PO-1302-004
The classification of congenital cataracts
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Abstract: Pronounced etiological and clinical polymorphism of congenital cataract motivated professor A.V. Khvatova to propose in 1982 the classification taking into consideration specific features of lens opacity and the associated changes in the eyes and the organism as a whole. A wealth of clinical material accumulated in the Department during the next 30 years based on the examination and surgical treatment of 3780 children at the age varying from 1 month to 15 years presenting with uni- and bilateral congenital cataracts (5920 surgical interventions) allowed the classification to be substantially modified and introduced into application in clinical practice. The variant described in the present publication is updated in accordance with the modern high-tech diagnostic methods and surgical treatments of congenital cataracts which makes it possible to choose optimal time for the intervention, its strategy and design including implantation of intraocular lenses to breast-fed infants.

Key words: congenital cataracts, etiology, clinical picture, surgical treatment, implantation of intraocular lenses

PO-1302-012
Laser-assisted surgery of the papillary block in the children
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Abstract: The results of 163 YAG-laser interventions for the elimination of the papillary block following the extraction of congenital, traumatic, complicated, and secondary cataracts are reported. Basal colomba was present in all treated eyes after YAG-laser iridectomy and iris bombe was eliminated in 93,9% of the children. The papillary block was eliminated with the complete restoration of normal anatomical features in 65,5% of the patients in the immediate postoperative period (within 3 months after surgery) and in 54,9% during the follow-up period from 6 months to 17 years in duration with the partial restoration of anatomical and morphological relationships in the affected region in one third of the children (32,5% and 35,3% respectively). The hypotensive effect was documented in 96,6% and 85,3% of the children in the early and late postoperative periods respectively. It was shown that indications for the elimination of the papillary block include any variants of clinical manifestations of this pathology, such as seclusion of the pupil, iris bombe (both with ophthalmic hypertension (requiring emergency intervention) and without it (threatening iridocorneal adhesions)), and preangular block (planned treatment). The strategy for the choice of the laser-assisted treatment is recommended with special reference to various clinical manifestations of the papillary block in the children. The most persistent anatomical effect characterized by the reduced frequency of hemorrhagic complications at lower energy consumption was achieved with the use of the combined Ar-YAG-laser iridectomy (in comparison with YAG-laser iridectomy) in the case of laser colomba over 1 mm in diameter. The importance of maintaining the minimal energy regime is emphasized in conjunction with taking into consideration the degree of child’s communicativeness, the possibility of surgical intervention without narcosis (usually by performing surgery in several steps), and the reduction of the number of narcotization procedures. It is concluded that YAG-laser iridectomy provides an effective and safe tool for the elimination of the pupillary block as an alternative to surgical iridectomy; moreover, it does not require repeated capsulotomy and can not infrequently be performed possible without narcosis.

Key words: YAG-laser, laser surgery, pediatric ophthalmology, papillary block

PO-1302-019
The frequency and the character of lesions in the visual path way of the patients presenting with viral encephalites
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Abstract: The results of the evaluation of the state of the visual pathway in the patients presenting with viral encephalites are presented. The study included 30 children at the age ranging from 5 to 12 years in whom visual evoked potentials (VEP) were investigated within 2 weeks after the appearance of the first signs of the disease. Latency and amplitude of the P100 peak were compared between the patients with varicella and...
tick-borne encephalitis. It was shown that the conductivity along the visual pathway was disordered (slowed down) in 30% of the patients (P100 latency lengthening) while the functional activity of neurons of the visual cortex was impaired in 40% of them (P100 amplitude lowering). Severely disturbed conductivity of the visual pathway was documented in 3% of the patients. The comparison of visual evoked potentials in the children presenting with varicella and tickborne encephalitis failed to reveal a significant difference. The results of the present work suggest considerable resistance to the development of anatomical lesions in the visual pathway and enhanced functional susceptibility of neurons of the visual cortex to the general state of the central nervous system in the children presenting with various clinical forms of viral encephalitis.

