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Statistical Indicators of Congenital Cleft Lip and Palate in Karakalpakstan

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In recent decades, there has been a tendency towards an increase in the frequency of this defect, as well as in general congenital malformations, which is associated with an increased effect of toxic substances on the body, due to the intensive development of industry, in particular chemical. In the Republic of Karakalpakstan, in regions with a chemical industry, today the birth rate of children with congenital cleft lip and palate is higher than the national average. In the etiological aspect, congenital cleft lip and palate belong to a multifactorial pathology, in which various endogenous, exogenous, and genetically determined factors may play a role.

Key words: *birth statistics, congenital malformations of the face, congenital cleft lip and palate.*

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According to Amanullaev R.A. (2009) the birth rate of children with congenital cleft lip and palate in Karakalpakstan is 1 in 700-850 newborns (1). The frequency of birth of children with congenital defects in Uzbekistan increased from 1:1230 in 1995 to 1:745 in 2003 (1, 8, 11, 16, 19).

The clinical and epidemiological characteristics of congenital malformations of the maxillofacial parts in the Karakalpakstan territory and the city of Nukus and the underlying region showed that the prevalence of this pathology is approximately the same as in other regions of the Aral Sea region. At the same time, the presented data require clarification and identification of areas with different birth rates of children with congenital pathology, study of ethnic, environmental, age and other risk factors (1, 6, 14, 20).

An analysis of the literature on this section indicates the variability of statistical data, which, apparently, depends on the methods of recording congenital clefts, infant mortality, geographical location, social conditions, and the level of medical care in various regions of the Aral Sea region (1, 5, 10, 12, 13 , 18).

Information about the prevalence of congenital cleft lip and palate, according to experts, is necessary for medical and statistical analysis, identifying factors leading to their development, evaluating the effectiveness of prevention; planning the scope of specialized care (2, 3, 4, 7, 9, 15, 17).

Studying the literature data, we determined that, for existing time, there is no justification for modern diagnostic methods, and the timing of the implementation of the stages of complex rehabilitation of children with congenital cleft lip and palate in Karakalpak conditions, since there is

no specialized medical examination center. All of the above determined the purpose and objectives of this study.

Study purpose:
To study the prevalence of congenital cleft lip and palate and substantiate the need to create a specialized center in Karakalpakstan.

Research objective:
To study the frequency and assess the risk factors for the birth of children with congenital cleft lip and palate in the territory of the Republic of Karakalpakstan.

According to statistics for the years under study (2017-2021), 190558 children were born in Karakalpakstan. Of these, 254 people with congenital pathology of the maxillofacial region, including:
66 - unilateral through cleft lip and palate
22 - bilateral through cleft lip and palate
100 - isolated cleft lip (IG)
64 - isolated cleft palate (IP)
2 - atypical cleft face (AF)

Table 1
Dynamics of the frequency of birth of children with pathology of the maxillofacial region and with congenital cleft lip and palate CCLP since 2017 to 2021

Year	Total children born alive	Number of children with HPLP	Number of children with CCLP				
			IG	IP	unilateral	bilateral	AF
2017	38352	46	15	18	11	4	
2018	38386	49	18	12	13	4	1
2019	38306	47	26	9	11	4	1
2020	38158	61	21	13	16	5	
2021	37356	51	20	12	15	5	
Total	190558	254	100	64	66	22	2

The lowest rate was registered in 2017, in 2020. The rate of birth of children with congenital cleft lip and palate per 1000 newborns for the study years (2017-2021) varied from 0.76 ± 0.5 in 2017 to 2.82±0.23 in 2021 ($p<0.001$). The frequency of facial clefts during the analyzed period averaged 1:750. The results of the distribution of districts of Karakalpakstan by the frequency of birth of children with congenital pathology of the maxillofacial region are presented in Table 2.

