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THE ROLE OF PRENATAL MONITORING FOR THE DETECTION OF FETAL MALFORMATIONS

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РОЛЬ ПРЕНАТАЛЬНОГО МОНИТОРИНГА ДЛЯ ВЫЯВЛЕНИЯ ПОРОКОВ РАЗВИТИЯ ПЛОДА

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РЕЗЮМЕ

В настоящее время врожденные пороки развития и наследственные заболевания считаются важной проблемой здравоохранения. Своевременное и полноценное проведение современных ультразвуковых исследований позволяет диагностировать основную часть пороков развития беременности. В данной научной статье представлен статистический анализ ряда важных демографических показателей, распространенности и пропорциональных характеристик врожденных пороков развития, проблем пренатального наблюдения за беременными женщинами и стратегических подходов, направленных на решение этих проблем.

One of the achievements of modern medicine is the screening system of observations and our logical way of doing things. Specialized management, timely diagnosis of intrauterine malformations, and full medical-genetic counseling play a key role in preventing pregnancy complications, and therefore perinatal morbidity and mortality [6].

During the last decades, issues related to mother and child life have always been in the center of attention of the world's progressive community. Armenia has also fixed the priority of children's well-being and health care ("2003-2015 National Strategy for Maternal and Child Health Protection", "2010-2015 National Strategy for Health and Development of Children and Adolescents", "2010-2015 Action Plan", "2014-2025 perspective development strategic plan of the Republic of Armenia" etc.).

In Armenia, the infant mortality rate (per 1,000 live births) has decreased by about 47% (in 2013 - 9.8%, in 2016 - 8.9%, in 2022 - 7.6%), but the mortality of infants (0-28 days old) in period following 2010 remained at nearly same level (2010 - 7.7%, 2011 - 7.8%, 2012 - 7.2%, 2016 - 6.5%, 2022 - 6.1%). Along with the decline of child mortality, the infant mortality rate has almost always maintained its share of 3/4 in the structure of child mortality.

There has also been no significant improvement in low birth weight and prematurity rates in recent years. Moreover, during the 2012-2022 period a gradual increase in the specific weight of both low birth weight and premature infants was recorded. Low-birth-weight infants have significantly higher risks of both death in early childhood and of growth and development disorders and neonatal pathologies later in life.

The high prevalence of congenital malformations is a serious problem among neonatal pathologies. According to the reporting data of the Ministry of Health of the Republic of Armenia, the rate of congenital malformations (per 1000 mature infants) has shown an increasing trend in recent years (2008 - 12.3%, 2009 - 13.6%, 2010 - 12.9%, 2011 - 14.8%, 2012 - 15.6%, 2013 - 16.3%, 2022 - 16.1%). The last indicator is almost twice high compared to same indicator registered in 1990 (1990 - 8.3%).

Three percent of babies in the world are born with various hereditary diseases, 6% of stillbirths are due to chromosomal abnormalities, 30% of spontaneous abortions are due to genetic and chromosomal pathologies [3]. According to the statistical data of RA Ministry of Health, fetal development defects in

miscarriages in 2020-2021 were 17% and 18% respectively and among live births - 1.76% and 1.84% respectively. In the case of premature babies, these indicators are much higher. In the mortality structure of children aged 0-1 years, these diseases amount 21% of the causes of death. This indicator has shown an increasing trend in recent years.

In the proportion of birth defects, the first place is occupied by the defects of the nervous system, the second place is the locomotor system, and the third place is the cardiovascular system. The most common are: defects in the development of the nervous system (hydrocephaly, anencephaly, spinal hernia, etc.), limb defects (skeletal dysplasias, osteochondrodysplasias, etc.), defects in the cardiovascular system (defect of the interventricular septum, stenosis of the main arteries, atresia, transposition, etc.), defects of facial development (cleft lip and palate). Among chromosomal pathologies, Down's syndrome (probability: 1:700 - 1:800) and others are more common [4, 9].

Congenital heart defects are leading in the etiology structure of the mortality of children from congenital defects in the early neonatal period. Every year in the world, 9-10 children of the newborn born have a congenital heart defect (0.9-1%), and this number tends to increase, which is partly explained by the expansion of the possibilities of early diagnosis of this pathology in recent decades [2, 7].

One of the methods of early detection and prevention of birth defects, application of which can reduce the mortality caused by birth defects, is the implementation of screening examinations, with the mandatory inclusion of ultrasound examination [1]. In a broader sense, early registration of pregnant women, early detection of pregnancy pathologies, in particular, adequate assessment of intrauterine development of the fetus and early diagnosis of pathologies and, accordingly, the implementation of early interventions can significantly improve the current situation. In the context of what has been said, the quality and availability of services provided in that area is very important. Although there are established procedures for the implementation of ultrasound screening during pregnancy and the evaluation of the intrauterine condition of the fetus and the early diagnosis of malformations, there are still high diagnostic errors, cases of delayed diagnosis, and sometimes omissions. The need to improve functional diagnostics is particularly a problem at the regional level [8]. 58 health organizations carry out perinatal ultrasound control of pregnant women in RA regions.

An important factor determining the quality of prenatal care is also the problem of access to medical-genetic counseling and research, which is rightly insufficient for the population, especially pregnant women from the socially disadvantaged high-risk group [5].

It becomes clear that further key strategic actions and measures should be aimed at overcoming the existing problems. The main strategic directions offered by us are: strengthening and expanding the possibilities of programs aimed at prenatal screenings and care of pregnant women, developing and implementing modern practices for the implementation of ultrasound screenings of pregnancy, developing appropriate educational modules on early diagnosis of birth defects and organizing special courses, improving the knowledge and skills of specialists involved in the field of prenatal monitoring and ultrasound screenings of pregnant women and the development of professional capacities, the assessment of the necessary needs for instrumental screening and the provision of prenatal care institutions according to it, the creation of a reference center for ultrasound diagnostics and professional training at the level of the republic, the strengthening of public awareness activities aimed at the population, the development of informational materials on prenatal care of pregnancy and the risk factors of birth defects and distribution etc.

Maintaining children's health is important for every family, for the society in general, because their development and health status significantly determines the future well-being of society and is a guarantee of sustainable economic and social development. The phenomenon of child health requires constant studies, analyses, introduction of new scientific diagnostic and treatment methods.

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SUMMARY

Currently, congenital malformations and hereditary diseases are considered to be an important health problem. Timely and full implementation of modern ultrasound screenings allows to diagnose the main part of defects during pregnancy. This scientific article presents the statistical analysis of a number of important demographic indicators, the prevalence and proportional characteristics of birth defects, the problems of prenatal control of pregnant women and the strategic approaches aimed at improving these problems.

Keywords: Prenatal care, access to health care, congenital malformation, instrumental screening

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რეზიუმე

დღეისათვის ჯანმრთელობის მნიშვნელოვან პრობლემად ითვლება თანდაყოლილი მანკები და მემკვიდრეობითი დაავადებები. დროული და სრულყოფილი თანამედროვე ულტრაბგერითი სკრინინგი ორსულობისას დეფექტების ძირითადი ნაწილის დიაგნოსტიკის საშუალებას იძლევა. ამ სამეცნიერო სტატიაში წარმოდგენილია მთელი რიგი მნიშვნელოვანი დემოგრაფიული მაჩვენებლების, თანდაყოლილი დეფექტების გავრცელებისა და პროპორციული მახასიათებლების, ორსულთა პრენატალური კონტროლის პრობლემებისა და ამ პრობლემების გაუმჯობესებისკენ მიმართული სტრატეგიული მიდგომების სტატისტიკური ანალიზი.

