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AGE AS A SOCIO-BIOLOGICAL COMPONENT OF PERINATAL RISK IN PATIENTS OF THE PREGNANCY PATHOLOGY DEPARTMENT WHO OVERCAME INFERTILITY USING ART

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ABSTRACT. In order to assess medical and social characteristics, information was copied out from registration forms N 003/y for 820 patients in the pregnancy pathology department who had overcome infertility with the help of assisted reproductive technologies (ART). It was found that among patients the proportion of women of late reproductive age was 2.1 times higher than that of early reproductive age, and the proportion of female infertility was 77.5%. In patients of late reproductive age, not only the age at which infertility was diagnosed was significantly higher (32.50±0.21 years 26.96±0.20 years, respectively), but also the average time required to achieve a positive result of infertility treatment using ART (7.01±0.08 years and 4.74±0.07 years). Despite the fact that the majority of patients were diagnosed with female infertility in the age range of 30–34 years (37.5%), and the diagnosis of female infertility associated with male factors was made at the age of 35–39 years (32.0%), there is no statistically significant difference between the average age of diagnosis of female and male infertility (30.71±0.22 years and 30.65±0.31 years) or in the ratio of female and male infertility within each age group. In patients 35 years of age and older, there was a significantly higher proportion of women whose pregnancy occurred after the fourth or more in vitro fertilization (IVF) cycle (21.6% versus 15.1%), for whom it was the third or more pregnancy (32.8% versus 22. 9%), as well as the second or more births (29.5% versus 9.8%; $p<0.05$). Women of late reproductive age had 1.6 times fewer medical abortions, spontaneous abortions, and negative perinatal outcomes compared to younger patients (62.2% versus 38.0%; $p<0.05$). Among patients in the older age group, complications caused by Covid or ARVI diseases were much less common while polyhydramnios, venous complications, as well as pregnancy complications associated with disturbances in the hemostatic system and uterine fibroids were more often observed. The study showed the absence of statistically significant differences in the structure of the main diagnoses upon admission to the pregnancy pathology department depending on the age of this group of patients. Thus, despite the fact that age, as a socio-biological factor of perinatal risk, has a significant impact on certain parameters of medical, social and clinical-statistical characteristics, for patients who have overcome infertility with the help of ART, this factor is not always decisive and, above all, it is necessary to take into account the woman's health status.

KEYWORDS: assisted reproductive technologies, infertility, Department of Pregnancy Pathology, medical and social characteristics

ВОЗРАСТ КАК СОЦИАЛЬНО-БИОЛОГИЧЕСКИЙ КОМПОНЕНТ ПЕРИНАТАЛЬНОГО РИСКА У ПАЦИЕНТОК ОТДЕЛЕНИЯ ПАТОЛОГИИ БЕРЕМЕННОСТИ, ПРЕОДОЛЕВШИХ БЕСПЛОДИЕ С ПОМОЩЬЮ ВРТ