Table 2.
Distribution of newborns with maxillofacial pathology in the regions of Karakalpakstan for 2017 - 2021

Districts	Total live births					Number of children with HPLP					
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	
Nukus	2983	2910	2905	2896	2796	3	4	3	4	3	1,18/1000
Nukus district	2964	2656	2651	2642	2542	3	4	3	4	3	1,3/1000
Amudarya	2745	2612	2607	2598	2498	2	2	2	3	2	0,8/1000
Beruniy	2654	2664	2659	2648	2602	3	2	3	4	4	1,2/1000
Buzatau	1623	1543	1538	1529	1509	3	3	5	5	3	**2,5/1000**
Kegeyli	2586	2592	2587	2578	2508	2	2	2	2	2	0,8/1000
Karauzyak	2154	2170	2165	2156	2126	3	3	3	4	3	1,5/1000
Kungrad	2658	2589	2584	2575	2529	5	4	4	5	6	1,9/1000
Kanlikul	1688	1602	1597	1588	1562	1	3	2	2	2	1,24/1000
Muynak	1257	1212	1207	1198	1156	2	2	4	5	4	**2,82/1000**
Takhtakupir	2259	2189	2184	2175	2129	4	5	5	6	5	2,28/1000
Turtkul	2673	2584	2579	2570	2535	3	3	2	3	1	0,92/1000
Khodjeyli	2896	2574	2569	2560	2518	2	3	1	2	2	**0,76/1000**
Takhiatash	2987	2542	2537	2528	2486	2	2	2	3	3	0,91/1000
Chimbay	2359	2018	2013	2011	2114	2	2	2	3	3	1,14/1000
Shumanay	2562	2047	2042	2026	2036	3	3	2	3	3	1,3/1000
Ellikkala	2297	1882	1877	1880	1710	3	2	2	3	3	1,4/1000
Total	38352	38386	38306	38158	37356	46	49	47	61	51	**1/750**

The administrative districts with the lowest birth rate of children with congenital pathology of the maxillofacial region included the Khojayli district (0.76 per 1000 newborns), in the Amudarya and Kegeyli districts (0.8 per 1000 newborns). These areas belonged to typical rural areas, where there is minimal industrial pollution.

The administrative regions with a high frequency of birth of children with congenital pathology included: Muynak (2.82/1000), Buzatau (2.5/1000), Kungrad (1.9/1000), where the figures significantly exceeded the average for the republic.

The severity of the malformation of the face is determined not only by external disfigurement, pronounced functional disorders, the child's social inferiority in preschool and school groups, conflict tension and a negative psychological background in the family, but also by the fact that the presence of a cleft causes a number of somatic disorders that lead to impaired growth and development child's body.

The problem of rehabilitation of children with congenital cleft palate is multifaceted and complex. The ultimate goal of rehabilitation measures is to restore the function of the articulatory apparatus and the formation of correct speech in children.

The main method of treating such children is the surgical removal of the palate defect - uranoplasty. However, in most cases, surgical treatment, restoring the integrity of the palatopharyngeal closure, does not always ensure its sufficient functioning, which causes difficulty in normal nutrition and various speech defects.

The severity of this pathology in children, the unsatisfactory quality of life, the difficulty of full-fledged rehabilitation of patients with congenital cleft lip and palate justifies the need for scientific research aimed at improving the methods of prevention and rehabilitation of children with congenital cleft lip and palate.

The development of specialized care for children with congenital pathology to their families at all stages of the development of society, in the most difficult socio-economic conditions, should

remain the most important task of national health care. The only correct approach is an integrated approach to their treatment in the conditions of specialized centers in the dispensary regulations, using all high-tech methods of examination and reconstructive surgical treatment.
The main task of the center is to provide systematic step-by-step treatment of patients with congenital cleft lip and palate for the entire period of dispensary observation.
The effectiveness of the medical examination center can only be assessed if there is a clear program of therapeutic measures, based on the conditions of a particular region.
The preparation by each center of a clear program of assistance to sick children requires a multi-stage treatment by specialists, a different sequence and timing of their implementation.
Information and computer technologies in health care will serve as the basis for the formation of new approaches to work. It is shown that the information computer space is a new technology for medical, psychological, pedagogical and social rehabilitation of patients with congenital pathology of the maxillofacial region.

According to most experts, it is currently necessary to create and implement automated information systems, which will allow the user to have complete data about the patient. At the same time, analytical and statistical work is greatly simplified, new opportunities for comparing data, making forecasts, and modeling activities in order to find optimal solutions appear.

