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EXPERIENCE EXCHANGE

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MEDICAL AND STATISTICAL ASPECTS OF STUDYING THE INCIDENCE OF ABORTION IN THE SAKHA REPUBLIC (YAKUTIA)

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ABSTRACT

The article represents the results of medical and statistical analysis of abortion in the Sakha Republic (Yakutia) for the long-term period (1991–2015). A decrease in the incidence of abortion and transformation of its structure has been noted. The level of abortions due to social indications and registered criminal abortions has decreased the most. An increase in the proportion of spontaneous and unspecified abortions in total ratio of abortion has been found out. The results of the correlation analysis confirm the influence of the women reproductive behavior on demographic processes in the Sakha Republic (Yakutia).

Keywords: abortions, reproductive losses, demographic processes.

Introduction

One of the most important tasks of the Russian Federation State Program "Health Development" is the ensuring of the prevention in the sphere of health care and the development of primary health care for the population. In the subprogram "Mother and Child Welfare" particular attention is paid to prevent and decrease the number of abortions. Priority of ongoing measures is determined by social and demographic processes characterized by stable depopulation, population aging and health deterioration of all population groups [3, 4, 6].

Under modern demographic conditions the problem of demographic losses is very actual because despite its constant downward trend, abortion takes a leading place in realization of women reproductive function and structure of reproductive losses [1, 2, 5]

The aim of the research is medical and statistical analysis of all types of abortions structure and incidence dynamics followed by evaluation of their influence on demographic processes in the Sakha Republic (Yakutia).

Materials and methods

To achieve the aim of the survey retrospective analysis of abortions structure and dynamics of their incidence in the Sakha Republic (Yakutia) for the long-term period (1991-2015) was carried out. Base material was a Form of state federal statistical observation №13 "Information on termination of pregnancy (up to 22 weeks)" (n=25). The indicators of abortions frequency calculated for 1,000 women of fertile age and 100 normal births were analyzed. The indicators of abortions frequency and their dynamics in different reproductive age groups for the given period were analyzed. The dynamics of the abortions level in early and late terms of pregnancy termination was compared. The dynamics of abortions among primigravidae was determined.

To analyze the correlation between reproductive-demographic indicators and abortions Pearson correlation analysis was carried out. The base of the analysis was statistical data of the Territorial body of Federal State Statistics Service in the Sakha Republic (Yakutia) for the period 1990-2015. The strength and direction of the relationship between the variables were estimated. The distribution of quantitative variables was under the normal law (p for the Shapiro-Wilk criterion more than 0.05).

Results and Discussion

The study of reproductive function realization in the Sakha Republic (Yakutia) at 2015 year-end shows 16,379 (59.3%) pregnancies end with childbirth; 11,236 (40.7%) end with abortions. In 2015 the number of abortions for 1,000 women of fertile age was 46.2 (in the Russian Federation – 23.8).

The data on spontaneous, induced and unspecified abortions were analyzed to understand better the nature of pregnancy terminations. As a result, changes in the structure of abortions types were determined (Figure 1).

The percentage of spontaneous abortions increased by 14% over the period under review, the share of unspecified abortions increased by 5.7%, the share of induced abortions decreased by 19.2%. In 2015, 21.0% of the abortion structure were spontaneous, 7.9%, unspecified abortions, 4% - justifiable abortions, and 67.1% legal medical abortions.

The total number of abortions for the period 1991-2015 decreased from 30,062 to 11,236 mainly due to legal medical abortions, number of which decreased by 64.7%.

Analyzing the incidence of abortions according to their types the uneven dynamics of indicators rates attracted attention. The rate of abortions having the greatest medical and social significance - abortions for social indications and registered criminal ones - decreased to the maximum extent.

The incidence rate of justifiable abortions remained stable at 1.8 per 1,000 women of fertile age for the period under review. The number of unspecified abortions increased by 35.8% (Figure 2).

For the period 1991-2015 the prevalence rate of spontaneous abortion as the main indicator of women reproductive health increased from 7.5 to 10.1 per 1,000 women of fertile age (Table 1). The share of spontaneous abortion in 2015 was about 11% of the number of pregnancies ended with childbirth.

Since 2012 in the structure of abortion

terms there was an upward trend in growth of pregnancy terminations from 12 to 21 weeks, the number of abortion up to 12 weeks was stable (Table 2).

The analysis of abortions according to the method of pregnancy termination revealed that the use of the most safe medical method of abortion was still insufficient: 31% from the number of medical (legal) abortions in 2015.