**Key words:** visual evoked potentials, viral encephalitis, neuroinfections, children

PO-1302-022
The differential approach to the treatment of various clinical forms of dacryocystitis in newborn infants
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**Abstract:** Dacryocystitis in the newborn babies is one of the commonest diseases in the structure of eye pathology in the children. The etiological structure of pathogenic agents of neonatal dacryocystitis has changed during the past decades. We have distinguished 3 clinical forms of this pathology (catarrhal, suppurative, and phlegmonous) differing in both etiological structure of the pathogens and their susceptibility to antibacterial medications. The treatment of the patients presenting with neonatal dacryocystitis taking into consideration the results of microbiological investigations and sensitivity of pathogenic agents to antibacterial preparations was shown to improve the clinical and functional outcomes of therapy and prevent relapses of the disease that require repeated probing of the lacrimal canals.

**Key words:** dacryocystitis, microbiological studies, sensitivity to antibiotics

PO-1302-027
Peculiar features of protein composition of the lacrimal fluid in children and adolescents with high progressive myopia
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**Abstract:** The objective of the present work was to elucidate peculiar features of protein composition of the lacrimal fluid in children and adolescents with high progressive myopia. Thirty five samples of the lacrimal fluid obtained from 35 children and adolescents at the age from 10 to 17 (mean 13,1 + - 2,2) years with myopia (5,0 – 20,5 D, mean 9,5 +- 3,7 D) developing at the annual progression rate of 0,98 +- 0,8 D. were available for the analysis. Nineteen patients had various forms of peripheral vitreochorioretinal dystrophy. None of the patients included in the study used contact lenses to correct myopia. Nine samples of lacrimal fluid were taken from children and adolescents of the same age with emmetropy without changes in the eye fundus. The samples of lacrimal fluid from the patients of the two groups were significantly different in that they contained much less total protein in the children with high progressive myopia compared with the control subjects. At the same time, the relative amount of lactoferrin (one of the major proteins of lacrimal fluid exhibiting antioxidative and metal-chelating activities) in the former group was significantly higher. The results of the study on the one hand confirm the pathogenetic role of the disorders in the antioxidative protective system of the eye tissues and media and on the other hand give reason to consider the reduction of the total protein content and the rise in the lactoferrin fraction in the lacrimal fluid as the diagnostic signs of progressive development of the myopic process.

**Key words:** progressive myopia, lacrimal fluid, total protein, lysozyme, lactoferrin

PO-1302-032
Microperimetry in type 1 diabetes mellitus
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**Abstract:** Ophthalmopathy in the patients suffering from diabetes mellitus is one of the main causes of impaired vision and blindness all over the world. The present study included 89 patients with type 1 diabetes mellitus (DM1). The traditional research methods were supplemented by microperimetry with the use of a MAIA apparatus. The study has demonstrated a significant (p < 0,0001) 2 dB reduction of light sensitivity in
the central retinal region compared with that in the age-matched healthy subjects in the absence of clinical signs of diabetic retinopathy (controls). The significant reduction of average photosensitivity in the central retinal region and K-index was documented in the case of progressive diabetic retinopathy \( (p < 0.001) \). ROC analysis showed that K values in excess of 3 U and/or mean light sensitivity (≤ 25.8 dB) may be regarded as the threshold values for the chosen parameters of microperimetry; also, they can be used for the purpose of screening for diabetic retinopathy

**Key words:** diabetes mellitus, diabetic retinopathy, microperimetry

**PO-1302-038**

The comprehensive study of accommodation insufficiency

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**Abstract:** The present comprehensive study of the characteristics of accommodation insufficiency included 130 patients at the age varying from 6 to 18 (mean 11.26 ± 0.2) years. They were allocated to 3 groups depending on the reserve of relative accommodation. Patients with the markedly reduced reserves of relative and absolute accommodation showed the minimal values of its objective parameters, such as binocular and monocular accommodation responses. Impaired accommodation was associated with the higher values of habitual accommodation tone and the accelerated development of myopia. However, the resting tone of accommodation in the patients with its deterioration was lower than normal.

