

# COVID-19 vaccination and pregnancy: getting the word out

Victoria Male<sup>1</sup>

<sup>1</sup>Imperial College London

November 7, 2023

## **COVID-19 vaccination and pregnancy: getting the word out**

Victoria Male, Senior Lecturer in Reproductive Immunology, Imperial College London

Pregnancy is a risk factor for severe COVID-19, doubling the likelihood that an unvaccinated individual requires intensive care, invasive ventilation, or ECMO. Between March 2020 and December 2021 in the UK, COVID-19 emerged as the leading cause of death during pregnancy: among the 33 women who succumbed to the virus, none had been fully vaccinated (Knight et al, ISBN: 978-1-7392619-4-8). Furthermore, in unvaccinated individuals, SARS-CoV-2 during pregnancy can adversely affect infants, increasing the odds of preterm birth by 1.5-fold and those of stillbirth or neonatal death by approximately 3-fold (Male, *Nat Rev Immunol*, 2022, 22:277-82).

In the face of these concerning statistics, COVID-19 vaccination in pregnancy seems a sensible precaution. Clinical trials and subsequent observational studies demonstrated that COVID-19 vaccination is safe and effective in the general population, but expectant parents naturally have an important additional question: is it safe for my baby?

In the clinical trials of the COVID-19 vaccines, pregnancy was an exclusion criterion but nonetheless 102 participants became pregnant during mRNA vaccine trials, with miscarriage rates no different between the vaccinated and control groups. Early observational studies focussed on outcomes at birth which, during the pandemic, have been somewhat better in vaccinated individuals, particularly with respect to outcomes influenced by SARS-CoV2 infection (Prasad, *Nat Comms*, 2022, 13:2412\*). A population-based cohort study published in this issue of *BJOG* (please add reference) is the latest in a mounting number of observational studies that examine the risk of early pregnancy loss following COVID-19 vaccination, controlling for gestational age and relevant medical and social confounders. This is the first to formally consider termination of pregnancy at the patient's request as a competing risk, but whether or not this was including in the analysis, the authors found no increased risk of miscarriage associated with COVID-19 vaccination either during or before pregnancy.

The evidence is now clear: COVID-19 vaccination is safe in pregnancy, but infection is not. Despite this, COVID-19 booster uptake among those eligible due to pregnancy remains low, peaking at 19% in the 2022-23 booster season. Some people are not aware their pregnancy makes them eligible for a booster and, among those who are, not all are informed of the extensive evidence on the safety and benefits of COVID-19 vaccination in pregnancy. Others believe their primary course of vaccination, or a previous infection, is sufficient to protect them. Although a primary course of vaccination continues to protect against severe disease, evidence on how long protection lasts, particularly in the face of new variants, is not yet available: as time elapses the benefit of a booster is expected to increase. Pertinently, people continue to die of flu during and shortly after pregnancy, despite having been exposed to the virus throughout their lives. In the UK, two women recently died this way: neither had received the recommended flu booster during pregnancy (Knight et al, ISBN: 978-1-7392619-4-8).

While ongoing research remains important for confirming the safety of COVID-19 vaccination during pregnancy, it is unlikely that any new study will overturn the wealth of evidence we have already amassed. The challenge now is to get the word out.

\* For a regularly updated list of studies concerning the safety of COVID-19 vaccination in pregnancy, please see <http://bit.ly/pregnancysafety>

### **Conflict of interests**

The author has no conflicts of interest to declare.