОВ С ОБШИРНЫМИ ДЕФЕКТАМИ РАДУЖКИ	127
Султанова М.М., Гасанова Р.М., Агаева А.М.НАСЛЕДСТВЕННАЯ ПАТОЛОГИЯ В СТРУКТУРЕ ДЕТСКОЙ ИНВАЛИДНОСТИ ПО ОРГАНУ ЗРЕНИЯ	129
Тепловодская В.В., Соболев Н.П., Судакова Е.П. ПРИЧИНЫ НЕУДОВЛЕТВОРЕННОСТИ ПАЦИЕНТОВ ПРИ ИМПЛАНТАЦИИ ТОРИЧЕСКИХ ИНТРАОКУЛЯРНЫХ ЛИНЗ	131
Туракулова Д.М., Назирова З.Р., Муратова И.Х., Халмуратова Ы.Т. СТРУКТУРА РАН- НИХ ПОСЛЕОПЕРАЦИОННЫХ ОСЛОЖНЕНИЙ И РЕЗУЛЬТАТЫ ЛЕЧЕНИЯ У ДЕТЕЙ С ВРОЖДЕННОЙ ГЛАУКОМОЙ	133
Tuychibaeva D.M., Do'smuxamedova A.M. BIRLAMCHI OCHIQ BURCHAKLI GLAUKOMA BI- LAN KASALLANGAN BEMORLARDA ENDOTELIAL DISFUNKTSIYANI KOMPLEKS DAVOLASH SAMARADORLIGINI BAHOLASH	135
Файзиева У.С., Усманова Н.А.АНАТОМИЧЕСКИЕ ОСОБЕННОСТИ ХОРИОИДЕИ ПРИ РАЗ- ЛИЧНЫХ ВИДАХ РЕФРАКЦИИ ПО ДАННЫМ SWEPT SOURCE OKT	138
Файзуллоев С.С., Юсупов А.Ф., Ибрагимова Л.О., Абдурахманова У.М. СОВЕРШЕНСТВО- ВАНИЕ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ МАКУЛЯРНЫХ РАЗРЫВОВ	141
Khodjaeva E.A., Karimova M.Kh., Khamraeva U.Sh. EVALUATION OF THE ORTHOKERATO-LOGICAL VISION CORRECTION EFFECTIVENESS AND SAFETY IN CHILDREN AND ADOLESCENTS WITH PROGRESSIVE MYOPIA	144
Xuddieva N.Yu. ADENOVIRUSLI KON`YUNKTIVITNI AMBULATOR SHAROITDA TASHXISLASH VA DAVOLASH	146
Шаакрамова Ю.М., Ташханова Д.И., Одилжонов О.Ё. НАШ ОПЫТ ВЕРТИКАЛЬНОЙ ТРАНСПОЗИЦИИ ГОРИЗОНТАЛЬНЫХ МЫШЦ ПРИ СИНДРОМЕ A-V-ПАТТЕРН	148
Юнусова Л.Р., Абдашимов З.Б., Ходжибекова Ю., Хайдарова Г.Б.МУЛЬТИМОДАЛЬНАЯ ВИЗУАЛИЗАЦИЯ РИНООРБИТАЛЬНОГО МУКОРМИКОЗА У ПАЦИЕНТОВ, ПЕРЕНЕС-ШИХ COVID-19	150
Юсупов А.А., Хамидова Ф.М., Василенко А.В., Эшназаров И.К. НЕКОТОРЫЕ КЛИНИЧЕ- СКИЕ МАТЕРИАЛЫ О ВЗАИМОСВЯЗИ СИНДРОМА СУХОГО ГЛАЗА И АТРОФИЧЕСКОГО РИНИТА	152
Юсупов А.Ф., Ходжаев Д.Х., Саидорипова Ф.Р. ОЦЕНКА КАЧЕСТВА ЖИЗНИ ПАЦИЕНТОВ С АНОФТАЛЬМОМ ДО И ПОСЛЕ ПРОВЕДЕНИЯ КОМПЛЕКСА РЕАБИЛИТАЦИОННЫХ МЕР	155
Юсупов А.Ф., Каримова М.Х., Махкамова Д.К., Цой Е.С. ПЕРВЫЕ РЕЗУЛЬТАТЫ ИСПОЛЬ- ЗОВАНИЯ БРОЛУЦИЗУМАБА У ПАЦИЕНТОВ С НЕОВАСКУЛЯРНОЙ ВОЗРАСТНОЙ МА- КУЛЯРНОЙ ДЕГЕНЕРАЦИЕЙ	158

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### EVALUATION OF THE ORTHOKERATOLOGICAL VISION CORRECTION EFFECTIVENESS AND SAFETY IN CHILDREN AND ADOLESCENTS WITH PROGRESSIVE MYOPIA

Khodjaeva E.A., Karimova M.Kh., Khamraeva U.Sh.

