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Research Protocol

Nosological Spectrum of Children's Consultation Reception in the Conditions of the Covid 19 Pandemic

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Relevance

The pandemic caused by the coronavirus (SARS-CoV-2) had unprecedented health consequences. The infection can manifest itself asymptomatically, which is especially important in childhood. Ophthalmologists all over the world report various manifestations of infection in the eye, in particular conjunctivitis and keratoconjunctivitis [1-4], episcleritis [6], microcirculatory disorders in the retina [7], optic neuritis [5]. Ophthalmological manifestations in this case can be both a sign of COVID-19 infection and develop a few weeks after recovery [6].

Purpose of the Study

The purpose of our study is to analyze the impact of the COVID-19 pandemic on the structure of nosology of children's consultative admission in 2020 in comparison with 2018 and 2019.

Materials and Methods of Research

A retrospective analysis of the appeal of children for a consultative appointment in the children's ophthalmological office in the Samara Regional Clinical Ophthalmological Hospital named after T. I. Eroshevsky was conducted from 2018 to 2020 inclusive. The age of the children ranged from 1 month to 17 years. The patients were divided into groups with the most common non-inflammatory ophthalmopathology, namely: refractive errors (hypermetropia, myopia, astigmatism), strabismus and amblyopia, conjunctival neoplasm, and inflammatory ophthalmopathology, more precisely, inflammatory diseases of the eyelids and the anterior surface of the eye (chalazion, conjunctivitis, keratoconjunctivitis, episcleritis), as well as inflammatory diseases of the vascular membrane (iridocyclitis, chorioretinitis). The obtained data were processed statistically in the Microsoft Excel 2010 program.

Results and Discussion

According to the results of a retrospective study, it was shown that in 2020, 9290 children were admitted to the pandemic, which is on average 20% less than in 2019. (11,845 children) and 2018 (12,166 children). The decrease in the total number of consulted patients is explained by restrictive measures that were in effect during the increase in the incidence of COVID-19 in 2020.

The dynamics of the treatment of children with non-inflammatory ophthalmopathology is presented in table 1.

Diagnosis (ICD-10 code)	2018		2019		2020	
	Number of patients	% of total Number of patients	Number of patients	% of total Number of patients	Number of patients	% of total Number of patients
Refractive errors (H 52)	6672	54,84%	6383	54,81%	3777	40,65%
Strabismus (H49 – 51)	955	7,84%	1027	8,67%	522	5,61%
Amblyopia (H53)	677	5,56%	473	3,99%	303	3,26%
Neoplasms of the eyelids and conjunctiva (D 21,31)	40	0,33%	45	0,38%	53	0,57%

Table 1: *Dynamics of the treatment of children with non-inflammatory ophthalmopathology.*

The dynamics of the treatment of children with inflammatory eye diseases is presented in table 2.

Diagnosis (ICD-10 code)	2018		2019		2020	
	Number of patients	% of total Number of patients	Number of patients	% of total Number of patients	Number of patients	% of total Number of patients
Conjunctivitis (H10 – 13)	896	7,36%	686	5,79%	757	8,15%
Chalazion (H00.1)	742	6,10%	631	5,33%	664	7,15%
Keratoconjunctivitis (H16.2)	72	0,59%	151	1,27%	153	1,65%
Episclerites (H15)	19	0,16%	21	0,23%	18	0,19%
Iridocyclites (H20)	15	0,12%	9	0,08%	36	0,39%
Chorioretinitis (H30)	23	0,19%	30	0,25%	19	0,20%

Table 2*: Dynamics of the appeal of children with inflammatory eye diseases.*

The nosology analysis showed that in 2020, the treatment of children with refractive errors decreased by 40.3 and 44.7% compared to 2018 and 2019, with strabismus - by 45.2 and 49.4%, amblyopia by 55.2 and 35.6%. This is explained both by restrictive measures during the COVID 19 pandemic, and by the unwillingness of the patients themselves to contact others in conditions of crowding people in the polyclinic.

As for patients with inflammatory diseases of the eye and its appendage, as well as neoplasms, restrictive measures were not applied to them. Parents of patients, realizing the need for urgent treatment of such a pathology, sought help. The number of patients with halazion decreased by 10.5% compared to 2018, but increased by 5.2% compared to 2019, the number of children with conjunctivitis decreased by 15.5% compared to 2018 and increased by 10.3% compared to 2019. The number of cases with episcleritis remained at the same level as before the pandemic. The number of children with keratoconjunctivitis significantly increased and remained at the level of 112.2% more compared to 2018. Children with conjunctival neoplasms (nevi) showed a systematic growth by 2020 by 17.7% compared to 2019 and by 32.5% more compared to 2018.

Attention is drawn to a statistically significant ($P \leq 0.05$) increase in the incidence of children with inflammation of the anterior part of the vascular membrane (iridocyclitis). The number of such patients in 2020 has more than doubled compared to the data of 2018-19. This observation does not allow us to unambiguously link the increase in the frequency of iridocyclitis with COVID 19 disease. According to many pediatricians and infectious diseases specialists, children easily carry the disease COVID 19, but there is very little data in the literature on whether the SARS-CoV-2 virus can cause changes in the visual organ in children.

This issue needs further study and analysis.

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