rological complication of COVID-19: a case report and MRI findings. Radiol Case Rep. 2020; 15(9): 1591-1595. DOI: 10.1016/j.radcr.2020.06.001

8. Román G.S. [et al.]. Acute Transverse Myelitis (ATM): Clinical Review of 43 Patients With COVID-19-Associated ATM and 3 Post-Vaccination ATM Serious Adverse Events With the ChAdOx1 nCoV-19 Vaccine (AZD1222). Front Immunol. 2021; 12: 653786.
DOI:10.3389/fimmu.2021.653786

9. Chow C.C.N. [et al.]. Acute transverse myelitis in COVID-19 infection. BMJ Case Rep. 2020; 13(8): e236720. DOI: 10.1136/bcr-2020-236720

10. Durrani M. [et al.].Acute transverse myelitis secondary to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): a case report. Clin Pract Cases Emerg Med. 2020; 4(3): 344-348. DOI: 10.5811/cpcem.2020.6.48462

11. Baghbanian S.M., Namazi F. Post COVID-19 longitudinally extensive transverse myelitis (LETM)-a case report. Acta Neurol Belg. 2021; 121(6): 1875-1876. DOI: 10.1007/s13760-020-01497-x

12. Wang D. [et al.]. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China JAMA. 2020; 323(11): 1061-1069. DOI: 10.1001/jama.2020.1585.

13. Varatharaj A. [et al.]. Neurological and neuropsychiatric complications of COVID-19 in 153 patients: a UK-wide surveillance study. Lancet Psychiatry. 2020; (7): 875-882. DOI: 10.1016/S2215-0366(20)30287-X

14. Tsivgoulis G. [et al.]. Neurological manifestations and implications of COVID-19 pandemic Ther Adv Neurol Disord. 2020; 13: 1756286420932036. DOI: 10.1177/1756286420932036

15. Maury A. [et al.].Neurological manifestations associated with SARS-CoV-2 and other coronaviruses: A narrative review for clinicians. Rev Neurol (Paris). 2021; 177(12): 51-64. DOI:10.1016/j.neurol.2020.10.001

16. Sarma D., Bilello L.A. A case report of acute transverse myelitis following novel coronavirus infection. Clin Pract Cases Emerg Med. 2020; 4(3): 321-323. DOI: 10.5811/cpcem.2020.5.47937

17. Wang J. [et al.].Tissue plasminogen activator (tPA) treatment for COVID-19 associated acute respiratory distress syndrome (ARDS): a case series. J Thromb Haemost. 2020; 18(7): 1752-1755. DOI:10.1111/jth.14828

18. Zachariadis A. [et al.].Transverse myelitis related to COVID-19 infection. J Neurol. 2020; 267(12): 3459-3461. DOI: 10.1007/s00415-020-09997-9

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ORGAN-SPARING TREATMENT FOR ENDOMETRIAL CANCER (CLINICAL CASE)

Endometrial cancer ranks among the leading malignant diseases of the female reproduc-tive system and remains a pressing issue in oncogynecology. Although endometrial cancer is pre-dominantly a disease of the menopausal period, 10-14% of cases are diagnosed in patients of re-productive age. Most of these women do not yet have children, making fertility-preserving treatment a priority. As such, if a patient wishes to maintain her reproductive function, standalone hormone therapy may be conducted. Hormonal treatment induces atrophy of the tu-mor-altered endometrium, after which estrogen-progestin medications restore its function. The article presents a clinical case of successful realization of generative function following a favora-ble outcome of endometrial cancer treatment. A 41-year-old patient with low ovarian reserve and unrealized reproductive potential was offered fertility-preserving treatment, involving hyster-oscopic resection followed by hormone therapy. In deciding on fertility-preserving treatment, the presence of favorable prognostic factors was considered: positive receptor status of the tumor and tumor differentiation degree. After treatment, follow-up examinations revealed no recur-rence or disease progression, and the patient was advised to plan for pregnancy using assisted reproductive technologies. However, this was not carried out because of the patient's spontane-ous pregnancy. During gestation, the patient underwent regular oncogynecological examinations according to the established schedule, and no recurrence or disease progression was detected. At 35 weeks of gestation, a surgical delivery was performed, resulting in the birth of a girl weighing 2820 g, with a height of 48 cm and an Apgar score of 8/8 points. This clinical case demonstrated that fertility-preserving treatment for early-stage endometrial cancer not only cured the malignant process but also subsequently fulfilled the generative function, without reducing the effective-ness of the treatment.