The analysis of abortions according to the age of women could be made only since 1996, because until 1995 in the statistical form №13 20-34 year old women had been united in one group. This group accounted more than 70% of abortions.

In the structure of age groups, the greatest number of terminated pregnancies fell on 20-34 year old women. In 2015 the figure for 1,000 women of the corresponding age was 71.5 (71.6 in 2011). The next positions were taken by the age groups “35+” with the indicator 26.3 in 2015 (23.4 in 2011) and “from 15 to 19 years” (13.0 in 2015, and 16.8 in 2011). In the age group “up to 15 years” the indicator was relatively stable and amounted to 0.2.

Changes in the age structure of abortions corresponded to changes in the age structure of women giving birth (“aging of the age model of fertility”), which quite naturally reflected a single trend in the reproductive and sexual activity of the female population. Among women terminating pregnancy, the proportion of the age group “25-29 years” increased in the structure of abortions (from 22.4 to 28.9%). The age group “30-34 years” (21.1-24.5%) was a “leaders” among women terminating pregnancy, as well as among women in childbirth. The share of the age group “35-39 years” wasn’t changed (15.3-16.6%).

Comparing the age-specific fertility rates (the number of births per 1,000 women of the corresponding age) and the age-related abortion rates (the number of pregnancy terminations per 1,000 women of the corresponding age), it was evident that with the same type of curves women at younger age predominantly gave birth than terminated pregnancy. Up to 34 years the indicator of age-specific fertility rates was significantly higher than the index of age-related abortion rates. The curve of age-related abortion rates was more sloping, shifted to the right along the age axis, that was, at the age of 35 and more, women were more likely to terminate pregnancy than give birth (Figure 3).

In 1991, in the structure of all pregnancies outcomes, the rate of

Fig. 1. Structure of abortions types.

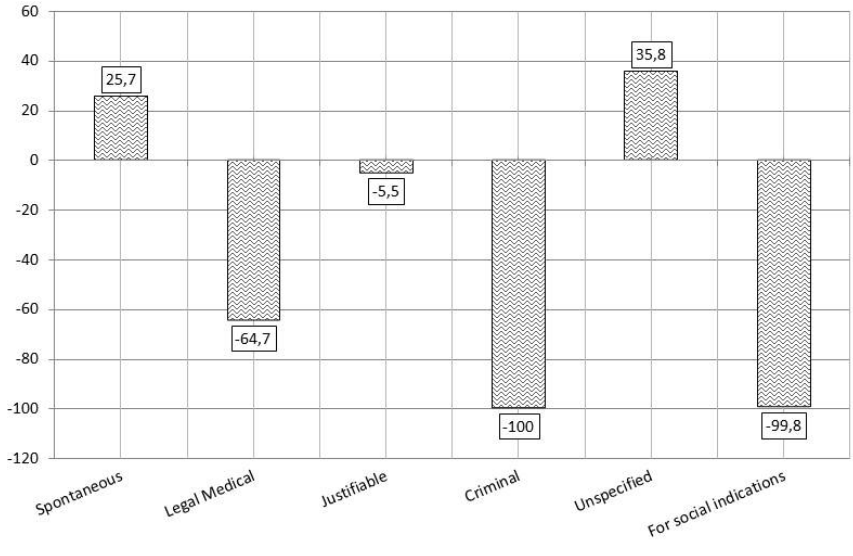

Figure 2. Rate of Growth (Decrease) of abortions for the period 1991-2015.

Table 1

Table 1. Structure of abortions types in dynamics

	1991	1995	2000	2005	2010	2011	2012	2013	2014	2015
Medical										
Per 1,000 women of fertile age	88,0	69,2	60,5	47,9	37,7	35,5	31,7	32,4	31,3	31.0
Per 100 born dead and alive	131,7	124,7	127,9	97,6	67	59,3	52,1	48,8	45,5	45,1
Spontaneous										
Per 1,000 women of fertile age	7,5	2,7	4,6	4,8	5,1	3,8	5,6	9,3	10,1	10,1
Per 100 born dead and alive	11,2	5,0	9,8	9,8	9	6,3	10,4	13,9	14,7	14,2
For social indications										
Per 1,000 women of fertile age	-	-	2,2	0,75	0,55	0,033	0,037	0,01	0,004	0,004
Per 100 born dead and alive			4,6	1,5	1	0,05	0,06	0,02	0,006	0,006
Justifiable										
Per 1,000 women of fertile age	1,9	1,2	1,9	2,0	1,2	1,3	0,5	1,96	1,9	1,8
Per 100 born dead and alive	2,9	2,1	4,2	4,2	2.2	2,2	0,9	2,96	2,8	2,7
Unspecified										
Per 1,000 women of fertile age	2,3	4,5	3,1	2,8	3,5	2,4	3,1	3,7	3,2	3,6
Per 100 born dead and alive	3,4	7,9	6,5	5,7	6,2	4,1	5,1	5,6	4,6	5,3
Criminal										
Per 1,000 women of fertile age	0,4	0,07	0,03	0,003	0,003	0,003	0,003	0,02	0,01	-
Per 100 born dead and alive	0,6	0,12	0,07	0,007	0,006	0,006	0,006	0,02	0,02	-

