

Vaccination Against COVID-19 in Pregnant and Lactating Women

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Many viral infections have been established to cause some effects on the mother and the fetus during pregnancy, and it may provide information on the mechanism of COVID-19 and its possible effect on pregnancy. The experience and knowledge gained from previous human coronavirus outbreaks suggests that pregnant women and their fetuses are particularly susceptible to poor outcomes. Till date there is little evidence about the possible impact of COVID-19 on pregnancy. Studies published from China in the initial phase of COVID-19 suggested that pregnant women were not at a higher risk of complications due to COVID-19 infection, but recent investigations from Sweden and the US have indicated that pregnancy and postpartum period poses increased risk of severe complications associated with COVID-19 infection.¹⁻⁴

There has been reports of increased risk of pregnancy loss and preterm birth in pregnant women with severe or critical coronavirus disease infection.⁵ The Centers For Disease Control and Prevention (CDC) reported a higher risk of ICU admission and mechanical ventilation amongst pregnant women compared to non-pregnant women.⁶ Hence, preventing critical COVID-19 infection is important for both mother and fetus. Though, early neonatal COVID-19 infections are rare, but whether maternal immune response to infection protects the fetus remains unknown.⁶ The initial reports of severe acute respiratory syndrome due to coronavirus in third trimester showed that in newborns SARS-CoV-2 IgG were detected with negative IgM and negative results on polymerase chain reaction.⁷ It is not sure whether specific antibodies are transferred across the placenta following third-trimester maternal infection.⁷ Vaccination during pregnancy is common to prevent maternal and infant morbidity from other infectious diseases. There has been extensive vaccination against tetanus, diphtheria and pertussis (Tdap) in antenatal period in Nepal to prevent against infections like tetanus, diphtheria and pertussis in the neonate. The principle being antibody transfer following vaccination with Tdap vaccine.^{8,9} It has been a concern to prevent pregnant and lactating women against COVID-19. There has been debate regarding safety concerns with the vaccine against COVID-19 in this vulnerable group. COVID-19 vaccine development and regulatory approval are rapidly progressing. Thus, information and recommendations will evolve as more data are collected about these vaccines and their use in specific population, with the development of m-RNA vaccines against COVID-19, there has been a positive feeling among all health care workers.¹⁰ mRNA vaccines have potential benefits over inactivated, live-attenuated virus vaccines or subunit vaccines, and DNA-based vaccines, as there is no risk of acquiring infection from the vaccine.¹¹

Despite concerns about increased vulnerability of pregnant women to COVID-19, pregnant women are almost universally excluded in more than 300 clinical trials investigating potential therapeutic options.¹² After an explicit, evidence-based review of all available data, the Advisory Committee on Immunization Practices (ACIP) has issued interim recommendations for use of the Pfizer-BioNTech COVID-19 vaccine in persons aged ≥ 12 years for the prevention of COVID-19 (CDC 2021), the use of the Moderna-1273 COVID-19 vaccine in persons aged ≥ 18 years (CDC 2020), and the use of the Janssen (Johnson and Johnson) COVID-19 vaccine in persons aged ≥ 18 years (CDC 2021).^{13,14} Professional bodies like American college of Obstetricians and Gynecologist (ACOG) recommends that pregnant and lactating individuals who have access to COVID-19 vaccines, should be offered similar to non-lactating individuals.¹⁵ However counselling prior to the vaccination is very important, and pregnant and lactating women should be counselled regarding minor and major side effects of the vaccine and

the women decision should be respected if she refuses to take the vaccine. ACOG also recommends that there is no need to avoid initiation or discontinue breastfeeding in patients who receive a COVID-19 vaccine. The body also recommends that individuals who are actively trying to become pregnant or are contemplating pregnancy should be given vaccination.¹⁴⁻¹⁶ It is important that we record the outcomes of the effect of vaccination in pregnant and lactating women for further research and recommendations.¹⁷

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