Keywords: endometrial cancer, organ-preserving treatment, hormone therapy, clinical case.

Introduction. In contemporary society, a significant proportion of women of childbearing age are susceptible to gynecological cancer, many of whom wish to preserve their fertility for the future [25]. Uterine body cancer (UBC) is one of the leading malignancies affecting the female reproductive system. According to statistics, in 2019, 62,000 new cases of endometrial cancer (EC) were diagnosed worldwide, and alarmingly, both the incidence and mortality rates are projected to increase by 1-2% annually [2, 16, 17, 23]. For comparison, American healthcare statistics indicate the annual identification of approximately 40,000 new cases, and an increase in the frequency of UBC by about 50% over the past 20 years [9]. The lowest mortality rates due to EC are recorded in Central and South Asia, while the highest rates are observed in African countries [15]. UBC survivors may experience treatment-related issues, including infertility, early menopause, sexual dysfunction, and lymphatic edema of the lower extremities [26]. In Russia, EC remains the most common oncogynecological disease, ranking first in the structure of gynecological cancer. In 2021, there were 22,951 patients registered [3]. Among them, 84.4% were diagnosed at stages I-II with a 5-year survival rate of up to 73.1%. Women aged 45 to 74 are more frequently affected, with an average age of diagnosis at 62 years [18]. However, in rare cases, EC can be diagnosed in patients of reproductive age. In such situations, the oncogynecologist faces not only the challenge of treating the young patient but also the possibility of preserving fertility [13, 21, 22]. In 5.2% of cases, the diagnosis was made in patients of reproductive age (18 to 45 years), amounting to an absolute number of 1,317 individuals. Over the past 10 years (2006-2016), there has been not only a steady increase in the incidence of EC,

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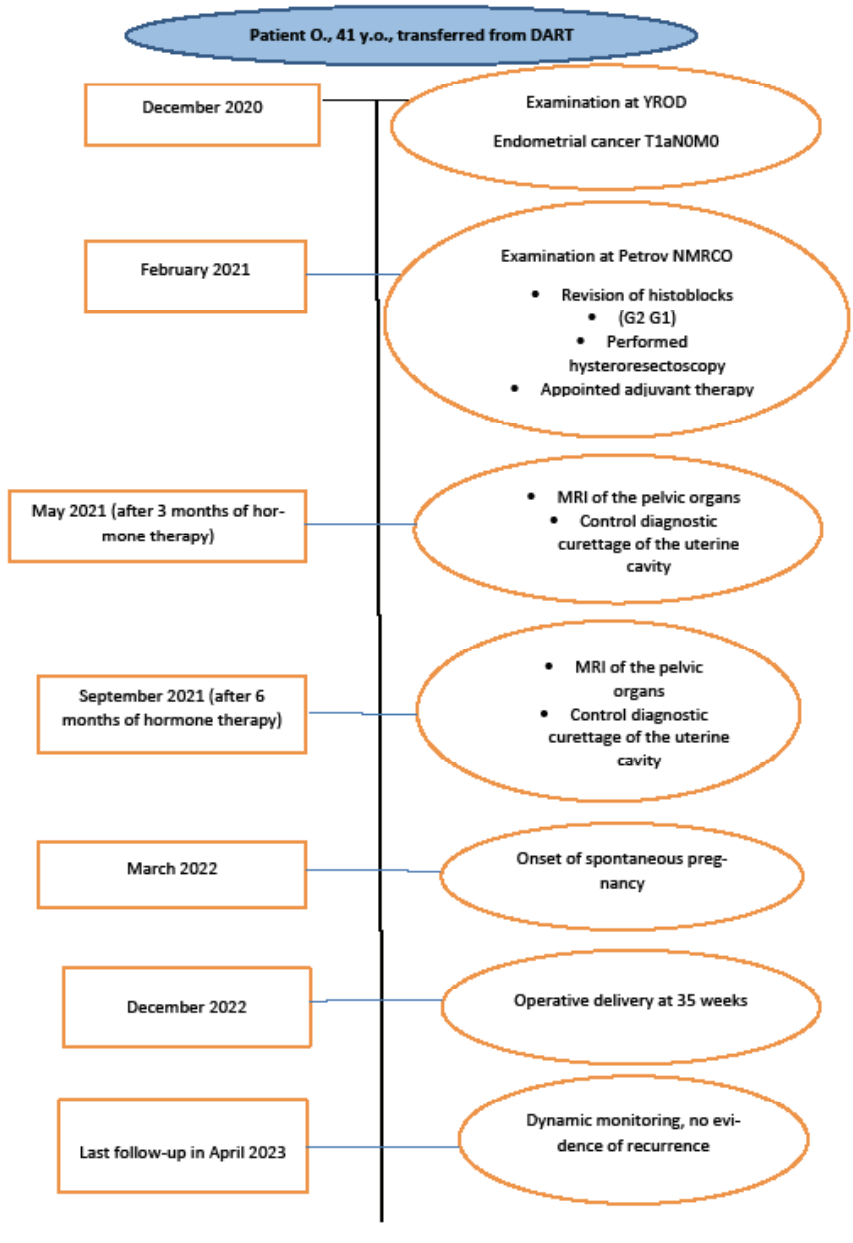
with a growth rate of 38.45%, but also a "rejuvenation" of the pathology [5, 11].

