

In the control group statistically significant differences in the number of proliferating cells in the presence of MSC and BMMC in the above cultures were absent. In the experimental group, the number of splenocytes proliferating in response to ConA were not statistically significantly different from the control group ($p > 0,05$), the medians in the groups were 57,1 % ($35,4 \div 88,3$) and 58,4 % ($47,6 \div 77,1$), respectively. A statistically significant decrease of splenocytes mitogen-induced proliferation in co-cultures with both MSC 28,8 % ($9,9 \div 47,4$) and BMMC 30,7 % ($3,0 \div 52,8$) was observed. So the suppression coefficients ranged from 8,7 to 94,2. In the control group CS of MSC-induced suppression was 64,9 % and BMMC-induced suppression was 42,5 % ($p > 0,05$). In the experimental group CS of splenocytes ConA-stimulated proliferation in the co-culture with BMMC was 60,3 % ($17,1 \div 89,9$) and did not statistically significantly differ from CS MSC-induced suppression of 55,2 % ($44,5 \div 58,2$).

To conclude, BMMC have an immunosuppressive effect comparable to the effect of mesenchymal stem cells. This suggests the possibility of using BMMC in the treatment of acute inflammatory conditions.

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THE HEALTH OF CHILDREN BORN AS A RESULT OF ASSISTED REPRODUCTIVE TECHNOLOGY

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A research has been made of the causes of infertility of couples and the health of their newborn children. It has been found that the use of Assisted Reproductive Technologies does not always favorably affect newborns.

Keywords: assisted reproductive technologies, in vitro fertilization, intracytoplasmic injection.

Real opportunities to manage the processes of human reproduction with the use of assisted reproductive technologies (ART), which are one of the variants of population reproduction, have appeared [1].

The success of ART methods largely depends not that much on the technical difficulties and thoroughness of performing microsurgical manipulations as on the health of the pregnant woman and the primary causes of infertility, as well as on the number of implanted embryos [2].

In the course of this research, IVF and ICSI programs, the health of couples with infertility, as well as the health of their newborn children have been studied.

It has been found that the risk factors for reproductive health disorders in women are: age, tubular peritoneal factor 20,5 %, endocrine infertility 11,7 %, endometriosis 26,4 %, PCOS 15,7 %.

Infertility factors in men are: oligospermia 20,0 %, asthenospermia 36,0 %, teratospermia 28,0 %, azoospermia 16,0 %.

When studying the state of newborns in the IVF group, it was found that 32,0 % of children had a delay in intrauterine development, 45,0 % had asphyxia, and 3,6 % had developmental abnormalities. The course of the neonatal period was complicated by a post-hypoxic condition of 29,1 % and infectious pathology in 12,0 %.

When studying the state of newborns of the ICSI group, it was found that 35,4 % of children had a delay in intrauterine development, 68,0 % had asphyxia, and 6,4 % had large developmental abnormalities. The course of the neonatal period was complicated by a posthypoxic condition of 22,5 % and infectious pathology in 25,8 %.

A comparative assessment of the state of newborn of ECO and ICSI has revealed that the number of newborn ICSI children with asphyxiation was higher than that of newborn ECO children (68,0 % and 45,4 %, respectively); ($X^2 = 0,0323$, $p < 0,05$ Pirsan correlation analysis with Yates corrections).

The children of the ICSI group have more developmental anomalies than in the IVF group (6,4 % and 3,6 %, respectively); ($X^2 = 0,0211$, $p < 0,05$ Pirsan correlation analysis with Yates correction). Infectious pathology in the neonatal period in children ICSI was diagnosed more often than in children with IVF (25,8 % and 12,0 %, respectively); ($X^2 = 0,0222$, $p < 0,05$, the Pearson correlation analysis with the Yates correction).

Thus, children conceived with IVF and ICSI are at high risk, such as intrauterine growth retardation, asphyxia and neurologic changes. The ICSI children had a higher incidence of abnormal development compared to children of the IVF group and a more intense period of early adaptation due to posthypoxic complications and infectious pathology.

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CONGENITAL SPINAL HERNIAS (SPINA BIFIDA)

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The analysis of the data on the incidence of children's spina bifida in Belarus during 2008–2015 has been carried out. An average of 103,25 cases have been registered, with the population frequency of 0,91 ‰. The efficiency of prenatal diagnostics for the same period is on average 81,75 %.

The concerns of etiology, pathogenesis, diagnostics of spina bifida, as well as statistical documentation on children diagnosed with spina bifida in Belarus have been the object of research.

Keywords: spina bifida, congenital defects, prenatal diagnostics, teratogenic influence.

Spina bifida is a malformation of a spine column, also known as spinal hernia. It belongs to congenital defects of central nervous system. It results from nonclosure of vertebral archs and occasional direct split of corpus vertebrae. Patients diagnosed with spina bifida require surgical treatment almost without exception, therefore it is viewed as a serious congenital anomaly.

Ubiquitous expansion of hereditary pathology has direct influence on case rate indicators, disability and mortality indicators among the population. Specific registers containing studies of incidence and dynamics of congenital defect are created in many countries of the world.

The monitoring of congenital defect is carried out within the Belarusian register of congenital defects operating since 1979. The monitoring system of congenital defects is unique due to coverage breadth of territories under analysis and the number of analyzed births. Aggregation of information about congenital defect cases in Belarus is carried out in accordance with the Resolution of the Ministry of Health of the Republic of Belarus, "On the order of improvement of records of congenital defects (malformations) in children (fetus)" (No. 1172 from 01.11.2010). According to this order all cases of congenital defects registered in children under one year, still-born children, children who died at the age under one year, and at the fetuses aborted according to genetic indications, are subject to registration. Each case of congenital defect is recorded in the notice. The input of information into the computerized database is carried out by the regional principle.

We have carried out the analysis of monitoring data on congenital defects in Belarus from 2008 to 2015. This enabled the definition of incidence and dynamics of spina bifida within the period under study as well study of population incidence of this defect and efficiency of its prenatal diagnostics.

Year-to-year incidence of spina bifida for the period under study has been determined. The comparative analysis of spina bifida incidence in Belarus from year to year for the period under study has been carried out.

826 cases of spina bifida in children during 2008–2015 have been analyzed. Spinal hernias in children averaged at 103,25 cases, thus the population incidence is 0,91 ‰.

The maximum population incidence of spina bifida (the live-born, mortinatus and aborted due to genetic indications cases) registered in 2012 was 1,1 ‰. The smallest spina bifida population rate was registered in 2015 and equals 0,72 ‰.

The efficiency of prenatal diagnostics by calculation of the pregnancies interrupted according to genetic indications from spina bifida made annually equaled 81,75 % which is a high spina bifida detectability rate during the prenatal period.