



COVID-19 vaccines

Revised: December 21, 2020.

Drug Levels and Effects

Summary of Use during Lactation

Several vaccines against SARS-CoV-2, the virus that causes COVID-19, are being developed; however, none have been studied during breastfeeding. The first two vaccines to become available in the US are messenger RNA (mRNA) vaccines. They are not live vaccines and are not expected to be appreciably excreted into breastmilk or absorbed by the infant. No non-live vaccines have ever been reported to cause infant adverse effects via breastfeeding.[1] Professional organizations have recommended that these COVID-19 vaccines be offered to those who are breastfeeding because the potential benefits of maternal vaccination during lactation outweigh any theoretical risks.[2-4] Given the current absence of direct evidence of vaccine safety during breastfeeding, clinicians are encouraged to undertake shared decision making with their patients, based on local community risk and the patient's risk factors.[5]

Drug Levels

Messenger RNA strands encode for the SARS-CoV-2 S “spike” protein, encapsulated within lipid nanoparticles. These nanoparticles are microscopic spherical-shaped mixtures of specialized fats, cholesterol, and polyethylene glycol that protect and deliver the mRNA strands to cells of the body after injection. Once inside the vaccine recipient's cells, the mRNA is released, and its genetic code translated into viral S proteins. Those proteins are processed into peptides that are displayed on the cell surface, which then stimulates the antiviral immune response.[6] There is no plausible mechanism for intact viral S proteins to be distributed into the milk from the maternal circulation after immunization.

Any intact vaccine lipid nanoparticles that are excreted into breastmilk and ingested orally by the infant during feeding would be destroyed in the infant's gastrointestinal tract, which is a major reason why lipid nanoparticle-assisted RNA vaccines are limited to the parenteral route.[6] The tiny amount of polyethylene glycol-2000 in Pfizer-BioNTech vaccine is not absorbed orally, so infant breastmilk PEG exposure from maternal immunization is not a concern. Neither of the currently available vaccines contains a preservative or adjuvant.

Maternal Levels. Relevant published information was not found as of the revision date.

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

Relevant published information was not found as of the revision date.

Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date. However, the humoral immune response to the mRNA COVID-19 vaccines is similar to those with COVID-19 disease,[7,8] and milk from mothers with COVID-19 contains SARS-CoV-2-specific immunoglobulins.[9]

References

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Substance Identification

Substance Name

COVID-19 vaccines

Drug Class

Breast Feeding

Lactation

Vaccines