

Impact of Coronavirus disease 2019 (COVID-19) vaccination on menstrual bleeding quantity: an observational cohort study

Blair Darney¹, Emily Boniface¹, Agathe Van Lamsweerde², Leo Han¹, Kristen Matteson³, Sharon Cameron⁴, Victoria Male⁵, Juan Acuna⁶, Eleonora Benhar², Jack Pearson², and Alison Edelmann¹

¹Oregon Health & Science University

²Natural Cycles

³University of Massachusetts Chan Medical School

⁴NHS Lothian

⁵Imperial College London

⁶Florida International University School of Public Health

September 13, 2022

Abstract

Objective Assess whether coronavirus disease 2019 (COVID-19) vaccination impacts menstrual bleeding quantity. **Design** Retrospective cohort **Setting** Five global regions **Populations** Vaccinated and unvaccinated regularly cycling individuals using the digital fertility-awareness application “Natural Cycles”. **Methods** We used prospectively collected menstrual cycle data and multivariable longitudinal Poisson GEE models, multivariable multinomial logistic regression models, and calculated the adjusted difference between vaccination groups. All regression models were adjusted for confounders. **Outcome measures** Mean number of heavy bleeding days (fewer, no change, more) and changes in bleeding quantity (less, no change, more) at three time points (first dose, second dose, and post-exposure menses). **Results** We included 9,555 individuals (7,401 vaccinated, 2,154 unvaccinated). About 2/3 of individuals reported no change in the number of heavy bleeding days regardless of vaccination status. After adjusting for confounders, there were no significant differences in the number of heavy bleeding days by vaccination status. A larger proportion of vaccinated individuals experienced an increase in total bleeding quantity (34.5% unvaccinated, 38.4% vaccinated; 4.0% [0.7, 7.2%] adjusted difference). This translates to an estimated 40 additional people per 1,000 normally cycling individuals who experience more total bleeding quantity following the first vaccine dose due to vaccination. Differences resolved in the cycle post-exposure. **Conclusion** A small increase in the probability of more total bleeding quantity occurs following the first COVID-19 vaccine dose which resolved the cycle post-vaccination cycle. Total number of heavy bleeding days did not differ by vaccination status. Our findings can reassure the public that any changes are small and transie

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