

FREQUENCY AND STRUCTURE OF CONGENITAL MALFORMATIONS (CM) OF CHILDREN AT THE HOSPITAL STAGE

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Abstract

The share of VPR in Kyrgyzstan is continuously increasing. According to the National Confidential Research Report, in cases of perinatal mortality, the incidence of congenital malformations (CM), deformities and chromosomal abnormalities are quite high (47.6%). The case histories of children with CM for 5 years hospitalized in the clinical departments of Osh Multidisciplinary Children's Clinical Hospital (OMCCH), according to the static classification of diseases and health-related problems (10th revision), were analyzed. There is an increase in proportion of children who died from CM to 43.3%. Young children have a high mortality rate from congenital heart disease (CHD) complicated by severe pneumonia. The increase in the mortality rate from CM is associated with the severity of defects, late admission to inpatient treatment and complications.

Keywords: children, congenital diseases, perinatal mortality.

Relevance

World health organization (WHO) informs that 5 to 6% of children with congenital malformations are born annually in the countries of the world, while in half of the cases these are fatal and severe malformations that require surgical correction and rehabilitation. The proportion of congenital malformations in Kyrgyzstan in the pathology of childhood is continuously increasing. According to 1-2 National Reports of Confidential Studies of Perinatal Mortality (UNICEF) from 2018 to 2019 years highlighted that frequency of congenital diseases (malformations), deformities and chromosomal abnormalities are quite high (47.6%). In Kyrgyzstan, according to V.S. Kononov for 1989 year, proportion of CM was 14.4 per 1000 newborns, for 2009 (20 years later) according to N.M. Aldasheva, 21.56 per 1000 newborns. According to Nurueva Z.A. in the south of the Republic in 2012 at the hospital stage, patients with congenital malformations amounted to 11.2% and 10.4% over 5 years (from 2013 to 2017 year).

The aim of this study was to analyze the frequency of congenital malformations development, structure, mortality rates at the hospital stage over the past 10 years (from 2013 to 2022 year).

Material and research methods

We analyzed the case histories of children with congenital malformations for 5 years, hospitalized in the clinical departments of the Osh Multidisciplinary Children's Clinical Hospital (OMCCH). Registered according to the static classification of diseases and

health problems (10th revision): case histories of deceased children with congenital malformations (more than 600 cases), autopsy reports of deceased children (more than 300 cases) and market (statistical) reports of surgical and somatic departments.

The work was carried out on the basis of Osh multiprofile children clinical hospital (OMCCH), which serves the child population of 3 regions (Osh, Jalal-Abad, Batken) of the southern region of Kyrgyzstan, where about 40% of child population of the republic lives.

Research results and discussion

The dynamics of qualitative indicators for 10 years in a comparative aspect (from 2013 to 2017 and 2018 to 2022 years) were shown in Table 1. As can be seen, the total number of patients treated in hospital as a whole increased in comparison with 2013 to 2017 by 18656 hospitalizations despite a sharp decline (804 treated cases) in 2020 year during the COVID-19 pandemic.

There is a trend towards decrease in proportion of children with congenital malformations in general due to migration to other countries. There is an increase in the proportion of children who died from congenital malformations: from 38.2% to 43.3%. Mostly mortality from congenital heart disease, complicated by severe pneumonia in children under one year old, as well as congenital malformations of the gastrointestinal tract (congenital atresia of the bile ducts, intestinal anomalies). The mortality rate of children aged from 0 to 14 years old remains at the same level, amounting to 0.7%. The increase in the mortality rate from congenital malformations in the range of 2.5% to 6.4%, which is associated with defects severity, late admission to inpatient treatment, and severe complications incompatible with life. Not at the proper level of rehabilitation measures for children with congenital malformations, leading to early disability and mortality.