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РЕЗЮМЕ. С целью оценки медико-социальной характеристики была проведена выкопировка сведений из учетных форм № 003/у на 820 пациенток отделения патологии беременности, преодолевших бесплодие с помощью вспомогательных репродуктивных технологий (ВРТ). Установлено, что среди пациенток доля женщин позднего репродуктивного возраста была в 2,1 раза выше, чем раннего, а доля женского бесплодия составила 77,5%. У пациенток позднего репродуктивного возраста был достоверно выше не только возраст постановки диагноза бесплодия (32,50±0,21 года и 26,96±0,20 года соответственно), но и средний срок, необходимый для достижения положительного результата лечения бесплодия с применением ВРТ (7,01±0,08 года и 4,74±0,07 года). Несмотря на то что у большинства пациенток диагноз «женское бесплодие» был поставлен в возрастном интервале 30–34 года (37,5%), а диагноз «женское бесплодие, связанное с мужскими факторами» — в возрасте 35–39 лет (32,0%), статистически достоверная разница отсутствует как между средним возрастом постановки женского и мужского бесплодия (30,71±0,22 года и 30,65±0,31 года), так и в соотношении женского и мужского бесплодия внутри каждой возрастной группы. У пациенток 35 лет и старше был достоверно выше удельный вес женщин, беременность которых наступила с четвертого и более цикла экстракорпорального оплодотворения (ЭКО) (21,6% против 15,1%), у которых это была третья беременность и более (32,8% против 22,9%), а также вторые роды и более (29,5% против 9,8%; $p<0,05$). У женщин позднего репродуктивного возраста было в 1,6 раза меньше абортов по медицинским показаниям, самопроизвольных абортов и негативных перинатальных исходов, чем у более молодых пациенток (38,0% против 62,2%; $p<0,05$). Среди пациенток старшей возрастной группы значительно реже встречались осложнения, обусловленные заболеваниями Ковид или ОРВИ, и чаще наблюдалось многоводие, венозные осложнения, а также осложнения беременности, связанные с нарушениями в системе гемостаза и миомой матки. Исследование показало отсутствие статистически значимых различий в структуре основных диагнозов при поступлении в отделение патологии беременности в зависимости от возраста у данного контингента пациенток. Таким образом, несмотря на то что возраст как социально-биологический фактор перинатального риска оказывает значимое влияние на отдельные параметры медико-социальной и клинико-статистической характеристики, для пациенток, преодолевших бесплодие с помощью ВРТ, данный фактор не всегда является определяющим, и прежде всего необходимо учитывать состояние здоровья женщины.

КЛЮЧЕВЫЕ СЛОВА: вспомогательные репродуктивные технологии, бесплодие, отделение патологии беременности, медико-социальная характеристика

INTRODUCTION

Negative trends in the demographic situation in Russia, observed in recent years, are largely determined by problems of reproduction [1]. The decline in a birth rate, which has been observed in our country since 2016, has a significant regional variability and directly depends on the climatic and geographical location of the territory, as well as the level of socio-economic well-being of the population living there [2, 3]. The Northwestern Federal District (NWFD) is among the federal districts with the lowest birth rate in Russia. The phenomenon of depopulation is becoming critical in the NWFD.

St. Petersburg, which is a separate constituent entity of the Russian Federation, is the largest contributor to the birth rate in the federal district. 50,437 children were born alive in the metropolis in 2022, which is 21.2% less than five years earlier, in 2018. At the same time, the number of births has been annually decreasing throughout the period from 2018 to 2022. The dynamics of the share of children born alive in St. Petersburg was assessed. Indicators in the total number of children born alive in the NWFD in 2018–2022 ranged from 44.0% in 2018 to 44.5% in 2022 (Fig. 1). Thereby it proves that the city greatly influences on the demographic situation in the whole federal district.

Nowadays, fighting for the life and health of each child becomes especially important under conditions of low birth rate [4]. Therefore, searching for a reserve to increase the birth rate in the country is particularly important [5, 6]. One of these reserves is assisted reproductive technologies (ART) [7, 8]. More than ten methods of ART are used in modern medical practice: in vitro fertilization (IVF), intracytoplasmic sperm injection (ICSI), surrogate motherhood, reproductive donation, cryopreservation, etc. [9, 10]. However, the most common method is IVF.

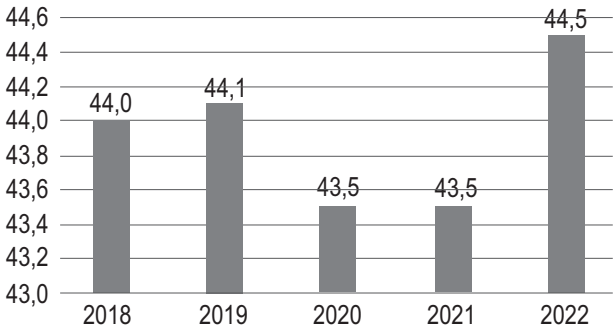

Fig. 1. Dynamics of the proportion of children born alive in St. Petersburg in the total number of live births in the Northwestern Federal District in 2018–2022 (in %)

