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RESEARCH ARTICLE

Effects of Covid Vaccination on Menstrual Cycle: A Novel Study

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Abstract

COVID-19 vaccination is widely regarded as safe. Still, the immune response or the associated stress may link the vaccine with certain temporary menstrual changes. A Total of 100 women met the inclusion criteria. 23 experienced irregular bleeding following the vaccine. The most predominant menstrual changes were more menstrual bleeding (43%), more menstrual pain (41%), delayed menstruation (38%), fewer days of menstrual bleeding (34.5%), and shorter cycle length (32%). Menstrual cycle change following COVID-19 vaccination appears small and temporary and should not discourage individuals from becoming vaccinated.

Keywords: Covid vaccination; Menstrual cycle; Abnormal uterine bleeding

Introduction

The past two years, our lives have been significantly affected by COVID-19 and the restrictions the pandemic brought to everyday life. Total cases 42,34,37,674 (21 January 2022) [(1)].

However, not much is known about the impact of COVID-19 on the reproductive system, specifically the female reproductive system. COVID-19 vaccination is widely regarded as safe.

Still, the immune response or the associated stress may link the vaccine with certain temporary menstrual changes [(2)].

Materials and Methods

Study type Retrospective study, Study place: Department of Obstetrics and Gynaecology in Basaweshwara Medical College and Hosiptal, Chitradurga, Karnataka, India. The data was obtained by filling a questionnaire.

Inclusion criteria

Women between 18 and 45 years,
Women having vaccination certificate

Exclusion criteria

- Pregnancy or lactation
- Women with abnormal uterine bleeding

A Total of 100 women met the inclusion criteria

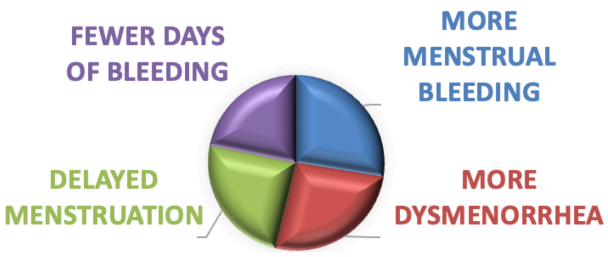

Fig 3. Menstrual variations

Results

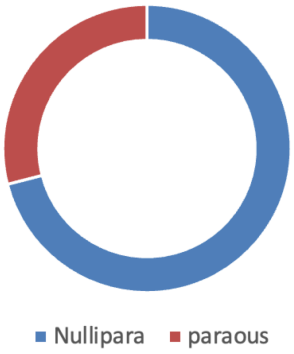

Fig 1. Parity distribution

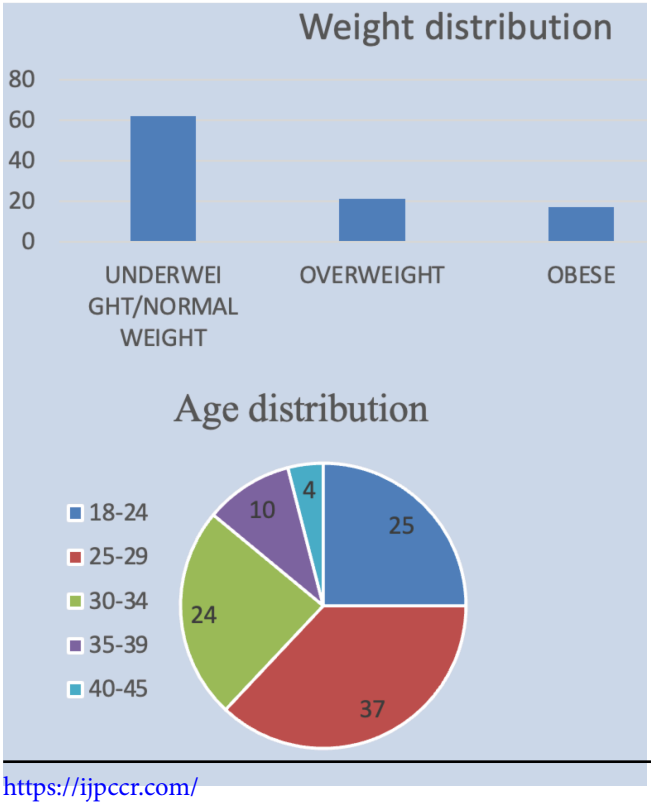

Fig 2. Weight and Age distribution

23 experienced irregular bleeding following the vaccine. The most predominant menstrual changes were more menstrual bleeding (43%), more menstrual pain (41%), delayed menstruation (38%), fewer days of menstrual bleeding (34.5%), and shorter cycle length (32%).

Discussion

Existing literature has generated conflicting results characterizing menstrual cycle profiles during the pandemic. Of note, 3 previous studies observed a higher prevalence of menstrual cycle disruptions (eg, irregularity, decreased duration of periods, and more severe menstrual symptoms) during the pandemic than before the pandemic.

However, these previous studies were cross-sectional and provided limited information about changes from prepandemic cycle characteristics or the temporality of change relative to infection or vaccination.

Our results suggested that COVID-19 vaccination results in short-term increased risk of change in cycle length and bleeding (longer cycles), independent of infection status.

A normal menstrual cycle is characterized by tightly regulated inflammatory and immune mediators, particularly matrix metalloproteinases, that facilitate the endometrial tissue breakdown and degradation needed for menstruation.

Furthermore, immune cell activation may contribute to heavy menstrual bleeding.

More needs to be determined regarding the mechanisms by which inflammatory response to a vaccine affects the ovaries and uterus [3].

Conclusion

COVID-19 vaccination was associated with an immediate short-term increase in menstrual cycle length overall, which appeared to be driven by doses received in the follicular phase.

The most commonly described menstrual disturbance was excessive bleeding.

The change in cycle length was less than 1 day. However, the magnitude of this increase was small and diminished in each cycle following vaccination.

Further research is needed to confirm our findings and to better characterize the magnitude of change and any possible long-term implications.

Menstrual cycle change following COVID-19 vaccination appears small and temporary and should not discourage individuals from becoming vaccinated.

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