Table 1: Quality indicators of OMCCH for 5 years (from 2013 to 2017 and 2018 to 2022)

Indicators	For 5 years (2013 to 2017)	2018	2019	2020	2021	2022	For 5 years (2018 to 2022)
	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %
Total number of discharged patients	92759	20730	23932	14461	25184	27108	111415
Discharged with CM	9321	1681	1514	804	1322	1814	7135
Specific weight of CM	10.1%	8.1%	6.3%	5.5%	5.1%	6.6%	6.4%
Total deaths of children (from 0 to 14 years old)	622	155	142	127	186	170	780

Mortality % of children from (from 0 to 14 years old)	0.6	0.6	0.7	0.9	0.7	0.5	0.7
The number of deaths from congenital malformations (specific weight)	238-38.2%	55-35.4%	47-33.1%	55-43.3%	77-41.3%	72-42.3%	306-39.6
Mortality % of children from CM	2.5	3.2%	3.1%	6.4%	5.5%	4.0%	4.5%
Average stay (beds/days) with CM	10.3	10.8	9.4	8.7	9.4	9.0	9.5

The leading place is occupied by the CM of musculoskeletal system, amounting from 23.3% to 40.9% (Table 1). CHD growth by 4.8% peak level was observed at 35.7% in 2019 year. Gastrointestinal tract anomalies have an increase 3.8%, a peak level of 19.4% in 2021. Malformations of the urogenital system amounted to 15.8% against 12.7%, an increase of 3.1%. When studying the history of disease, among the musculoskeletal system defects, the leading ones are hip congenital dislocations over the past 5 years, amounting to 1583 cases (67.6%), limbs defects, torticollis, cerebral palsy and others range from 2.5% to 8.8%, respectively.

There are cases of late diagnosis of congenital hip dislocation, when the child begins to walk, after 1 to 2 years up to 11%. CM in the urogenital system tends to increase by 3.1%, the highest percentage is cryptorchidism 33% (372 cases), epi-hypospadias 21.3% (240 cases), hydronephrosis 21.1% (238 cases), and kidneys aplasia 4.5% (51 cases). There is an increase in VR (vesicoureteral reflux, polycystic kidney disease from 1.8 to 2.3%).

Genitourinary system congenital malformations occupy a special place in pediatric urology. Many of them may not manifest themselves clinically for a long time (polycystic kidney disease, aplasia and hypoplasia of the kidney, anomalies in the shape and location), others lead to early renal failure and death. In studies, there is an increase in cryptorchidism, epi- and hypospadias and genital organs anomalies, VR up to 13.8% over the past 5 years.

Table 2: Specific weight of CM by systems for 5 years (from 2013 to 2017 and 2018 to 2022 years)

CM according to systems	For 5 years (from 2013 to 2017)	2018	2019	2020	2021	2022	For 5 years (from 2018 to 2022)
	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %	Abs. values and %
Malformations of the digestive system	1058-11.3%	201-11.9%	225-14.8%	154-19.1%	257-19.4%	243-13.3%	1080-15.1%
Congenital heart disease (CHD)	2179-23.3%	414-24.6%	408-26.9%	234-29.1%	473-35.7%	483-26.6%	2012-28.1%
Musculoskeletal system malformations	3004-32.2%	742-44.1%	620-40.9%	250-31.0%	309-23.3%	418-23.0%	2339-32.7%
Urinary system malformations	1190-12.7%	203-12.1%	183-12.8%	140-17.4%	177-13.3%	426-23.4%	1129-15.8%
Vision organs defects	783-8.6%	111-6.6%	76-5.1%	23-2.9%	97-7.3%	171-9.4%	478-6.7%
Other CM	271-2.9%	10-0.5%	3-0.1%	3-0.3%	9-0.5%	73-4.3%	97-1.4%
Total:	9321	1681	1514	804	1322	1814	7135

CONCLUSION

Thus, there is an increase in the children proportion who died from congenital malformations to 43.3%. In young children, high mortality from congenital heart disease, complicated by severe pneumonia. Increase in the mortality rate from congenital malformations (up to 6.4%) is associated with the defects severity, late admission to inpatient treatment and complications. CM of musculoskeletal system is the most common pathology in the structure of anomalies, the leading ones are congenital dislocations of the hip.

It should be noted that the congenital malformations diagnosis and treatment quality will make a significant contribution to reduction of perinatal and infant mortality. It is also necessary to raise the quality of the work of perinatal consultations based on the Marriage and Family consultations. Timely diagnosis and treatment of congenital malformations in a hospital leads to a decrease in early disability and an improvement in the patients life quality. At postgraduate training, it is necessary to prepare pediatric cardiac surgeons for the treatment of children with congenital heart disease in the early stages.

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