Рис. 1. Динамика удельного веса детей, родившихся живыми в Санкт-Петербурге, в общем числе родившихся живыми в СЗФО в 2018–2022 годы (в %)

A significant number of St. Petersburg children born using IVF are born in perinatal centers of the city [11]. A lot of reasons contribute to this phenomenon, including maternal health and an obstetric history, which are largely related to the older age category of these women [12]. In addition, it is necessary to take into account subjective reasons due to special care for this category of pregnant women, laboring and delivery women [13]. Therefore, a significant number of pregnant women conceived with the help of ART are admitted for observation and treatment to the pregnancy pathology departments of perinatal centers [14, 15]. Thus, considering the role of such departments in providing medical care to women during pregnancy, age assessment as a factor of perinatal risk in patients of the pregnancy pathology department who overcame infertility with the help of ART is a relevant topic for research.

AIM

The aim of the research is to identify the way age effects on medical, social, clinical and statistical characteristics in patients of the Department of Pregnancy Pathology who overcame infertility by means of ART.

MATERIALS AND METHODS

This research was conducted at the Department of Pregnancy Pathology of the Perinatal Center of the Federal State Budgetary Educational Institution of Higher Professional Education “St. Petersburg State Pediatric Medical University” of the Ministry of Health of Russia, which belongs to the third-level obstetric hospitals. A special form “Card of medical and social examination of women suffering from infertility” was developed to assess characteristics of patients in the pregnancy pathology department who overcame infertility with the help of ART. Information from 820 record forms No. 003/u

"Medical card of a patient receiving medical care in inpatient conditions, in day care" was copied; these forms referred to patients of the pregnancy pathology department whose hospitalization ended with childbirth in the perinatal center of St. Petersburg State Pediatric Medical University in 2018–2024. Women permanently residing in St. Petersburg were selected for the study. All patients included in the sample underwent IVF.

In order to assess medical and social characteristics of the patients, all pregnant women were divided according to their age into patients of early (up to 35 years old) and late (35 years and older) reproductive age. Patients aged 50 years and older were categorized into the older age group — late reproductive age. All perinatal risk factors were evaluated according to the above-mentioned age groups, since pregnant woman older than 35 years are referred to higher social and biological risk factors according to the modern perinatal risk scale [13]. In addition to individual indicators of medical and social characteristics, the study assessed pregnancy complications and the structure of diagnoses at admission to the Department of Pregnancy Pathology of the Perinatal Center of St. Petersburg State Medical University [16]. A visibility index between the studied risk factors was calculated by assessing deviation of frequency of these factors in women of late reproductive age compared to women of early reproductive age.

Extensive indices, arithmetic weighted mean and its error were calculated. Obtained indicators were compared with official statistics. Significance of differences was assessed using Student's t-criterion. Differences were considered significant at $p < 0.05$. Statistical processing of data was performed using MS Office 2016 and STATISTICA 10.0 (StatSoft) software packages.

RESULTS AND DISCUSSION

Women in the age group 35–39 years constituted the largest proportion of the patients of the Department of Pregnancy Pathology who overcame infertility with the help of ART, 41.0% of them (Fig. 2). Women aged 40 years and older accounted for 26.9%, including 2.2% of women older than 50 years. Accordingly, the proportion of women of late reproductive age was 67.8% and early reproductive age 32.2% ($p < 0.05$).

Mean age of women in the early reproductive age group was 31.7±0.17 years (Table 1), while the mean age of women in the late reproductive age group was 39.51±0.17 years. Patients of late reproductive age were diagnosed with infertility at 32.50±0.21 years, which was significantly higher than the age of diagnosis in younger patients — 26.96±0.20 years ($p < 0.05$).

According to clinical guidelines, women under 35 years of age should start infertility treatment with ART one year after the absence of pregnancy in case there was no fertility limitations, and women older than 35 years of age — in six months [9]. Women in the early reproductive age group were diagnosed with infertility on average 4.74±0.07 years before a positive outcome and 7.01±0.08 years in the late group of pregnant women ($p < 0.05$).