**Key words:** myopia, accommodation insufficiency (weakness)

**PO-1302-041**

Algorithms for the differential diagnostics of monogenic diseases of the cornea

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**Abstract:** The results of investigations into clinical polymorphism and genetic heterogeneity of hereditary diseases of the cornea are presented with special reference to the algorithms for differential diagnostics of this group of pathologies. The practical significance of molecular genetic research is discussed.

**Key words:** hereditary diseases of the cornea, molecular genetic investigations, genetic heterogeneity

**PO-1302-044**

Cardiorespiratory characteristics of the children of different age groups presenting with anomalous refraction

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**Abstract:** The present study involved 505 children at the age varying from 4 to 18 years (1010 eyes). The parameters measured included pulmonary vital capacity, the oxyhemoglobin level in arterial blood (in percent), and the pulse rate. Comparative analysis of cardiorespiratory characteristics of these patients presenting either with emmetropy or with anomalous refraction in different age groups revealed a tendency toward the reduction of pulmonary vital capacity in the children with myopia compared with controls, significant decrease of this variable in the boys aged 7-10 years suffering myopia, and the enhanced pulse rate in the 11-14 year-old girls with hypermetropia.

**Key words:** anomalous refraction, myopia, hypermetropia, cardiorespiratory characteristics, children, physical Status

**PO-1302-048**

The influence of hypotensive preparations on ocular hemodynamics

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**Abstract:** The totality of evidence of the role of the blood flow in the eye in pathogenesis of glaucoma account for the ever increasing interest in the investigations of the influence of anti-glaucoma medications on various eye vessels. The effect of anti-glaucoma preparations on various eye vessels was investigated in a clinical study with the use of a variety of different methods. The present review was designed to summarize the results of the most important experimental and clinical research on the influence of hypotensive agents, such as M-cholinomimetics, beta-blockers, carboanhydrase inhibitors, and prostaglandins, on the blood
circulation in different eye compartments in experiment, in healthy subjects, and patients with ocular hypertension and glaucoma.

**Key words:** glaucoma, hypotensive agents, ocular hemodynamics

**PO-1302-056**

**The experimental rabbit «dry eye» model**

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**Abstract:** Various experimental rabbit «dry eye» models available for the investigations into different forms and pathogenetic mechanisms of the «dry eye» condition are described with special reference to their advantages and drawbacks. Their understanding is believed to be helpful for the choice of an adequate model for the solution of concrete clinical problems and the development of new methods for the management of the disease being considered. The authors emphasized that the search for new therapeutic methods and the evaluation of the existing ones are impossible without the use of «dry eye» models.

**Key words:** «dry eye» models, rabbits

**PO-1302-060**

**Coffin –Siris syndrome (case report )**

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**Abstract:** Coffin-Siris syndrome is a very rare hereditary disease (OMIM, 135900) that was described for the first time by G. Coffin and E. Siris in 1970. Only 50 reports of this condition have thus far been published in the medical literature. The authors report a case of clinically confirmed Coffin-Siris syndrome in a boy aged 3 years and 4 months with the results of ophthalmological, neurological, orthopedic, and cardiological examination as well as the data of the instrumental studies including computed tomography and evaluation of visual evoked potentials. It is argued that Coffin-Siris syndrome involves multiple systemic pathology. The clinical manifestations of the disturbed visual function include megalocornea and partial atrophy of optic nerve confirmed by VEP.

**Key words:** Coffin-Sirin syndrome, electrophysiology, visual evoked potentials, partial optic nerve atrophy, optical neuropathy, megalocornea, X-ray studies, genetic tests

**PO-1302-064**

**Transscleral laser coagulation of the retina at the threshold stage of retinopathy in prematurely born babies**

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**Abstract:** The treatment of retinopathy in prematurely born babies is a topical problem of modern pediatric ophthalmology. This paper is devoted to the management of active progressive retinopathy in prematurely born babies. The author presents a detailed description of all stages of trans-scleral laser coagulation of the retina in the threshold phase of the disease. The coagulation procedure is described in many detail in conjunction with indications for the application of this technique, methods of postoperative treatment, and anesthetic support.

**Key words:** retinopathy in prematurely born babies, trans-scleral laser coagulation of the retina, avascular retinal zones, head-mounted binocular ophthalmoscope