



Short Communication

The need of COVID -19 vaccination in pregnant women

Brinderjeet Kaur^{1,*}

¹Dept. of Obstetrics & Gynaecology, Santokhba Durlabhji Memorial Hospital, Jaipur, Rajasthan, India



ARTICLE INFO

Article history:

Received 08-05-2021

Accepted 17-05-2021

Available online 11-06-2021

© This is an open access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

COVID-19 pandemic has posed distinct challenges in women's health care globally. The surge of pandemic amongst pregnant women calls for immediate attention and creation of righteous policies for safe guarding this vulnerable set of population.

Ever since the pandemic began, there was dearth of policies, guidelines, treatment protocols for pregnant woman. The American college of obstetricians and Gynecology (ACOG) recommended deferral of elective, non urgent surgeries to limit infectious exposures in view of high number of COVID-19 cases,¹⁻³ which were apt in initial phases but at the same time had apparent unfavourable outcome in the form of increase in the numbers of undesired & unplanned pregnancies. The surgeries for termination and surgical sterilizations took a back seat as they lack prioritization during the pandemic.⁴ The lockdown saw a steep rise in the fertility rate with a significant rise in the number of pregnant women now testing positive for COVID -19.

It was earlier proclaimed that the risk of COVID -19 infection to pregnant women and neonates is low with more than half of pregnant women who test positive for SARS -CoV -2 were asymptomatic but the newer research gives a different picture. In particular there is increase in virulence seen in the mutant strains of the SARS-CoV -2 virus. It is seen that new and mutant strains affects pregnant women more severely with some requiring ICU

admission. The risk of preterm birth is increased two to three fold for women with symptomatic COVID -19, due to medical recommendations to deliver early for improved maternal oxygenation. The emerging evidence from medical research is also suggestive that COVID-19 has potential for trans- placental infection as well as increased morbidity.⁵⁻⁸ It therefore mandates that pregnancy is considered as a priority group and efforts must be made judiciously, timely, backed with scientific evidence in formulating policies and guidelines that will enable health care to provide safe, prudent and timely remedy for this highly vulnerable group.

The availability of data pertaining to COVID-19 and pregnancy is scarce. If we look at policies and strategies to mitigate COVID-19 in pregnancy there is lack of consensus between evidence based medicine and precautionary preventive principles that have negative impact on health outcome in pregnancy. Pregnant woman have been excluded from large clinical trials related to COVID-19 which finds justification as per the international conventions and instruments pertaining to research activities for conducting trials – Nuremberg code, Helsinki declaration, CIOMS guidelines 1982 & ICMR -2002 guidelines as evident from US national Medicine Registry where nearly $\frac{3}{4}$ of the COVID-19 related clinical trials excluded pregnant woman.⁹ It however has unjustly sidelined pregnant woman and denied them opportunity to participate in clinical research even with previously studies interventions with steroids and hydroxyl chloroquine which has unfortunately resulted in paucity of research in COVID-19 pregnancy.¹⁰

* Corresponding author.

E-mail address: dr.bjkaur@gmail.com (B. Kaur).

For every policy and guideline formulation pregnant woman interests have been back seated citing them as ‘vulnerable group’ but does it justify that the decision to vaccinate or no vaccination is delayed? It is agreed that there is limited data on the safety of vaccine in pregnant women which is largely attributed to their exclusion from clinical trials but definitely it requires a knee jerk response in terms of vaccination now as mutant strains cause severe illness (observed in second and third waves in various countries) especially in pregnant women and not vaccinating these pregnant women pose a great risk both for the women and the growing fetus as already COVID-19 has ribbed apart the health care system of major developing and poor countries. The health care facilities of developed countries are also overwhelmed and if the authorities keep sitting thinking it causes mild illness in pregnant woman it would be insane.

The need of hour is serious deliberations as not only pregnancy is a vulnerable condition but pregnant women are more likely to have severe COVID-19 infection if they are overweight, obese (BMI more than 40kg/m²), have co morbidities such as diabetes (gestational diabetes), hypertension, asthma or are 35 years older. These factors put them at high risk category for COVID-19 infection.