abortions made by 15-19 year old girls was 45%. The indicator for 1,000 girls of the same age was 52. In 2015 this indicator decreased to 12.7, and abortions made 27% of all pregnancies (Figure 4).

In the correlation analysis it was found out that with the frequency of abortions the coefficients of total fertility and crude birth rate, fecundity rate, the proportion of normal births and the rate of natural increase were negatively correlated. An increase in the total number of abortions was statistically significantly associated with an increase in stillbirth. The indicators of maternal and infant mortality rate, premature birth, hemorrhage in the consecutive and postpartum period positively correlated with the frequency of abortions (Table 3).

Thus, the analysis of the dynamics and structure of officially registered abortions revealed that the observed decrease in the number of abortions was accompanied by the transformation of their structure in the 1990s. The high prevalence of spontaneous abortion (termination of every 10th pregnancy) determined the significance of this pathology in reducing the reproductive potential of the population.

The results of the correlation analysis proved the influence of women reproductive behavior and health on demographic processes in the Sakha Republic (Yakuia).

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Table 2

Table 2. Structure of pregnancy termination terms (%)

Terms of pregnancy termination	1991	1995	2000	2005	2010	2011	2012*	2013	2014	2015
Up to 12 weeks	92,5	93	89,1	94,6	95,2	95,2	95,9	95,2	95,1	95,5
12-21 weeks	5,3	5,2	8,4	3,9	3,1	3,0	4,1	4,8	4,9	4,5
22-27 weeks	2,2	1,8	2,5	1,5	1,7	1,8	-	-	-	-

*In 2012 Ministry of Health and Social Development approved medical criteria for birth registration from 22 weeks and fetal body weight of 500 g (according to perinatal criteria recommended by WHO)

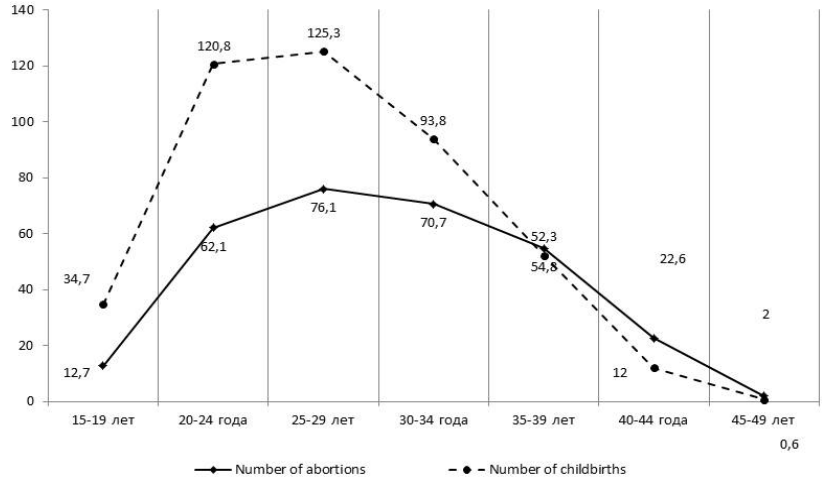

Fig. 3. Correlation of age-specific fertility rate and age-related abortion.

