

UDC 618.12

<https://doi.org/10.33619/2414-2948/42/06>

## PROBLEM TUBOPERITONEAL INFERTILITY IN WOMEN OF REPRODUCTIVE AGE

©*Abramova S., M.D., Ogarev Mordovia State University,  
Saransk, Russia, elasv@yandex.ru*

©*Zaidulina L., Ogarev Mordovia State University, Saransk, Russia, Zajdulka@mail.ru*

©*Grachev D., Ogarev Mordovia State University,  
Saransk, Russia, misterussia@gmail.com*

©*Iseev D., Ogarev Mordovia State University, Saransk, Russia, vremmol@gmail.com*

©*Syatkina I., Ogarev Mordovia State University, Saransk, Russia, syatkinaira@mail.ru*

## ПРОБЛЕМА ТРУБНО-ПЕРИТОНЕАЛЬНОГО БЕСПЛОДИЯ У ЖЕНЩИН РЕПРОДУКТИВНОГО ВОЗРАСТА

©*Абрамова С. В., канд. мед. наук, Национальный исследовательский Мордовский  
государственный университет им. Н.П. Огарева, г. Саранск, Россия, elasv@yandex.ru*

©*Зайдулина Л. И., Национальный исследовательский Мордовский государственный  
университет им. Н.П. Огарева, г. Саранск, Россия, Zajdulka@mail.ru*

©*Грачев Д. С., Национальный исследовательский Мордовский государственный  
университет им. Н.П. Огарева, г. Саранск, Россия, misterussia@gmail.com*

©*Исеев Д. Б., Национальный исследовательский Мордовский государственный  
университет им. Н.П. Огарева, г. Саранск, Россия, vremmol@gmail.com*

©*Сяткина И. С., Национальный исследовательский Мордовский государственный  
университет им. Н.П. Огарева, г. Саранск, Россия, syatkinaira@mail.ru*

*Abstract.* Family health is an indicator reflecting the health status of the population. According to world statistics around the world about 15% of couples suffer from infertility. The proportion of infertile couples in the Russian Federation varies from 8 to 21%, while more than 55% of cases of infertility are due to impaired reproductive function. Inflammation of the fallopian tubes is one of the main causes of infertility. According to many authors in the Russian Federation, in groups of women up to 38 years old, inflammatory diseases of the pelvic organs occur from 20% to 50%. As a result of the development of damage to the fallopian tubes, the risk of developing tuboperitoneal infertility is high. According to statistics, every fifth woman has chronic inflammations, while 75% of them have adhesions in the small pelvis, in which the fallopian tubes are affected, not even having surgical treatment. All the above facts make the problems of tuboperitoneal infertility extremely low. This article presents the results of a clinical-factor analysis of tuboperitoneal infertility in women of reproductive age. Considered in detail the main factors that ensure the effectiveness and efficiency of the treatment in accordance with the algorithms of therapeutic and diagnostic tactics.

*Аннотация.* Здоровье семьи — индикатор, отражающий состояние здоровья населения, и в то же время является одним из основных показателей для оценки социальных и демографических проблем. По данным мировой статистики во всем мире около 15% пар страдают бесплодием. Доля бесплодных супружеских пар в Российской Федерации варьирует от 8% до 21%, в то время как более 55% случаев бесплодия обусловлены нарушением репродуктивной функции. Воспаление маточных труб является одной из основных причин бесплодия. По мнению многих авторов в Российской Федерации, в группах работающих женщин до 38 лет воспалительные заболевания органов малого таза встречаются от 20% до

50%. При воспалительном процессе, в результате которого происходит поражение маточных труб, риск развития трубно–перитонеального бесплодия высок. Согласно статистике, у каждой пятой женщины с хроническим воспалением придатков в анамнезе выявляется бесплодие, при этом у 75% из них имеются спайки в малом тазу, при которых поражение маточных труб необратимо даже с помощью хирургического лечения. Все указанные выше факты делают проблемы трубно–перитонеального бесплодия крайне актуальной. В данной статье приведены результаты клинико–факторного анализа трубно–перитонеального бесплодия у женщин репродуктивного возраста. Подробно рассмотрены основные факторы, приводящие к трубно–перитонеальному бесплодию, разработаны алгоритмы лечебно–диагностической тактики, позволяющие повысить эффективность от проводимого лечения.

*Keywords:* tuboperitoneal infertility.

*Ключевые слова:* трубно-перитонеальное бесплодие.

