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EFFECTS OF PREVIOUS COVID-19 ON WOMAN'S REPRODUCTIVE SYSTEM

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Abstract: The article analyzes the negative effects of covid-19 disease on the female reproductive system. At the end of the article are scientific conclusions about the female reproductive system of covid-19 disease.

Keywords: COVID-19, reproductive, zdorovya, therapy, contraception, cycle, pathology, gynecology, coronavirus

Introduction: Influence of perenesennogo COVID-19 on the reproductive system of women may be due to toxic effects of primary drugs, prolonged hospitalization in the intensive care unit and intensive care, decompensation of accompanying chronic In nastoyashchee vremya neizvestno, kakie otdalennые posledstviya dlya reproduktivnogo zdorovya jenshchin mogut byt svyazanы s perenesennым COVID-19. V svyazi s etim vse jenshchiny, perenesshie COVID-19, osobenno v tyajeloy forme, doljny byt otneseny k gruppe vysokogo riska po razvitiyu oslojneniy i podvergatsya bolee tshchatelnomu dispansernomu nablyudeniyu pogolei pogoleeniyu poshenie v techeni It is necessary to determine the following tactical measures: recovery of the menstrual cycle, infertility treatment, operative treatment of gynecological pathology, selection of methods of contraception, provedenest zamestitelnoy hormonalnoy terapii pokazaniy i tehemiy spetsheskoy [drug specifics].

Uchenye iz Kitaya opublikovali nauchnuyu rabotu, v kotoroy soobshchili, chto koronavirus mojet infitsirovat yaichniki, matku, placentu i drugie organy jenskoy reproduktivnoy sistemy, tak kak na poverxnosti ix kletok prisutstvuyut belok ACE2 - vxodnye vorota. According to the authors, SARS-CoV-2 is potentially able to lead to infertility.

Rossiyskie spetsialisty podtverjdayut takuyu vozmojnost: viruses, privodyashchix k problemsam s fertnostyu, izvestno mnogo. Only for SARS-CoV-2 this is a false hypothesis. Neobxodimo nablyudat za zdorovem perebolevshix jenshchin, a takje beremennyx, chtoby sdelat bolee tochnые vыvody. Specialists preduprejdayut o potentsialnom risk of development of infertility in perebolevshix uxanskoy pnevmoniey patsientok.

V nachale maya uchenye iz departamenta fiziologii Meditsinskogo universiteta Tszinina (JiningMedicalUniversity) opublikovali statyu, v kotoroy privedeny dannye o vozmojnom vliyanii zarazheniya koronavirusom na reproduktivnuyu sistemu jenshchin. They predpolagayut, that the pathogen can penetrate into the organs of the urinary system iz-za togo, that na ix kletkax v bolshom kolichestve predstavlenы receptors ACE2 (or APF2 - Angiotenzinprevrashchayushchiy enzyme 2 - vxodnые vorota for SARS-CoV-Izvestia). Cherez nix infection enters the body cells. Issledovateli proanalizirovali nauchnuyu literaturu o nalichii takix retseptorov u jenshchin. They are connected to the ACE2, which regulates the development of

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follicles and ovulation, and also affects the changes in the tissues of the endometrium and the development of the embryo. Infection of the cherez eti struktury koronavirusom sposobno narushit reproductivenые jenshchiny. "SARS-CoV-2 can infuse the uterus, uterus, placenta and placenta through the full expression of ACE2", - said in the output of this work. In the final scheme it threatens infertility patients.

Takje vozmojny narushenie menstrualnogo tsikla, respiratornyydistress-syndrom u ploda, esli jenshchina beremenna, i drugie patologii. V svyazi s etim, mediki preduprejdayut o neobxodimosti posleduyushchego nablyudeniya i otsenki fertnosti perebolevshix jenshchin uje posle vyzdorovleniya.Rossiyskie viroologi schitayut, chto novyykoronavirus moeje miye privodit k takim posledstvi k takim posledstv; potential, as it is marked in the published publication. [2]

Potentsialnoe vliyanie perenesennogo COVID-19 na jenskuyu reproduktivnuyu sisteme na tekushchiy tor net net dannyx o narusheniyax jenskoy reproduktivnoy sistemy u patsientov s COVID-19. Vyyavlena expression APF2 in the endometrium (preimushchestvenno in epithelial cells posravneniyu with stromalnymi).

Bolee togo, otmecheno, chto expression APF2 v kletkax endometrium izmenyaetsya v xode menstrualnogo tsikla - bolee vыsokaya expression nablyudaetsya v lyuteinovoy faze tsikla. Similar patterns of expression may affect the local homeostasis of angiotensin-II and play a role in regulating the process of endometrial regeneration.

Theoretic and experimental aspects of reproduction Theoreticalandexperimentalaspectsofreproductionkrys under the action of gonadotropins, except for similar data on granular cells of the human ovary. Osnovыvayas na predshestvuyushchix issledovaniyax, J. Qiao and soavt. predpolojili mechanisms of potential influences SARS-CoV-2 on the female reproductive system:

- vozmojno, novyykoronavirus porajaet granuleznые kletki yaichnikov i snijaet kachestvo ootsitov, chto mojet privesti k besplodiyu ili nevynashivaniyu beremennosti;
- SARS-CoV-2 can potentially damage the epithelial cells of the endometrium and affect the process of embryo implantation [3].

Tem ne menee vse eshche otsutstvuyut dokazatelstva vliyaniya SARS-CoV-2 na tkan yaichnikov i endometriy, chto obuslovlivaet aktualnost dalneyshix issledovaniy v dannom napravlenii. Influence of perenesennogo COVID-19 in pandemics on menstrual function.