#### ОЦЕНКА ЭФФЕКТИВНОСТИ И БЕЗОПАСНОСТИ ОРТОКЕРАТОЛОГИЧЕСКОЙ КОРРЕКЦИИ ЗРЕНИЯ У ДЕТЕЙ И ПОДРОСТКОВ С ПРОГРЕССИРУЮЩЕЙ МИОПИЕЙ

Ходжаева Е.А., Каримова М.Х., Хамраева У.Ш.

## RIVOJLANUV CHIMIOPIYASI BO'LGAN BOLALAR VA O'SMIRLARDA KO'RISH O'TKIRLIGINING ORTOKERATOLOGIK TUZATILISHI SAMARADORLIGI VA XAVF SIZLIGINI BAHOLASH

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**Цель:** оценка эффективности и безопасности ортокератологической коррекции зрения у детей и подростков с прогрессирующей миопией. **Материал и методы:** ретроспективный анализ электронных медицинских карт пациентов от 7 до 15 лет, применявших ОКЛ для коррекции миопии легкой и средней степени в течение 10 месяцев. **Результаты:** достигнуто повышение остроты зрения у детей до 1,0-1,5 с улучшением остроты зрения вдаль во всех случаях. **Выводы:** ношение ОКЛ как вида коррекции миопической рефракции у детей останавливает прогрессирование близорукости за счет торможения роста переднезадней оси.

Ключевые слова: детская офтальмология, прогрессирующая миопия, ортокератологические линзы.

Maqsad: rivojlanuvchi miopiyasi boʻlgan bolalarva oʻsmirlarda ortokeratologik tuzatish samaradorligi va xavf sizligini baholash. Material va usullar: 10 oydavomida OKL ishlatgan yengil va oʻrtacha miopiyali 7-15 yoshli bemorlarning elektron tibbiy ma'lumotlarini retrospektiv tahlil qilish. Natijalar: bolalarda koʻrish oʻtkirligi 1,0-1,5 gachaoʻsishiga erishildi, barcha hollarda uzoq qakoʻrish oʻtkirligi yaxshilandi. Xulosa: bolalarda miopik refraksiyani tuzatishning bir turi sifatida OK – linzalarni kiyish bemorlarning ushbu toifasida koʻzoʻqining oʻsishini sekinlashtirish tufayli miopiya rivojlanishini toʻxtatadi.

Kalit so'zlar: bolalar oftalmologiy asi, rivojlanuvchi miopiya, ortokeratologik linzalar.

oday, myopiais considered as an urgent problem ■ that worsens the patients' life quality, also as an independent nosological unit, which is being increasingly diagnosed in children and adolescents [4]. According to WHO, the most common visual impairment is myopia, which affects about 3.4 billion people, particularly, by 369 million children and adolescents [5]. Among other correction methods, application of orthokeratological lenses is increasing day by day. Ortokeratological correction (OK) of myopia with special lenses is used to improve optical performancee yes, as well as for the purpose of inhibiting the development of the pathological process [1]. So, taking into account modern approaches to the pathogenesis of myopia and the peculiarities of the effect of OK - lenses on the cornea, the question of the effectiveness and safety of this method of correcting and treating myopia in children remains relevant.

#### The purpose of the study

Evaluation of the efficacy and safety of orthokeratological vision correction in children and adolescents with progressive myopia.

#### Materials and methods

The study was performed on the basis of the Republican Specialized Scientific and Practical Medical Center for Eye Microsurgery, Tashkent, Uzbekistan. A retrospective analysis of electronic medical records of patients from 7 to 15 years of age who used OK - lenses to correct mild and moderate myopia for 10 months was carried out. When included in the study group, there were taken into account such criteria as the age of a patient: when applying for OCL vision correction, the pa-

tient must be less than 18 year sold, and dynamic observation showing that the patient was observed in the clinic for at least six months after the first appointment of OK - correction. Criteria excluding entering the study were: concomitant pathology of the organ of vision of any genesis (not associated with refractive disorders), the absence documented data on re-examinations during the year). Taking into account the selected criteria, we selected and analyzed 25 electronic records of patients (50 eyes) who were prescribed OK lenses in the period from 2022 to 2023. We studied data on visual acuity before the appointment of OK - lenses and against the background of their wearing, refractive index, length anterior - posterior axis of the eye according to the data of ultrasonic A-scanning, biomicroscopic data on the state of the eye surface, reasons for not wearing OK-lenses.