A healthy family is an indicator that objectively shows the state of health of the population, and at the same time is one of the main indicators for assessing social and demographic problems [1, p. 15]. The demographic situation in the Russian Federation sets a task for the state and society to pay close attention to the realization of the reproductive function of every woman who wants to give birth to a child [3, p. 39].

According to statistics all over the world, about 15% of couples suffer from infertility [4, p. 617]. In the Russian Federation, from 8 to 21% of married couples are infertile, while more than 55% of cases of infertility are due to impaired reproductive function [5, p. 123].

Inflammation of the fallopian tubes is one of the leading causes of infertility [6, p. 180]. According to many authors in the Russian Federation, in groups of working women up to 38 years old, inflammatory diseases of the pelvic organs occur from 20% to 50% [7, p. 115]. In the inflammatory process, as a result of which there is a defeat of the fallopian tubes, the risk of the development of tuboperitoneal infertility is high. According to statistics, every fifth woman with chronic inflammation of appendages in a history of infertility, while 75% of them have adhesions in the pelvis, in which the defeat of the fallopian tubes is irreversible even with the help of surgical treatment [5, p. 125].

According to many authors, the frequency of male and female factors of infertility remain at the same level (42.4%), but there is a steady increase in idiopathic factor (up to 25% in the last few years of research) [3, p. 38]. In the structure of the causes of female infertility up to 50–65% — accounted for tuboperitoneal factor. The main causes of the development of tuboperitoneal infertility are: inflammatory diseases of the fallopian tubes, operative interventions on the pelvic organs, infections of the genital tract, autoimmune processes [3, p. 39; 8, p. 14380].

With repeated relapses of chronic salpingitis, adhesions appear that deform the tube and violate its functions [6, p. 180]. Peritubar adhesions in the pelvic cavity also arise after interventions such as ovariectomy, salpingoectomy, reconstructive surgery on the fallopian tubes, excision of endometrioid heterotopies [1, p. 14].

Despite the many published works on the mechanisms of development of tuboperitoneal infertility, many etiological, factor and clinical aspects remain open [3, p. 39], which determined the need for these studies.

The purpose of the work is to conduct a factor analysis of the clinical manifestations of tuboperitoneal infertility in women of reproductive age what has already been presented [9, p. 186–189].

### *Material and methods of research*

The study involved 70 women of reproductive age, who are divided into control and clinical groups. The control group consisted of 35 women with a chronic inflammatory process in the appendages, without the development of adhesions. The clinical group consisted of 35 women with an established diagnosis of tuboperitoneal infertility. The diagnosis of tuboperitoneal infertility was verified on the basis of clinical data, ultrasound examination of the pelvic organs, hysterosalpingography, diagnostic laparoscopy. The statistics are presented in absolute and percentage terms.

### *Results and discussion*

The average age of women in the control group was  $31.3 \pm 3.5$  years, while the clinical group was  $34.5 \pm 3.9$  years. The main complaint of the patients of the clinical group was the absence of pregnancy. Moreover, primary infertility — 57.2% (40 women), dominated over secondary — 42.8% (30 women). In the control group, secondary infertility was 5.8% (2 women). Pain in the lower abdomen, in the pelvic area, lower back was present in 93% of cases in women of the clinical group, whereas in the control group — in 38.8% of cases. Violations of the menstrual cycle of a different nature were noted in every fifth woman in the clinical group — 20.9%, and in the control group — 12.8% of women. Discharge from the genital tract was present in 11.94% of women in the clinical group, and in the control group — in 5.8% of cases. Signs of galactorrhea were noted in 4.85% and 2.7% of cases, respectively.

Analysis of the duration of infertility in women showed that with increasing degree of adhesions in the pelvis, the duration of infertility increased. Thus, the duration of infertility up to 1 year was 3.7%, from 1 to 3 years — 39.8%, from 3 to 5 years — 38.8%, over 5 years — 12.6%.

Among the factors contributing to the development of tuboperitoneal infertility, it is possible to note various extragenital diseases, which together alter the metabolic processes in the body, immunological reactivity. At the time of the survey of women, 20.5% of patients, urinary system — 19%, various allergic diseases — 18%, diseases of the cardiovascular system were diagnosed in 12.3% of women with various disorders of the gastrointestinal tract. women, chronic diseases of the respiratory system — 10.3%. There was also a diffuse increase in thyroid gland in 8.5% of women, this is due to the fact that the Republic of Mordovia is a well-known iodine-deficient region, which causes the presence of endemic goiter in a significant number of the population. Among the women in the control group, in aggregate, the listed extragenital diseases accounted for 12%.