The research showed that the proportion of patients suffering from female infertility was significantly higher than the proportion of patients whose infertility was due to male factors (77.5% vs. 22.5%; $p < 0.05$) (hereinafter referred to as male infertility). Most patients were diagnosed with female infertility between 30 and 34 years (37.5%). Male infertility was most often diagnosed at the age of 35–39 years (32.0%). The mean age of female infertility was 30.71±0.22 years and male infertility was 30.65±0.31 years ($p > 0.05$). It was found that

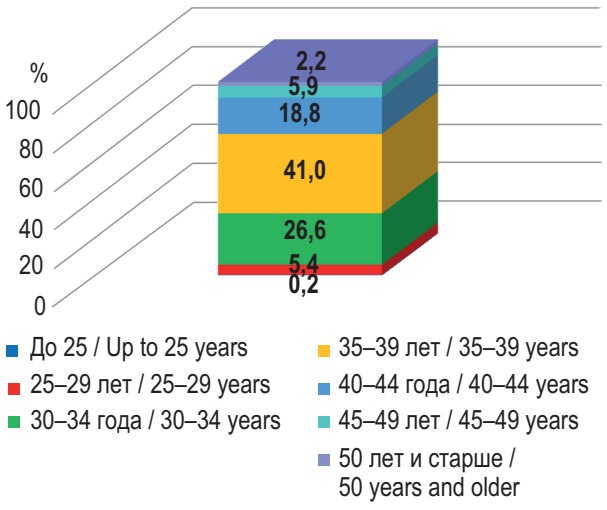

Fig. 2. Distribution of patients by age (% of total)

Рис. 2. Распределение пациенток по возрасту (в % к итогу)

Table 1

Average age and age at diagnosis of infertility in groups of patients of early and late reproductive age

Таблица 1

Средний возраст и возраст постановки диагноза «бесплодие» в группах пациенток раннего и позднего репродуктивного возраста

Показатель / Index	Возраст / Age		Возраст постановки диагноза «бесплодие» / Age at diagnosis of infertility	
	Ранний репродуктивный возраст / Early reproductive age	Поздний репродуктивный возраст / Late reproductive age	Ранний репродуктивный возраст / Early reproductive age	Поздний репродуктивный возраст / Late reproductive age
Среднее значение / Average value	31,70	39,51	26,96	32,50
Стандартная ошибка / Standard error	0,15	0,17	0,20	0,21
Стандартное отклонение / Standard deviation	2,43	4,02	3,19	4,85
Дисперсия выборки / Sample variance	5,92	16,16	10,20	23,49
Минимум / Minimum	24	35	18	17
Максимум / Maximum	34	54	33	48

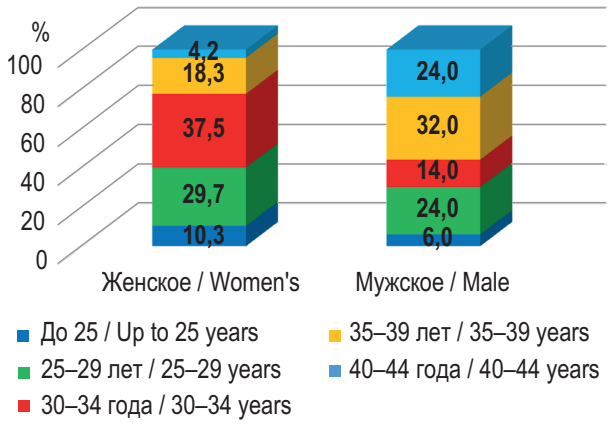

Fig 3. Distribution of patients by age of diagnosis of female and male infertility (in % of total)

Рис 3. Распределение пациенток по возрасту постановки диагнозов женское и мужское бесплодие (в % к итогу)