Due to various socio-economic reasons, a significant proportion of women postpone the birth of even their first child to an age older than 35 years [5, 11, 19]. As a result, over the past few decades, preserving fertility in young patients with malignant tumors of the reproductive system has remained one of the priority directions in oncology. Currently, American (NCCN), European (ESMO), and Russian clinical guidelines have been developed for the treatment of early-stage endometrial cancer with fertility preservation in young patients who have not yet realized their reproductive function. However, there are no unified standards in the schemes and duration of hormone therapy [14, 20]. In particular, the 2022 recommendations of the Russian Society of Clinical Oncologists and the 2020 Association of Oncologists of Russia indicate that fertility-preserving treatment for uterine cancer should be performed in institutions with such experience [1, 7]. Patients should be informed about the risks associated with conservative treatment for fertility preservation, specifically the high frequency of relapses, as well as the need for future uterine removal. In Russia, since the mid-1970s, the P. Herzen Moscow Research Oncology Institute has been actively involved in fertility-preserving treatment for precancerous conditions and early-stage endometrial cancer, and research on this treatment method and the search for possible ways to improve oncological and reproductive outcomes continue in the clinic to this day [5].

According to the classic model proposed by Y.V. Bokhman in 1983, there are two types of endometrial cancer (EC) [24, 27]. Patients with Type I pathogenetic variant of endometrial cancer are characterized by obesity, high estrogen levels in pre- and postmenopause, basal and reactive hyperinsulinemia, and a tendency to develop highly differentiated endometrial adenocarcinoma with high levels of estradiol and progesterone receptors in tumor tissue. Patients with Type II pathogenetic variant of endometrial cancer usually occur in elderly women, have a high degree of malignancy with an unfavorable prognosis. Considering the leading role of excessive estrogen influence on endometrial tissue and progesterone deficiency in the development of EC, hormonal therapy for early-stage EC involves the administration of high doses of gestagens, which leads to atrophic changes in the endometrium and disease remission, against which it is possible to perform therapy aimed at restoring reproductive function [6, 8]. It should be noted that fertility-preserving treatment is only possible with certain characteristics of the malignant neoplasm: the initial stage of tumor development (stage IA without myometrial invasion), a high degree of tumor cell differentiation, the absence of signs of metastasis and tumor invasion into the lymphovascular space [10, 12].

Clinical case. Patient O., 41 years old, sought consultation at the Yakutsk Republican Oncological Dispensary (YROD) in December 2020, following a referral from the Assisted Reproductive Technology (ART) department, where she was undergoing examination for primary infertility. From the medical history: in March 2020, endometrial hyperplasia was diagnosed as part of the examination for entering the ART program with a diagnosis of female infertility, tubal factor, chronic bilateral salpingo-oophoritis in remission, chronic endometritis, pituitary microadenoma, hyperprolactinemia, advanced reproductive age, and low ovarian reserve. Diagnostic curettage was performed at the ART department, and moderately differentiated endometrial adenocarcinoma was revealed by histological examination. Gynecological history: menarche at 12 years old, immediately established to last for 4 days with a 26-day cycle, regular, no pregnancies, gynecological diseases: chronic salpingo-oophoritis, registered for pri-



