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Do the COVID-19 Vaccines Cause Menstrual Irregularities?

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COVID-19 is affecting all the world as a pandemic. This new corona virus causes various health problems like pneumonia, acute respiratory distress syndrome (ARDS), kidney injury, myocardial dysfunction, and gastrointestinal diseases (1). Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) affects the immune system and causes an increase in interleukin (IL)-6, IL-8, tumor necrosis factor-α (TNF-α) and other cytokines. In addition to COVID-19 itself, impaired immune system may cause alteration on hypothalamic–pituitary–gonadal axis (2). Some studies showed a change in menstrual cycle, worsening of premenstrual symptoms and menorrhagia in women with COVID-19 compared to before the pandemic (3, 4).

On the other hand, World Health Organization (WHO) suggests safe and effective vaccines to end COVID-19, besides wearing masks, cleaning hands, ensuring good ventilation indoors, physically distancing and avoiding crowds (5). After vaccination, some women complained of menstrual irregularities such as heavy menstrual bleeding (menorrhagia), frequent bleeding (metrorrhagia/polymenorrhea), or postmenopausal bleeding. One of the underlying causes may be a vaccine-induced thrombocytopenia (6). The female human menstrual cycles could be affected by many situations such as stress, weight gain, hormones etc. During pandemic, studies show that women have significantly higher stress, anxiety, and depression compared to men (7, 8). Hypothalamic–pituitary–gonadal axis is sensitive to inadequate sleep, physical and psychological stress. Pulsatile mechanism of hormones is essential for regular menstrual cycle. Therefore, disruption of regularity in hormone release may cause to menstrual disorders (9). In addition, the vaccines activate the immune system and activated immune system might attack immune cells and inflammatory molecules in the uterus. This event may be associated with changes in menstrual cycles. To clarify these hypotheses, controlled studies are needed. Until now; pain, redness, swelling, tiredness, headache, muscle pain, chills, fever, nausea are accepted as side effects of vaccines. However, menstrual cycle regularities were not recorded. Therefore, the researchers should be aware of this topic and add the questions about the menstrual cycle in clinical trials for COVID-19 vaccines.

Prof. Zehra Kurdoğlu worked as an Assistant Professor between 2009 and 2012, and as an Associate Professor between 2012-2014 in the Department of Obstetrics and Gynecology, Faculty of Medicine, Van Yuzuncu Yil University. Between the years of 2014-2018, she worked in the Department of Obstetrics and Gynecology of Ankara Training and Research Hospital. She was trained on robotic surgery at the Division of Minimally Invasive Gynecology and Research in the Department of Obstetrics and Gynecology of the University of Texas Medical Branch at Galveston, Texas, USA. She started to work at Yildirim Beyazıt University Faculty of Medicine, Department of Obstetrics and Gynecology in 2018. At national and international level, she has published 100 scientific papers, has written 2 book chapters, and has received over 800 citations for her articles. She was a member of the editorial board of Van Medical Journal, Turkish Journal of Obstetrics and Gynecology, Turkiye Klinikleri Gynecology Obstetrics, Eastern Journal of Medicine, previously. She is a member of the editorial board of International Journal of Women's and Reproduction Sciences and Crescent Journal of Medical and Biological Sciences.

Ethical Issues

Not applicable.

Conflict of Interests

The author has no conflicts of interest to disclose.

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