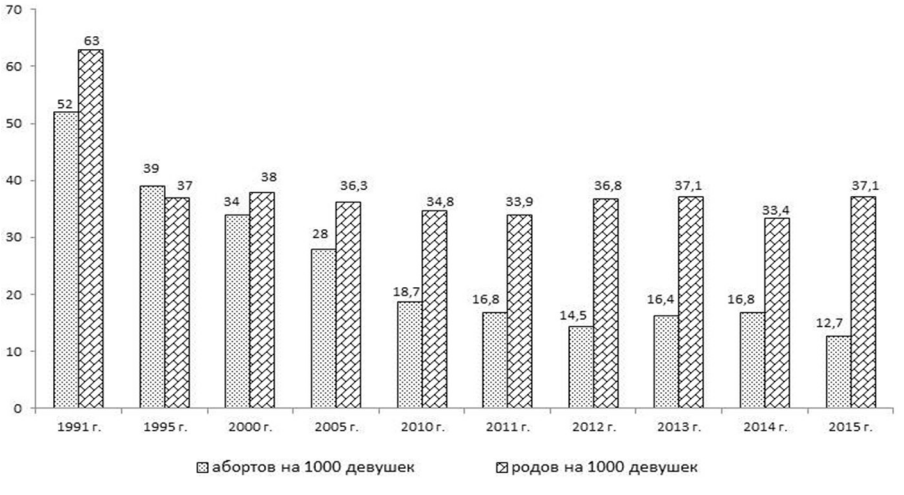

Fig. 4. Correlation of indicators of abortions and childbirths incidence rate among 15-19.

Table 3

Table 3. Correlation coefficients between indicators

indicator	Abortions per 1,000 women of fertile age	
	r	p
Total fertility rate per 1,000 of total population	- 0,816	0,001
Fecundity rate per 1,000 women aged 15-49	- 0,818	0,001
Crude birth rate	- 0,630	0,028
Still-born rate per 1,000 born dead and alive	0,640	0,025
Child mortality rate per 1,000 born alive	0,906	<0,001
Mother mortality rate per 100,000 born alive	0,887	<0,001
Natural increase per 1,000 of population	- 0,838	0,001
The proportion of normal births from the total number of births	- 0,660	0,023

Note: r- Pearson correlation coefficient, p- achieved level of statistical significance

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THE EXPERIENCE OF INTEGRATION OF THE EUROPEAN GUIDELINES ON MANAGEMENT OF MAJOR BLEEDING DURING OPERATIVE DELIVERY AMONG WOMEN WITH PLACENTA PERCRETA

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ABSTRACT

The article reflects the experience of transfusion therapy in major obstetric bleeding during cesarean section among women with placenta percreta from 2016 to 2018. A comparative analysis of the applied blood components and blood products is presented in the article. The analysis has shown that integration of The European guidelines on management of major bleeding allows decreasing the average volume of blood loss, reducing postoperative transfusions, reducing the frequency of postoperative mechanical ventilation, as well as reducing duration of stay in the intensive care unit.

Keywords: massive hemorrhage, obstetrics, infusion-transfusion therapy.

Introduction

Despite the rapid development of medical technologies, maternal mortality around the world remains significantly high. Every day about 830 women die from complications related to pregnancy or childbirth [2]. According to the World Health Organization, in 2015, approximately 303,000 women died during and after pregnancy and childbirth [3].

Women die in a result of complications during and after pregnancy and childbirth. Most of these complications are preventable. The main complication leading to maternal mortality is major bleeding [4]. One of the main risk factors for major bleeding is placenta percreta [1].

Major bleeding is often impossible to predict, and often impossible to control, therefore infusion-transfusion therapy in major bleeding is essentially important and it determines the success of treatment of patients with placenta percreta.

Purpose of the research

Reducing the number of complications related to infusion-transfusion therapy in major bleeding among women with placenta percreta during cesarean section.

Materials and methods

During the period from 2016 to 2018, 27 patients with placenta percreta (9 patients per year) were operated in Khabarovsk, KGBUZ Perinatal Center. The caesarean section was performed at 37 weeks gestation. All patients underwent total hysterectomy. During the operation, all patients underwent general combined anesthesia with intubation of the trachea and mechanical ventilation. The operations among all patients were followed with major obstetric bleeding, more than 40% of the total blood volume (TBV).

Complex of preoperative checkup included general clinical tests, ultrasound examination of the uterus, MRI of the uterus, specialists examination. Complex of preoperative patient preparation included: among women with iron deficiency anemia - parenteral iron injections. In the absence of contraindications, the preparation of frozen autoplasma was done.

During the operation, if there were no contraindications, all patients underwent a reinfusion of auto-red blood cells.

Infusion-transfusion therapy changes every year. In 2018, transfusion therapy was applied according to the European guidelines for major bleeding [5]. The basis of the infusion- transfusion tactics was:

1. Providing transfusion in a restrictive mode - balanced crystalloids in the volume up to 2000 - 2400 ml;
2. Before the achievement of surgical hemostasis, using the concept of acceptable hypotension with a target level of systolic blood pressure 80-90 mm Hg, with correction of hypotension (in case of its development) by early use of noradrenaline;
3. Preventive transfusion of red blood cells components (starting from the moment when placenta percreta was confirmed intraoperative);
4. Targeted use of moderate doses of fresh frozen plasma (FFP} in combination with cryoprecipitate as a source of fibrinogen;