#### Research results

According to the criteria out linedabove, our sample for the study included 25 patients, among whom the following gender - age composition was determined: 16girls and 9 boys aged 7 to 15 years. Average age was about 11±0.2 years. At the first visit, mild myopia was diagnosed in 18 eyes (36%), moderate degree - 32 eyes (64%). The average refractive index was 3.5±0.2 D, while the average length of the anterior - posterior axis (APA) according to one-dimensional ultrasound scanning was 25.34±0.1 mm. Repeated measurement of PZO and refraction was carried out at different times. Before the appointment of OK lenses, the average uncorrected visual acuity in children was 0.15±0.2, the maximum corrected visual acuity was 0.95. As a result of using OK lenses for

**Table** 

25.26±0.1

at least 6 months visual acuity of 1.0-1.5 was achieved in 50 eyes (100%). In all cases onDuring the indicated period of observation (from 3 to 6 months), a consistently

high visual acuity was observed when using lenses without changing the diopter power, which indicates a stable course of myopia (Table).

Dynamic observation of patients while wearing OKL (averages are given)

25.34±0.1

25.34±0.1

Timing Options After 1 month 2 monthslater In 3 months In 6 months When contacting  $1.2 \pm 0.2$ 1.2±0.2 1.5±0.2  $0.15 \pm 0.2$  $1.0 \pm 0.2$  $-3.5 \pm 0.2$  $-3.0 \pm 0.2$  $-3.0 \pm 0.2$  $-2.5 \pm 0.2$ -2.0±0.2

When wearing OK lenses during this period, no side effects were observed in any patient.OK- lenses were used by patients only in the night mode of wearing, giving the child freedom from the constant wearing of glasses or contact lenses during the day. The lenses were worn on the surface of the eye for a period of 6-8 hours. which is significantly less in duration than the duration of wearing daytime soft contact lenses. However, in the planned volume of examination and diagnostic manipulations, there are no samples to determine and identify the degree of aggravation of the possibly existing dry eye syndrome. Perhaps this is due to the fact thatmost authors exclude the possibility of developing this syndrome when wearing orthokeratological lenses. Thanks to wearing OK lenses, patients had high visual acuity, which allows children to lead an active lifestyle, engage in various sports, regardless of the limitations due to wearing daily contact or spectacle correction .An important factor that shows the value of OK lensesin comparison with soft daily correction is the use under parental supervision. Since in the daytime, when using soft contact lenses, children often make mistakes in use and care, which can lead to the development of inflammatory diseases of the anterior segment of the eye.

#### **Conclusions**

Visual acuity

Refraction, D

axis, mm

Anterior-posterior

Wearing OK - lenses as a type of correction of myopic refraction in children stops the progression of myopia due to inhibition of the growth of the anterior - posterior axisin this category of patients [2]. The effectiveness of OK lenses in terms of temporary correction of myopic refraction is justified and observed with each application. This statement reflects the parameter of uncorrected visual acuity in the course of dynamic monitoring of patients [3]. The use of OK - correction meets the safety requirements, since no side effects were observed. Like any other refractive correction method, OK lenses have their advantages and disadvantages. So far, the effectiveness of OK - correction in high myopia has not been studied, which is of particular interest to scientists. A specialist who prescribes this type of correction and

will monitor its implementation in dynamics should remember that careful selection of OKL and monitoring of the state of the cornea during and after the cessation of wearing OK lenses is the key to successful treatment of myopia.

25.29±0.1

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25.31±0.1

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# EVALUATION OF THE ORTHOKERATOLOGICAL VISION CORRECTION EFFECTIVENESS AND SAFETY IN CHILDREN AND ADOLESCENTS WITH PROGRESSIVE MYOPIA

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Objective: evaluation of the efficacy and safety of orthokeratological vision correction in children and adolescents with progressive myopia. Materials and methods: a retrospective analysis of electronic medical records of patients from 7 to 15 years of age who used OK - lenses to correct mild and moderate myopia for 10 months. Results: there was achieved an increase in visualacuity in children up to 1.0-1.5, with improvement in distance visual acuity in all cases. Conclusions: wearing OK - lenses as a type of correction of myopic refraction in children stops the progression of myopia due to inhibition of the growth of the anterior-posterior axis in this category of patients.

**Key words:** pediatric ophthalmology, progressive myopia, orthokeratological lenses.