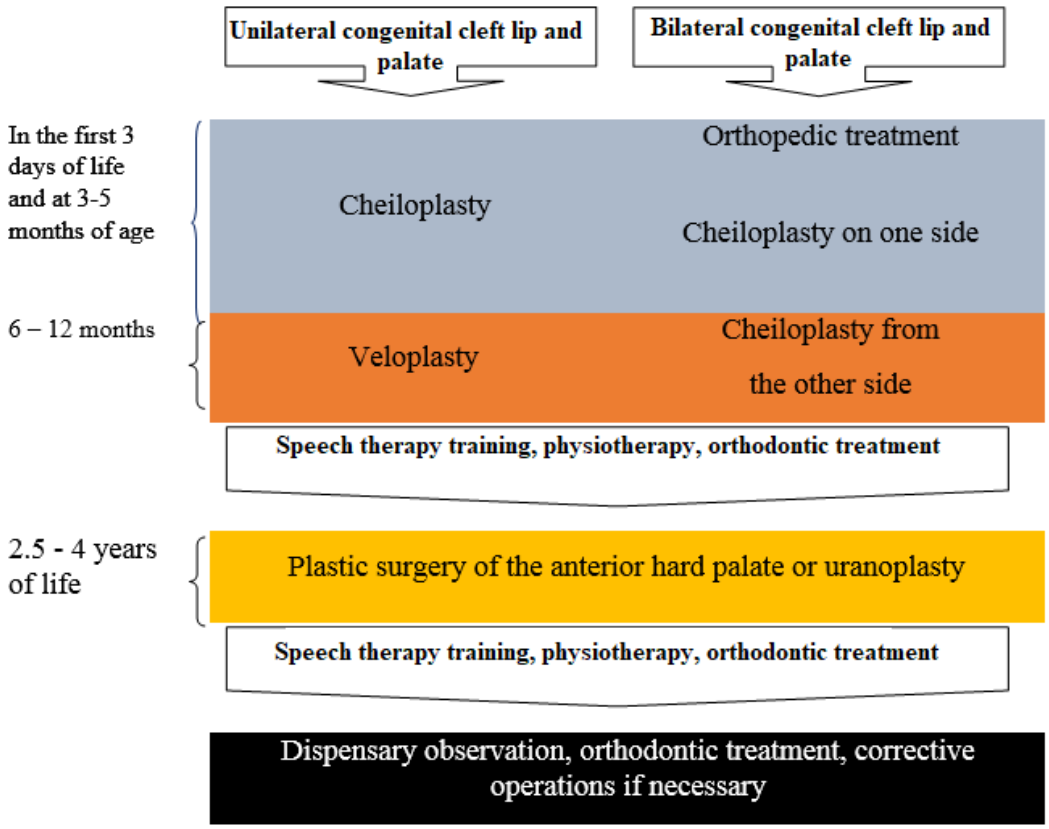

Fig.1. *Algorithm for the rehabilitation of children with congenital cleft lip and palate in Karakalpakstan.*

In Karakalpakstan, unified criteria and methods for evaluating the results of treatment have not been developed, and no work has been done to compare the results of the rehabilitation of children with this pathology. The introduction of a unified system for evaluating the results, which opens up the possibility of integration into the pan-European system for standardizing the results of treatment, is a very urgent task of pediatric maxillofacial surgery.

One of the priority areas of domestic medicine at present is also informatization (computerization) of the country's health care at all levels.

Until now, in our country there were no computer software systems for the Centers for the Rehabilitation of Children with Congenital Facial Cleft and stationary institutions where assistance is provided to children with malformations of the maxillofacial region. There are also no accounting and reporting documents developed and mandatory for rehabilitation centers that allow comparing the results of rehabilitation of patients between the Centers.

Conclusions

The rate of birth of children with congenital cleft lip and palate for the study period (2017 - 2021) was 1.33%. Among the administrative districts of Karakalpakstan, the rate of birth of children with cleft lip and palate varied from 0.13% in industrial areas to 0.18% ($p<0.001$) in typically rural areas with minimal anthropogenic pollution. The introduction of information - computer support allows you to quickly use and develop the accumulated experience and knowledge in the field of treatment of children with CCLP both in practice and in the educational and pedagogical process.

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