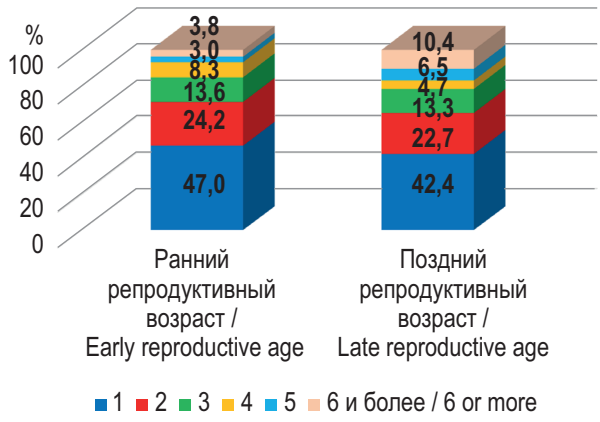

Fig. 4. Distribution of patients by number of births depending on age (% of total)

Рис. 4 Распределение пациенток по количеству процедур ЭКО в зависимости от возраста (в % к итогу)

the ratio of female to male infertility in women of early and late reproductive age had no statistically significant difference ($p < 0.05$). The distribution of patients by age of diagnosis of female and male infertility is presented in Figure 3.

Assessment of IVF infertility treatment distribution by the number of IVF procedures revealed that 47.0% of women of early reproductive age and 42.4% of women of late reproductive age became pregnant at the first attempt ($p > 0.05$). Moreover, in patients aged 35 years and older and patients under 35 years of age, there were no significant differences in pregnancy on the second (22.7% and 24.2%, respectively) and third (13.3% and 13.6%) IVF procedures between the groups ($p > 0.05$). It was revealed that the older reproductive group had a significantly higher proportion of women who became pregnant from the fourth IVF cycle or more (21.6% vs. 15.1%; $p < 0.05$) compared to younger patients. The distribution of patients by the number of IVF procedures depending on their age is shown in Figure 4.

The research showed that the majority of patients of both early and late reproductive age experienced their first pregnancy (Fig. 5). At the same time, the proportion of women with one or two pregnancies was significantly higher in the group of pregnant women under 35 years of age

(87.1% vs. 67.2%; p <0.05), and in the group 35 years and older, patients with a third pregnancy or more were statistically significantly more prevalent (32.8% vs. 22.9%; p <0.05).

The distribution of patients by the number of births depending on age was analyzed as well (Fig. 6). Patients of late reproductive age appeared to have significantly less frequent first births (70.5% vs. 90.2%; p <0.05) and more frequent second births or more (29.5% vs. 9.8%; p <0.05) compared to patients of early reproductive age.

On average, patients of late reproductive age had significantly higher (p <0.05) number of IVF procedures (2.68±0.10 vs. 2.08±0.08, respectively), pregnancies (2.22±0.05 vs. 1.60±0.06), and deliveries (1.35±0.03 vs. 1.14±0.03) compared to younger pregnant women. The average number of pregnancies, deliveries and IVF attempts in the groups of patients of early and late reproductive age is presented in Table 2.

At the same time, it was found that women of late reproductive age had significantly fewer

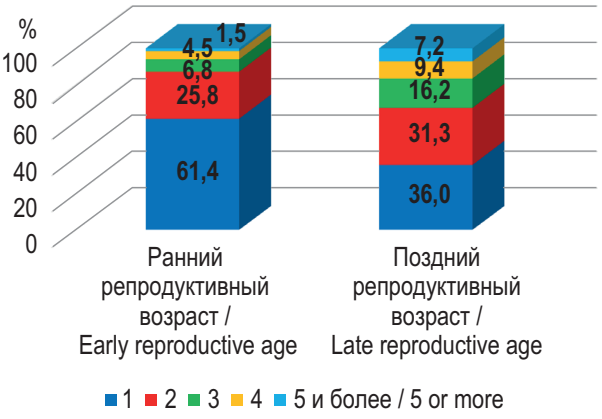

Fig. 5. Distribution of patients by number of pregnancies depending on age (% of the total)

Рис. 5. Распределение пациенток по количеству беременностей в зависимости от возраста (в % к итогу)