Schematic Representation of the Clinical Case of Patient O., 41 Years Old (DART — Department of Assisted Reproductive Technologies)

mary infertility. Primary examination and bimanual examination: external genitalia developed correctly, female-type hair distribution. Narrow, nulliparous vagina, vaults free, elastic. Cervix of normal size, conical in shape, mucous membrane is not visually changed, external pharynx is of a punctate form, without pathological changes. Uterus is anteverted, of normal size, pear-shaped, of usual consistency, painless upon palpation, adnexa not enlarged, parametrium soft. Pelvic ultrasound revealed increased endometrial thickness, depleted follicular apparatus in both ovaries. Pelvic and extraperitoneal space magnetic resonance imaging: uterus not enlarged, measuring 4.5 cm in length, 6.0 cm in thickness, 5.2 cm in width, with clear, even contours, homogeneous myometrium; uterine cavity not dilated, endometrium of heterogeneous structure, without reliable signs of myometrial invasion; cervix and ovaries not enlarged; pelvic and extraperitoneal lymph nodes not enlarged. Multislice computed tomography of thoracic and abdominal organs: no focal pathology in the structure of parenchymal abdominal and extraperitoneal organs detected; diffuse changes in the pancreatic parenchyma; perigastric lymphadenopathy; hemangioma of L5 vertebral body; lungs without fresh or infiltrative changes. Other examinations: superficial gastritis detected by fibrogastroscopy; no visible pathology detected by rectosigmoidoscopy. Infectious and allergic diseases: not detected. Family history: at 16 years old, patient's sister was diagnosed with acute myeloblastic leukemia.

At the multidisciplinary council, endometrial cancer staging was performed using the TNM system (UICC, 8th revision, 2016) and FIGO classification (2009): cT1aN0M0 Stage IA. Considering the patient's wishes and unrealized reproductive potential, a consultation was held with the N.N. Petrov National Medical Research Center of Oncology (NMRCO) of the Ministry of Health of the Russian Federation, where an organ-sparing treatment option was proposed, consisting of hysteroscopic resection of the tumor followed by hormone therapy. The patient was informed about the risks associated with organ-sparing treatment and referred for the surgical stage to the N.N. Petrov National Medical Research Center of Oncology of the Ministry of Health of the Russian Federation. A review of the histological blocks was conducted at the federal institution, concluding: low-grade endometrioid adenocarcinoma against the background of an endometrial polyp. The patient underwent hysteroscopy with targeted endometrial resection. Postoperative histological examination: reactive changes in stratified squamous non-keratinizing epithelium without underlying stroma, cervical epithelium with focal mature squamous cell metaplasia. Against the background of endometrium with pronounced secretory changes, foci of hyperplasia with architectural atypia without cytological atypia were observed. Subsequently, the patient was prescribed hormone therapy for 6 months: Depo-Provera (medroxyprogesterone acetate) 500 mg following the treatment plan and tamoxifen 20 mg.

After 3 and 6 months of hormone therapy, as part of the control examination, hysteroscopy with separate diagnostic curettage of the cervical canal and uterine cavity was performed. Histological conclusion: fragments of endometrium without signs of malignant growth. According to magnetic resonance imaging of the small pelvis and the retroperitoneal space, there is no reliable evidence of progression of the primary disease. A fluid formation is observed in the projection of the right ovary, with more data indicating a cyst.

The patient was referred for an in-person consultation at the N.N. Petrov National Medical Research Center of Oncology, considering the tubal factor of primary infertility, low level of anti-Mullerian hormone, low number of antral follicles, high interest in pregnancy, and low probability of spontaneous conception. Assisted reproductive technology was recommended for pregnancy planning, which had not been used due to spontaneous pregnancy. During gestation, the patient underwent control examinations with an oncogynecologist according to established terms, with no evidence of recurrence or disease progression. A telemedicine consultation was conducted with the N.N. Petrov National Medical Research Center of Oncology before delivery. Conclusion: Delivery can be performed through natural birth canal if there are no obstetric indications for cesarean section.

Following existing clinical guidelines of the Ministry of Health of the Russian Federation, the patient should be informed about the risks associated with conservative treatment for fertility preservation, specifically the high frequency of recurrence when preserving the uterus, the risk of metastasis, and the need for prophylactic hysterectomy after reproductive realization or reaching an age where pregnancy planning is no longer relevant. The decision on the extent of surgical treatment should be made after delivery and examination within 3-4 months. In the absence of a tumor process in the uterus or preservation of the minimal degree of tumor process spread, it is possible to discuss the issue of hysterectomy with salpingectomy and ovarian preservation based on the histological review of surgical material in the patient with low-grade endometrioid adenocarcinoma, which is associated with low risk of metastasis to regional lymph nodes. In the absence of data on regional lymph node involvement and preservation of the disease stage, lymphadenectomy may not be performed.

