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REGISTER OF BIRTHS AS THE MOST IMPORTANT TOOL FOR FORECASTING OBSTETRIC COMPLICATIONS AND REDUCING OF PERINATAL LOSS LEVEL

DOI 10.25789/YMJ.2020.69.25

УДК 618.4 (470.1 1)

The article provides a review of the literature on the creation and maintenance of the birth register in Russia and other countries. In foreign countries birth registers have been used for more than half a century. Based on the data of their birth registers, perinatal losses were reduced by more than 5 times. There are currently no valid birth registers (BR) in the Russian Federation. There was experience in their implementation and maintenance in Arkhangelsk and Murmansk regions from 2006 to 2011.

In the Arctic zone of Russia, a high risk for perinatal complications is caused by several groups of factors: inaccessibility of perinatal centers, nutrition features (unvaried food), the presence of regional pathologies, the constant exposure to cold temperatures, the absence of a highly qualified medical team on an ongoing basis, the presence of extragenital diseases, and understaffing by narrow specialists in medical institutions of the Arctic regions, seasonal absence of perinatum transport centers with midwife centres, district hospitals and central district hospitals. Women with developed complications of pregnancy and childbirth are evacuated by medical aviation, the departure of which may be delayed or delayed due to bad weather conditions. We need effective mechanisms for predicting perinatal complications in order to take all measures to prevent them in advance.

Based on the above, it becomes relevant to create and introduce a register of pregnancy and childbirth in the Arctic zone of the Republic of Sakha (Yakutia) with a retrospective analysis of all currents and outcomes of pregnancy and childbirth for the timely prediction and prevention of perinatal complications and transportation of pregnant women to level III of obstetric institutions.

Keywords: birth register, perinatal losses, obstetric complications, Arctic regions, prognosis.

Birth Register (BR) is an electronic database that contains detailed clinically and scientifically significant information about the health of all pregnant women and children born in a particular area [3].

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BR is a database for current and future research, due to which it is possible to reduce perinatal losses, develop standards and protocols for providing medical care to pregnant women, women in childbirth and women in childbirth. The use of BP allows to reduce by several times the frequency of sudden infant death [6], to assess the risks associated with IVF [8, 9], to reduce perinatal mortality [9], to more accurately assess the prevalence of congenital anomalies [12] and the influence of genetic and other factors on the etiology of the perinatal complications [13, 18]. Based on the register data, it is possible to analyze complications of pregnancy and childbirth, as well as the causes of perinatal and maternal mortality in a full-term pregnancy, followed by organizational decisions in order to predict and prevent them [1].

Taking into account the potential risk factors that lead to adverse pregnancy outcomes, the birth register allows to evaluate the effectiveness of standards for the provision of medical care in obstetrics and perinatal medicine. The information collected through the registry of births is used for quality monitoring of obstetric care services and neonatology, as well as to identify the causes that lead to a pathological condition. This database allows for quality control of the implementation of certain decisions, orders, standards and clinical recommendations.

BR began to be created in 1960. The first Registry was founded in Norway in 1967 and was a database of medical birth certificates [2]. Gradually, its status changed and today BR carries out continuous registration of pregnancy outcomes (starting from 1999 also with abortions) to monitor birth defects and other perinatal conditions, assess the quality of medical care and provide data for epidemiological studies [10]. By 2016, 2,817,468 pregnancy outcomes were registered in it. Such a quantity of data is a huge research potential, providing constant epidemiological surveillance [12]. Thanks to the work of the Norwegian BR, it was possible to reduce several times the cases of sudden infant death syndrome [15]. During the existence of this registry, perinatal mortality in Norway decreased by 5 times [9]. An assessment was made of the risks to maternal and fetal health associated with IVF [7, 8], as well as the contribution of genetic factors to the etiology [17]. The intake of folic acid in order to prevent congenital malformations was developed and implemented based on data from the Norwegian BR [2].

Today, national birth registries also exist in Finland, Iceland, the USA, Canada, Australia, and Estonia. The largest of them is Swedish BR, with an annual number of births of more than 100,000 [14]. The reason for their creation was the growth of congenital anomalies in the 50-60s [16]. The task was to identify the risk factor for fetal

malformations. A drug with teratogenic effects of thalidomide was identified and discontinued, and this fact went down in history and is described in textbooks on perinatology.

Based on data processing, the Swedish BR revealed 9% of the missing data on the harmful habits of the mother and father, 15-25% - on the body mass index before pregnancy, which allows to identify the defects in the work of the obstetric service.

The first in Russia was the Kolskiy BR, which contained data recorded in 1973-1997. On the basis of studies conducted on the research of this BR, the relationship of preterm birth, low birth weight, a low Apgar score with a low level of education and poor living conditions of the mother was proved [5].

In Russia, the BR was introduced into practice the Murmansk and Arkhangelsk regions. In the Murmansk region, RR functioned from 2006-2011 and was used to study the prevalence of congenital malformations and risk factors.

Studies based on data from the Kolskiy and Murmansk BRs have revealed that the overall prevalence of congenital malformations at birth between 1973-2011 in Monchegorsk was higher compared to EUROCAT data [18].

On the example of Birth Register of Arkhangelsk Oblast, the influence of poor living conditions, bad habits and increased stress on the decrease in body weight of infants was revealed [5]. In BR of Tulskiy region data from more than 11 thousand birth histories were entered, based on the study of which the relationship of socio-demographic factors and adverse outcomes of pregnancy and childbirth was proved [17]. Even a short time of using register data allows to focus on perinatal risks and reduce adverse outcomes of pregnancy and childbirth. The experience of these countries proves the need for the introduction of BR in the Republic of Sakha (Yakutia).

Thus, BR serves as the most important information resource for science and practical health care and is a tool for monitoring perinatal complications and the prevalence of congenital malformations.

Conclusion. The problem of obstetric complications and perinatal losses is one of the most urgent in modern world medicine. Biomedical, socio-economic and psychological factors influence the development of adverse pregnancy outcomes. Urinary tract infection before childbirth is an established risk factor for low birth weight and perinatal death in children born to women aged 20–29 years [5]. Cigarette smoking [1, 4], alcohol consumption [2] and consumption drugs [4] during pregnancy increase the risk of stillbirth. Compared to healthy women, pregnant women with urinary tract infections [4, 5] and genital tract [5] are at a higher risk of preterm labor. Poor antenatal care [11] and maternal infections [16] are associated with early infections in newborns.

In the Arctic zone of Russia, a high risk for perinatal complications is caused by several groups of factors: inaccessibility of perinatal centers, nutrition features (uniform food), the presence of regional pathologies, the constant exposure to cold temperatures, the absence of a highly qualified medical team on an ongoing basis, the presence of extragenital diseases, and understaffing by narrow specialists in medical institutions of the Arctic regions, seasonal absence of perinatum transportation with medical and obstetric centers, district hospitals and central district hospitals. Women with developed complications of pregnancy and childbirth are evacuated by medical aviation, the departure of which may be cancelled or delayed due to bad weather conditions and time of day.

Taking into account all the points made above, it becomes relevant to create and implement a pregnancy and childbirth registry in the Arctic zone of Republic Sakha (Yakutia) with a retrospective analysis of all currents and outcomes of pregnancy and childbirth for the timely prediction and prevention of perinatal complications and transportation of pregnant women to level III obstetric institutions.

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