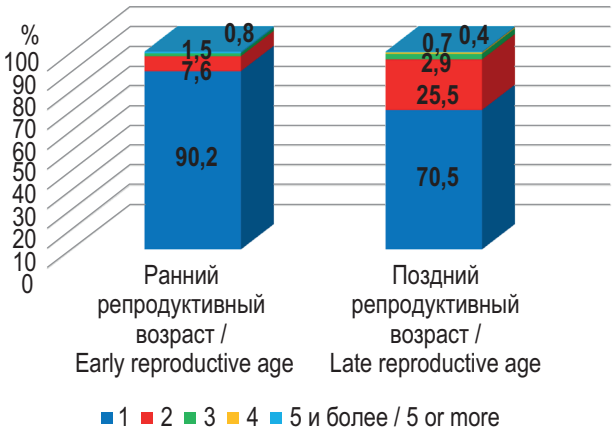

Fig. 6. Distribution of patients by number of births depending on age (% of total)

Рис. 6. Распределение пациенток по количеству родов в зависимости от возраста (в % к итогу)

Table 2

Average number of pregnancies, births and IVF attempts in groups of patients of early and late reproductive age

Таблица 2

Среднее количество беременностей, родов и попыток ЭКО в группах пациенток раннего и позднего репродуктивного возраста

Показатель / Index	Количество ЭКО / Number of IVF		Беременность / Pregnancy		Роды / Childbirth	
	Ранний репродуктивный возраст / Early reproductive age	Поздний репродуктивный возраст / Late reproductive age	Ранний репродуктивный возраст / Early reproductive age	Поздний репродуктивный возраст / Late reproductive age	Ранний репродуктивный возраст / Early reproductive age	Поздний репродуктивный возраст / Late reproductive age
Среднее значение / Average value	2,08	2,68	1,60	2,22	1,14	1,35
Стандартная ошибка / Standard error	0,08	0,10	0,06	0,05	0,03	0,03
Стандартное отклонение / Standard deviation	1,35	2,48	0,95	1,28	0,49	0,61
Дисперсия выборки / Sample variance	1,82	6,13	0,90	1,63	0,24	0,37
Минимум / Minimum	1	1	1	1	1	1
Максимум / Maximum	6	18	6	7	5	5

abortions and negative outcomes in their history than patients under 35 years of age (50.4% vs. 68.9%; p <0.05), although the proportion of abortions on women's request was higher (12.4% vs. 6.7%; p <0.05). Accordingly, the proportion of medically indicated abortions, spontaneous abortions, and negative perinatal outcomes was 1.6 times higher in younger patients (62.2% vs. 38.0%; p <0.05).

The majority of patients who overcame infertility with the help of ART in the Department of Pregnancy Pathology of the Perinatal Center received medical care paid for by the compulsory health insurance fund (92.4%), and it was significantly lower in patients under 35 years of age than in women 35 years and older (87.9% vs. 94.2%; p <0.05). Accordingly, among patients of late reproductive age, the proportion of those who received medical care within the framework of voluntary medical insurance (VMI) and from personal funds was 4.6 times lower than among patients of early reproductive age (5.8% vs. 26.5%; p <0.05).

Distribution of patients by marital status according to age revealed significant differences between the ratio of married and unmarried patients. There were fewer married women (92.1% vs. 97.7%; p <0.05) and more unmarried women (7.9% vs. 2.3%; p <0.05) among patients of late reproductive age compared to pregnant women of early reproductive age.

It was established (Table 3) that patients of late reproductive age had significantly fewer complications due to Covid's disease or acute respiratory

Table 3

Frequency of complications of pregnancy and childbirth in patients of the pregnancy pathology department depending on age (per 100 hospitalized)

Таблица 3

Частота осложнений беременности и родов у пациенток отделения патологии беременности в зависимости от возраста (на 100 госпитализированных)