In case the patient refuses prophylactic hysterectomy, after delivery, it is recommended to perform a histological examination of the endometrium and, in the absence of pathological changes, insert an intrauterine hormonal system with mandatory subsequent histological and ultrasound monitoring of the endometrium every 6 months.

At 35 weeks of gestation, an operative delivery was performed, resulting in the birth of a girl weighing 2820g, with a height of 48cm, and an Apgar score of 8/8 points. During the operation, a diagnostic curettage of the uterine cavity was performed, followed by a histological examination. The results showed no evidence of malignant growth in the material, with the presence of blood, fibrin, and small fragments of decidual tissue.

In the postpartum period, the patient declined prophylactic hysterectomy, and the monitoring continues: Figure 1.

Conclusion. The presented clinical case demonstrates the high efficacy of hormone therapy application. Organ-preserving treatment allows for the subsequent realization of reproductive function. A thorough consideration of indications and contraindications for the upcoming treatment and proper patient selection are essential. In most cases, after organ-preserving treatment, the risk of tumor recurrence is low, and women regain the chance to conceive and give birth to a healthy child. The decision to perform organ-preserving treatment should be made by a multidisciplinary team involving an oncologic gynecologist, radiation oncologist, obstetrician-gynecologist, reproductive endocrinologist, and perinatologist.

Reference

1. Assotsiatsiya onkologov Rossii. [Association of Oncologists of Russia.] Klinicheskie rek-omendatsii. [Clinical Guidelines.] Rak tela matki. God utverzhdeniya: 2020 (peresmotr kazhdye 3 goda). [Cancer of the Body of the Uterus. Approved in 2020 (reviewed every 3 years) (In

Russ.).] http://oncology-association.ru/files/clinical-guidelines_adults/rak-tela-matki.pdf

2. Ashrafyan L. A., Kiselev V. I. Opukholi reproduktivnykh organov (etiologiya i pato-genez). [Tumors of the Reproductive Organs (Etiology and Pathogenesis) — Moscow, 2008;6-11 (In Russ.).]

3. Kaprina A.D., Starinsky V.V., Shakhnazarova A.O. Zlokachestvennye novoobrazovaniya v Rossii v 2021 godu (zabolevaemost' i smertnost'). [Malignant Neoplasms in Russia in 2021 (Morbidity and Mortality). M., 2022

4. Kaprin A.D., Starinskiy V.V., Petrova G.V. [et al.] Sostoyanie onkologicheskoi pomoshchi naseleniyu Rossii v 2017 godu. [State of Oncological Care for the Population of Rus-sia in 2017. Moscow, 2018; 234 (In Russ.).]

5. Novikova E.G., Chulkova O.V., Pronin S.M. Predrak i nachalnyi rak endometriya u zhenshchin reproduktivnogo vozrasta. [Precancer and Primary Endometrial Cancer in Women of Reproductive Age — Moscow: MIA, 2005; 132 (In Russ.).]

6. Novikova O.V., Novikova E.G., Volchenko N.N., [et al.]. Lechenie retsidivov atipich-eskoi giperplazii i nachalnogo raka endometriya posle samostoyatelnoi gormonoterapii. [Treatment of Relapses of Atypical Hyperplasia and Initial Endometrial Cancer After Self-Hormone Therapy.] Akusherstvo i ginekologiya: novosti, mneniya, obuchenie. [Ob-stetrics and Gynecology: News, Opinions, Training, 2018;1:68–76 (In Russ.).]

7. Nechushkina V.M., Kolomiets L.A., Kravets O.A., Morkhov K.Y., Novikova E.G., Novikova O.V. [et al.]. «Prakticheskie rekomendatsii po lekarstvennomu lecheniyu raka tela matki i sarkom matki». [Practical Guidelines for Drug Treatment of Uterine Cancer and Uterine Sarcomas, RUSSCO, Version 2022, doi:10.18027 / 2224–5057–2022–12–3s2–260–275 (In Russ.).] https://rosoncoweb.ru/standards/RUSSCO/2022/recoms2022_12.pdf

8. Pronin S.M., Novikova O.V., Andreeva Y.Y. Primenenie rilizing-sistem i agonistov gon-adotropin-rilizing-gormona v lechenii atipicheskoi giperplazii i nachalnogo raka endomet-riya. [Use of Releasing Systems and Gonadotropin-Releasing Hormone Agonists in the Treatment of Atypical Hyperplasia and Early Endometrial Cancer.] Onkologiya. Zhurnal im. P.A. Gertsena. [Oncology. P. Herzen Journal. 2013; 1:40–3 (In Russ.).]