One of the leading causes of inflammatory diseases of the female genitalia are sexually transmitted infections. These infections largely contribute to the development of adhesions in the fallopian tubes, ovaries, mucous membranes of the uterus. They are dangerous from the point of view of the occurrence of infertility, since from the moment of infection and before contacting medical organizations about infertility, months and years pass, during which the disease is not diagnosed and not treated. In the clinical group, only 12 women (30%) had no urogenital infections. Cases of the association of two or more infections were diagnosed in 25.8% (9 women). These were associations of chlamydia, ureaplasma and mycoplasma (7.7%); chlamydia and herpes simplex virus (5.8%); chlamydia (5.8%); gardnarella, ureaplasma, mycoplasma (2.9%); herpes simplex virus, ureaplasma and mycoplasma (1.9%).

An important factor in the formation of tuboperitoneal infertility is the presence in the history of operations on the pelvic and abdominal organs. Among them, the largest percentage was appendectomy (15.5%), artificial abortions (13.59%), out-of-date pregnancy (11.65%), cystectomy amounted to 9.7%, spontaneous abortions — 8%, cesarean operations cross sections — 8%, cholecystectomy — 6%, combinations of several surgical interventions — 5%. This data confirms

the fact that operative interventions have a pronounced effect on the mechanism of tuboperitoneal infertility formation, the starting point of the formation of postoperative adhesions in the small pelvis is damage to the peritoneum, which leads to ischemia, contributing to a decrease in the site of fibrinolytic activity of tissues with the next inflammatory response.

Bimanual vaginal examination, ultrasound examination of the small pelvic organs, hysterosalpingography together make it possible to diagnose the presence of adhesions in about 70% of cases. Diagnostic laparoscopy allows you to confirm the presence of adhesions in almost 100% of cases. Laparoscopic examination included an examination of the anterior and posterior uterine space, sacro-uterine ligaments, appendages of the uterus, mesentery of the fallopian tubes, omentum and large intestine, as well as the patency of the fallopian tubes and the presence of adhesions.

During laparoscopy, to assess the flow of the fallopian tubes, chromahydrotubation was performed. With the appearance of indicarmine in the abdominal cavity for 1 minute, the pipes were considered normally passable, the discharge after 2–5 minutes was assessed as difficult passage of the pipes, and the absence of the substance was as complete obstruction. In most cases, the penetration of contrast into the fallopian tube (62.1%) has not been noted.

The data presented clearly illustrate that in tuboperitoneal infertility, the pelvic organs have significant pathological changes. The presence of pronounced adhesions in the small pelvis with the involvement of the fallopian tubes in the process and the disruption of their patency necessitate a salpingo-ovaryolysis during laparoscopy, salpingostomy, and fimbriolysis. It follows from the above that tuboperitoneal infertility in women of reproductive age develops against the background of a high level of presence of extragenital pathology (88.6%), infection with urogenital infections (69.6%), postponed surgical interventions on the pelvic organs and the abdominal cavity (77.3%), which resulted in 62.1% of cases to complete obstruction of the fallopian tubes.

#### References:

1. Gasparov, A. S., Volkov, N. I., & Korneeva, M. E. (1999). Trubno-peritoneal'noe besplodie u zhenshchin. *Problemy reproduktivnoy, 2*, 43-44. (in Russian)
2. Cabar, F. R., Pereira, P. P., Schultz, R., & Zugaib, M. (2006). Predictive factors of trophoblastic invasion into the ampullary region of the tubal wall in ectopic pregnancy. *Human Reproduction, 21*(9), 2426-2431. doi:10.1093/humrep/del1170.
3. Korobkov, D. M., & Lapshtaeva, A. V. (2016). Sistema IL-1 v aspekte nekotorykh mekhanizmov trubno-peritoneal'nogo besplodiya. *Nauka budushchego-nauka molodykh, Kazan, 2*, 38-40. (in Russian).
4. Malak, M., Tawfeeq, T., Holzer, H., & Tulandi, T. (2011). Risk factors for ectopic pregnancy after in vitro fertilization treatment. *Journal of Obstetrics and Gynaecology Canada, 33*(6), 617-619. doi:10.1016/S1701-2163(16)34910-6.
5. Abramova, S., & Korobkov, D. (2017). Survey look at the problem of subsidiary reproductive technologies. *Bulletin of Science and Practice, (8)*, 120-127.
6. Valoriani, V., Lotti, F., Lari, D., Miccinesi, G., Vaiani, S., Vanni, C., ... & Noci, I. (2016). Differences in psychophysical well-being and signs of depression in couples undergoing their first consultation for assisted reproduction technology (ART): an Italian pilot study. *European Journal of Obstetrics & Gynecology and Reproductive Biology, 197*, 179-185.
7. Gabriele, V., Gapp-Born, E., Ohl, J., Akladios, C., & Mathelin, C. (2016). L'infertilité est-elle un facteur de risque de cancer du sein? Revue actualisée de la littérature et méta-analyse. *Gynécologie Obstétrique & Fertilité, 44*(2), 113-120. doi:10.1016/j.gyobfe.2015.12.002.
8. Hu, M., Richard, J. E., Maliqueo, M., Kokosar, M., Fornes, R., Benrick, A., ... Stener-Victorin, E. (2015). Maternal testosterone exposure increases anxiety-like behavior and impacts the