Currently, there is no data on the effect of the transferred COVID-19 on menstrual function. However, the extreme stress caused by a new infection, as well as a state of emergency during a pandemic, can have a significant impact on the reproductive system. There is a reciprocal relationship between the hypothalamic-pituitary-adrenal axis, which provides the formation of a response to stress, and the hypothalamic-pituitary-ovarian axis, in which activation of one axis leads to the suppression of the other. Chronic activation of stress responses suppresses the production of estrogens and norepinephrine, which contributes to menstrual irregularities and anovulatory cycles [4].

Intra-family conflicts, which can worsen during self-isolation during a pandemic, also potentially provoke menstrual irregularities. Stress-dependent menstrual irregularities represent a spectrum of disorders, including secondary amenorrhea (absence of menstruation for 3 months or more, subject to a previous regular menstrual cycle) and a more rare form - primary stressful amenorrhea [5].

According to statistics, menstrual irregularities caused by psychogenic factors are much more often observed in adolescents and young women under 25, so special attention should be paid to this category of patients. The relationship between the psychological state after suffering COVID-19 and reproductive health. Previous studies have shown that outbreaks of new infectious diseases (SARS, MERS, H1N1) have had a pronounced impact on the psychological health of people. Panic attacks, depression, anxiety, fear, and post-traumatic stress disorder have been reported among patients and healthcare professionals. Severe stress results in disruption of homeostasis and activation of the stress response system (primarily through the hypothalamic-pituitary-adrenal axis).

An immediate response to stress is a protective response of the body, however, constant activation of the hypothalamic-pituitary-adrenal axis by persistent or traumatic stressors can lead to dysfunction of the axis, suppression of the reproductive function of the body, impaired fetal development, and adverse reproductive results.

In addition, there are gender differences in the regulation of the stress response, mainly due to the interaction between the hypothalamic-pituitary-adrenal and hypothalamic-pituitary-gonadal axes. Due to the potential adverse effects on reproductive health, it is very important to pay particular attention to the psychological state of patients during the COVID-19 pandemic. This study aimed to systematically report and analyze the epidemiological, clinical and laboratory characteristics of COVID-19 patients of childbearing age and identify any effects of viral infection on ovarian function.

As described by the authors of this article, and to our knowledge, this was the first study to focus on clinical and laboratory findings, especially sex hormone, menstruation, and ovarian reserve in women of childbearing age who are infected with COVID-19.

According to the results of the studies carried out by the authors, it was shown that seriously ill patients had more concomitant diseases and complications and a higher mortality rate than patients with a mild degree of the disease. Higher levels of PCT and cytokines in the severe group indicate more serious infectious conditions and cytokine storms in severe patients [6].

The authors, analyzing the menstrual changes in patients, found that they experienced transient menstrual changes of varying degrees, mainly manifested in the form of lengthening of the menstrual cycle, lengthening of cycles and a decrease in volume.

Some patients also experienced a reduction or irregularity in the menstrual cycle and an increase in volume, which were rarely observed in the control group. Menstruation is regulated by the ovaries and is easily disturbed by external factors

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such as infections, medication and other organ dysfunctions (Kala, et al., 2016, Karagiannis, 2005). To explain menstrual changes, univariate logistic regression was performed for these possible factors. Therefore, the presence of systemic complications was found to be highly correlated with menstrual changes. This suggests that menstrual changes, which are often neglected by clinicians, are more likely to occur in patients with multisystem dysfunction. In addition, follow-up showed that 84% of patients returned to normal menstrual volume, and 99% of patients returned to their normal cycle within one to two months after discharge, suggesting that menstrual changes caused by COVID-19 are likely were temporary changes and also resolved in a short time.

Along with this, the authors obtained several more results, of which based on menstrual changes, also showed that there were no significant changes in the levels of sex hormones either with a change in menstrual volume, or with a change in a simple cycle, or with a simultaneous change in volume and cycle. This result showed that the ovarian endocrine system in most patients with COVID-19 was not seriously affected. However, some patients showed abnormal changes in sex hormone levels, such as inadequately high FSH and LH levels during the early follicular phase, which may indicate suppression of ovarian function in these patients.

In acute stress, Karagiannis, 2005), although the authors did not re-examine the levels of sex hormones in the early follicular phase in recovered patients, based on the fact that menstruation returned to normal in most patients after discharge, it is reasonable to assume that changes in hormone levels were only temporary and transient. However, the direct effect of the virus could not be completely ruled out. studied the effects of SARS-CoV-2 infection on the ovarian reserve; patients were tested for AMH.

AMH is secreted by small antral follicles and is an important indicator for assessing ovarian reserve. It is not affected by the menstrual cycle, exogenous sex hormones or pregnancy (Iliodromiti et al. 2015, LaMarca et al. 2010). The average AMH level in patients with COVID-19 did not differ from control. Taking into account the transient and reversible menstrual changes and the fact that estradiol and progesterone levels did not decrease in patients with COVID-19, we hypothesize that SARS-CoV-2 infection may have little effect on ovarian reserve. The authors also argue that additional clinical and laboratory evidence is needed to support the above suspicions.

In conclusion, the team concludes that there is no evidence that SARS-CoV-2 causes significant impairment of fertility in women with COVID-19. However, some patients experienced transient abnormal changes in the menstrual cycle, as well as changes in hormone levels. Patients with COVID-19 with menstrual irregularities are advised to be monitored at home after pregnancy has been ruled out, which can reduce the waste of medical resources and avoid hospital infections, especially in the current serious epidemic situation. [7].

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