9. Alteri D.C. Survivin Versatile Modulation of Cell Division and Apoptosis in Can-cer. Oncogene. 2003;22:858-16

10. Carneiro M.M., Lamaita R.M., Ferreira M.C.F., Silva-Filho A.L. Fertility-Preservation in Endometrial Cancer: Is It Safe? Review of the Literature. Jbra Assist Reprod. 2016; 20(4): 232-9. doi: 10.5935/1518-0557.20160045

11. Colombo N., Creutzberg C., Amant F. Esmo-Esgo-Estro Consensus Con-ference on Endometrial Cancer: Diagnosis, Treatment and Follow-up. Ann Oncol. 2016; 27(1): 16-41, doi: https://doi.org/10.1093/annonc/mdv484

12. De Felice F., Marchetti C., Di Pinto A., Musella A., Palaia I., Grazia Porpora M., et al. Fertility Preservation in Gynaecologic Cancers, ecancermedicalscience, 2018; 12:798, https://doi.org/10.3332/ecancer.2018.798

13. Duska L.R., Garrett A., Rueda B.R., Haas J., Chang Y., Fuller A.F. Endometrial Cancer in Women 40 Years Old or Younger. Gynecologic Oncology, 2001;83(2):388–393

14. Colombo N., Creutzberg C., Amant F. [et al.]. ESMO-ESGO-ESTRO Consensus Confer-ence on Endometrial Cancer. Diagnosis, Treatment and Follow-Up. Annals of Oncology, 2016; 27:16–41

15. Ferlay J., Soerjomataram I., Dikshit R. [et al.]. Cancer Incidence and Mortality Worldwide: Sources, Methods and Major Patterns in Glo-Bocan 2012 // International Journal of Cancer, 2015;136(5):E359-E386.

16. International, Collaborations in Cancer Control and the Third International Cancer Control Congress, Timori Milan, 2009;95:579-596

17. Jemal A., Siegel R., Ward E. [et al.]. Cancer Statistics. CA: A Cancer Journal for Clinicians, 2007;57:43-66

18. Khazaei Z., Hasanpour D., Amiri M. [et al.]. The Incidence and Mortality of En-dometrial Cancer and Its Association With Body Mass Index and Human Development Index in Asian Population, World Cancer Research Journal, 2018; 5:e1174

19. Lancaster J.M., Powell C.B., Chen L.M., Richardson D.L. Society of Gynecologic Oncology Statement on Risk Assessment for Inherited Gynecologic Cancer Predispositions. Gy-necologic Oncology, 2015; 136:3–7. doi : 10.1016/j.ygyno.2014.09.009

20. NCCN Clinical Practice Guidelines in Oncology. Uterine Neoplasms; Version 2.2018, May 25.2018 https://www.nccn.org/professionals/physician_gls/pdf /uterine.pdf

21. Kalogera E., Dowdy S.C., Bakkum-Gamez J.N. Preserving Fertility in Young Pa-tients With Endometrial Cancer: Current Perspectives. International Journal of Women's Health. 2014; 6:691-701

22. Lee N.K., Cheung M.K., Shin J.Y., et al. Prognostic Factors for Uterine Cancer in Reproductive-Aged Women. Obstetrics & Gynecology, 2007; 109 (3):655–662

23. Siegel R.L., Miller K.D., Siegel R.L., Miller K.D., Cancer Statistics. CA: A Can-cer Journal for Clinicians, 2019; 69:7-34

24. Suarez A.A., Felix A.S., Cohn D.E. Bokhman Redux: Endometrial Cancer "Types" in the 21st Century, Gynecologic Oncology, 2017;144(2):243–249. doi: 10.1016/j.ygyno.2016.12.010

25. Taylan E., Oktay K. Fertility Preservation in Gynecologic Cancers.Gynecologic Oncology, 2019;155(3):522–529, doi: 10.1016/j.ygyno.2019.09.012

26. Torre L.A., Farhad I., Siegel R.L., Ward E.M., Ahmedin J. Global Cancer in Women: Burden and Trends // Cancer Epidemiology, Biomarkers & Prevention, 2017;26(4):444–457

27. Wilczyński M., Danielska J., Wilczyński J. An Update of the Classical Bokhman's Dualistic Model of Endometrial Cancer, Menopause Review, 2016;15(2):63–68, doi: 10.5114/pm.2016.61186.