limbic system in the offspring. *Proceedings of the National Academy of Sciences*, 112(46), 14348-14353. doi:10.1073/pnas.1507514112.

9. Korobkov, D. (2016). Tuboperitoneal infertility in women of reproductive age and his clinic-factor analysis. *Bulletin of Science and Practice*, (12), 186-189. (in Russian).

*Список литературы:*

1. Гаспаров А. С., Волков Н. И., Корнеева М. Е. Трубно-перитонеальное бесплодие у женщин // Проблемы репродукции. 1999. Т. 2. С. 43-44.

2. Cabar F. R. et al. Predictive factors of trophoblastic invasion into the ampullary region of the tubal wall in ectopic pregnancy // *Human Reproduction*. 2006. V. 21. №. 9. P. 2426-2431. DOI: 10.1093/humrep/del170.

3. Коробков Д. М., Лапштаева А. В. Система IL-1 в аспекте некоторых механизмов трубно-перитонеального бесплодия // Наука будущего - наука молодых: сборник тезисов. Казань. 2016. Т. 2. С. 38-40.

4. Malak M. et al. Risk factors for ectopic pregnancy after in vitro fertilization treatment // *Journal of Obstetrics and Gynaecology Canada*. 2011. V. 33. №. 6. P. 617-619. DOI: 10.1016/S1701-2163(16)34910-6.

5. Абрамова С. В., Коробков Д. М. Современный взгляд на проблему вспомогательных репродуктивных технологий // Бюллетень науки и практики. 2017. №8 (21). С. 120-127.

6. Valoriani V. et al. Differences in psychophysical well-being and signs of depression in couples undergoing their first consultation for assisted reproduction technology (ART): an Italian pilot study // *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 2016. V. 197. P. 179-185. DOI: 10.1016/j.ejogrb.2015.11.041.

7. Gabriele V., Gapp-Born E., Ohl J., Akladios C., Mathelin, C. (2016). L'infertilité est-elle un facteur de risque de cancer du sein? Revue actualisée de la littérature et méta-analyse // *Gynécologie Obstétrique & Fertilité*. 2016. V. 44. №2. P. 113-120. DOI: 10.1016/j.gyobfe.2015.12.002.

8. Hu M., Richard J. E., Maliqueo M., Kokosar M., Fornes R., Benrick A., ... Stener-Victorin E. Maternal testosterone exposure increases anxiety-like behavior and impacts the limbic system in the offspring // *Proceedings of the National Academy of Sciences*. 2015. V. 112. №46, 14348-14353. DOI: 10.1073/pnas.1507514112.

9. Коробков Д. М. Трубно-перитонеальное бесплодие у женщин репродуктивного возраста и его клиничко-факторный анализ // Бюллетень науки и практики. 2016. №12 (13). С. 186-189.

*Работа поступила  
в редакцию 20.04.2019 г.*

*Принята к публикации  
25.04.2019 г.*

*Ссылка для цитирования:*

Abramova S., Zaidulina L., Grachev D., Iseev D., Syatkina I. Problem Tuboperitoneal Infertility in Women of Reproductive Age // Бюллетень науки и практики. 2019. Т. 5. №5. С. 46-50. <https://doi.org/10.33619/2414-2948/42/06>.

*Cite as (APA):*

Abramova, S., Zaidulina, L., Grachev, D., Iseev, D., & Syatkina, I. (2019). Problem Tuboperitoneal Infertility in Women of Reproductive Age. *Bulletin of Science and Practice*, 5(5), 46-50. <https://doi.org/10.33619/2414-2948/42/06>.