Заболевание или патологическое состояние / Disease or pathological condition [14]	**Ранний репродуктивный возраст / Early reproductive age**	**Поздний репродуктивный возраст / Late reproductive age**	**Показатель наглядности / Visibility Score**	T
Миопия / Myopia (O99.8)	43,18±3,05	39,57±2,08	–8,4	0,95
Анемия / Anemia (O99)	36,36±2,97	39,93±2,08	9,8	0,98
Гестационный сахарный диабет / Gestational diabetes mellitus (O24)	27,27±2,75	32,01±1,98	17,4	1,40
Ковид или острые респираторные вирусные инфекции / Covid or acute respiratory viral infections (O98)	54,55±3,07	19,78±1,69	–63,7	9,92*
Преэклампсия средней тяжести и тяжелая / Moderate to severe preeclampsia (O14)	21,21±2,52	26,98±1,88	27,2	1,83
Заболевания щитовидной железы / Thyroid diseases (E00-E07)	31,06±2,85	37,41±2,05	20,4	1,81
Заболевания мочеполовой системы / Diseases of the genitourinary system (O23)	24,24±2,64	27,34±1,89	12,8	0,95
Истмико-цервикальная недостаточность / Isthmic-cervical insufficiency (O34.4)	13,64±2,12	13,67±1,46	0,2	0,01
Маловодие / Malovodie (O41)	5,30±1,38	5,04±0,93	–5,0	0,16
Многоводие / Polyhydramnios (O40)	1,52±0,75	4,68±0,90	208,6	2,29*
Венозные осложнения / Venous complications (O22)	18,18±2,38	26,26±1,87	44,4	2,27*
Нарушение в системе гемостаза / Disturbance in the hemostasis system (O99.1)	12,12±2,01	21,22±1,74	75,1	3,42*
Патология плаценты / Pathology of the placenta (O44)	17,42±2,34	19,06±1,67	9,4	0,57
Миома матки / Uterine fibroids (O34.1)	6,82±1,55	21,94±1,76	221,8	6,45*
Прочие заболевания / Other diseases	52,27±3,08	49,28±2,12	–5,7	0,60

* Статистически достоверная разница между группами (p<0,05). / Statistically significant difference between groups (p<0.05).

Table 4

Structure of diagnoses upon admission of patients to the pregnancy pathology department depending on age (%)

Таблица 4

Структура диагнозов при поступлении пациенток в отделения патологии беременности в зависимости от возраста (%)

Диагноз при поступлении / Diagnosis on admission	Ранний репродуктивный возраст / Early reproductive age	Поздний репродуктивный возраст / Late reproductive age	Показатель наглядности / Visibility Score	T
Кесарево сечение / Cesarean sectio (O82, O84.2)	43,2 ± 3,05	49,6 ± 2,12	15,0	1,73
в том числе кесарево сечение экстренное / including emergency caesarean section	9,8 ± 1,84	7,2 ± 1,10	–27,0	1,24
Преждевременные роды / Premature birth (O60)	13,6 ± 2,12	15,8 ± 1,55	16,1	0,93
Преэклампсия средней тяжести и тяжелая / Moderate to severe preeclampsia (O14)	9,1 ± 1,77	9,4 ± 1,24	2,9	0,12
Срочные роды / Urgent birth (O80)	12,9 ± 2,07	11,2 ± 1,34	–13,4	0,70
Истмико-цервикальная недостаточность / Isthmic-cervical insufficiency (O34.4)	2,3 ± 0,92	3,2 ± 0,75	42,4	0,81
Плацентарная недостаточность / Placental insufficiency (O43)	3,8 ± 1,18	2,5 ± 0,67	–33,5	0,94
Преждевременное излитие околоплодных вод / Premature rupture of amniotic fluid (O42)	3,0 ± 1,06	1,4 ± 0,51	–52,5	1,36
Предлежание плаценты без кровотечения / Placenta previa without bleeding (O44)	1,5 ± 0,75	1,1 ± 0,44	–28,8	0,50
Ложные схватки / False contractions (O47)	2,3 ± 0,92	0,4 ± 0,25	–84,2	2,0*
Вакуум-экстракция плода / Vacuum extraction of the fruit (O81)	1,5 ± 0,75	0,7 ± 0,36	–52,5	0,95
Прочие / Others	6,8 ± 1,55	4,7 ± 0,90	–31,4	1,19

* Статистически достоверная разница между группами ($p < 0,05$). / Statistically significant difference between groups ($p < 0.05$).

infections ($p < 0.05$). At the same time, patients in this age group were more likely to have gynecological and venous complications, as well as pregnancy complications related to disorders in the hemostasis system and uterine myoma ($p < 0.05$). The research demonstrated that there was no statistically significant difference between the incidence of myopia, anemia, gestational diabetes mellitus, preeclampsia, placental pathology, low water supply, thyroid and genitourinary diseases in patients of early and late reproductive age ($p > 0.05$).

At the same time, no statistically significant differences were found between the proportion of cesarean section, preterm labor, moderate and severe preeclampsia, term labor, placental and isthmic-cervical insufficiency, premature amniotic fluid shedding, placenta previa without bleeding, and vacuum extraction of the fetus ($p > 0.05$) (Table 4). However, only the proportion of false contractions in women of late reproductive age was statistically significantly lower than in younger patients ($p < 0.05$).

CONCLUSIONS

1. The proportion of women of late reproductive age was 2.1 times higher in pregnancy pathology department, and the proportion of female infertility amounted to 77.5%.

2. Patients of late reproductive age had a significantly higher age of diagnosis of infertility (32.50±0.21 years and 26.96±0.20 years, respectively), as well as the average time required to achieve a positive result of infertility treatment using ART (7.01±0.08 years and 4.74±0.07 years).

3. Despite the fact that the majority of patients were diagnosed with female infertility in the age range of 30–34 years (37.5%) and female infertility associated with male factors was diagnosed at the age of 35–39 years (32.0%), there was no statistically significant difference both between the mean age of diagnosis of female and male infertility (30.71±0.22 years and 30.65±0.31 years) and

in the ratio of female to male infertility within each age group.

4. Regardless of age, most of the patients became pregnant with their first IVF attempt, it was their first pregnancy and first delivery. However, the proportion of women who became pregnant on their fourth IVF cycle or more (21.6% vs. 15.1%), their third pregnancy or more (32.8% vs. 22.9%), and their second birth or more (29.5% vs. 9.8%; $p < 0.05$) was significantly higher in patients 35 years and older.

5. On average, patients of late reproductive age had significantly more IVF procedures (2.68±0.10 vs. 2.08±0.08, respectively), pregnancies (2.22±0.05 vs. 1.60±0.06), and deliveries (1.35±0.03 vs. 1.14±0.03) compared to younger pregnant women.

6. Women of late reproductive age had 1.6 times fewer medically indicated abortions, spontaneous abortions, and negative perinatal outcomes than younger patients (62.2% vs. 38.0%; $p < 0.05$).

7. Among patients of late reproductive age, the proportion of women who received medical care under VMI and from personal funds was 4.6 times lower, and the proportion of unmarried women was 3.4 times higher than among patients of early reproductive age.

8. Patients of late reproductive age had significantly less frequent complications due to Covid's disease or acute respiratory viral infections and more frequent gynecological, venous complications, as well as pregnancy complications related to disorders in the hemostasis system and uterine myoma. At the same time, there was no significant difference in the incidence of myopia, anemia, gestational diabetes mellitus, pre-eclampsia, placental pathology, low water supply, thyroid and genitourinary diseases.

9. Besides the specific weight of false labor, the proportion of which was higher in pregnant women under 35 years of age, statistically significant differences depending on age in the structure of the main diagnoses at the admission of patients who overcame infertility with the help of ART to the department of pregnancy pathology were not established.

Hence, in spite of the fact that age, being a social and biological factor of perinatal risk, has a significant impact on some parameters of medical and social clinical and statistical characteristics, the study showed that, first of all, it is necessary to take into account a woman's state of health.

ADDITIONAL INFORMATION

Author contribution. Thereby, all authors made a substantial contribution to the conception of the study, acquisition, analysis, interpretation of data for the work, drafting and revising the article, final approval of the version to be published and agree to be accountable for all aspects of the study.

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Вклад авторов. Все авторы внесли существенный вклад в разработку концепции, проведение исследования и подготовку статьи, прочли и одобрили финальную версию перед публикацией.

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