Moreover, there are no known risk associated with administering inactivated, recombinant viral or bacterial vaccines or toxoids during pregnancy or while breast feeding. Most vaccines focus on immunization with the spike (S) protein, which is the main target for neutralizing antibodies. Neutralising antibodies that block viral entry into host cells through preventing the interaction between the spike protein Receptor Binding Motif (RBM) and the host cell Angiotensinogen –converting enzyme 2 (ACE2) are expected to be protective. The vaccines targeting the S protein – Pfizer BioNTech COVID -19 mRNA vaccine BNT162B2 and Moderna mRNA -1373 COVID -19 vaccine use mRNA platform, while Astra Zeneca COVID -19 vaccine uses an adenovirus vector. Since inactivated vaccines cannot replicate, they cannot cause infection in either the mother or the fetus. Astra Zeneca vaccine does contain live adenovirus vector but this virus is not replicating and will not cause infection to the mother or the fetus. Developmental and reproductivity testing of all these vaccines in animals have not raised any concerns. Adenovirus vector similar to that used in Astra Zeneca vaccine have been used widely to vaccinate women against Ebola without raising concern.

There is no available data indicate any harm on the use of COVID-19 vaccine during pregnancy, JCVI (Joint committee on vaccination and Immunization UK)¹¹ has therefore advised that pregnant women should be offered vaccination and that clinicians should discuss the risks and benefits of vaccination with the women. The Federation of Obstetric and Gynecological Societies of India (FOGSI) in their report advocated for vaccinating pregnant woman

recently.¹² Under the leadership of current FOGSI President series of webinars were hosted to discuss the impact of COVID -19 on pregnancy based on a registry of 3000 patients. Upon due deliberations and weighing the pros of cons of vaccinating pregnant women, FOGSI urged government to make a policy change and give clarity and uniformity to approach the issue pan India.

However, considering the rampant rage of the pandemic cutting all barriers of age and sex morbidity status and vulnerability. It is prudent that pregnant women and lactating mothers be vaccinated in the best interest of both the mother and the growing fetus. There is dire need of introspection at scientific and political level to formulate ethical just and rationale policies pertaining to vaccination of pregnant woman against COVID-19 infection based on personal choice, maximizing benefit, minimizing harm and giving each pregnant woman a due for her abidance to ethical principles of autonomy, beneficence and justice.

1. Sources of Funding

Nil.

2. Conflict of Interest

Nil.

References

- Centers for Medicare & Medicaid Services. CMS adult elective surgery and procedures recommendations. Available from: <https://www.cms.gov/files/document/covid-elective-surgery-recommendations.pdf>.
- American College of Surgeons. COVID-19: recommendations for management of elective surgical procedures. Available from: <https://www.facs.org/covid-19/clinical-guidance/elective-surgery>.
- American College of Obstetricians & Gynecologists. Joint statement on elective surgeries. Available from: <https://www.acog.org/news/news-releases/2020/03/joint-statement-on-elective-surgeries>.
- Pennsylvania Department of Human Services. Electives services should not be provided during the COVID-19 emergency disaster. Available from: <https://www.dhs.pa.gov/providers/Providers/Documents/Coronavirus%202020/Elective%20procedures%20during%20COVID%20203.26.20.pdf>.
- Chen H, Guo J, Wang C, Luo F, Yu X, Zhang W, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *Lancet*. 2020;395:809–15.
- Breslin N, Baptiste C, Gyamfi-Bannerman C, Miller R, Martinez R, Bernstein K, et al. Coronavirus disease 2019 infection among asymptomatic and symptomatic pregnant women: two weeks of confirmed presentations to an affiliated pair of New York City hospitals. *Am J Obstet Gynecol MFM*. 2020;2(2):100118. doi:10.1016/j.ajogmf.2020.100118.
- Ellington S, Strid P, Tong VT, Woodworth K, Galang RR, Zambrano LD, et al. Characteristics of Women of Reproductive Age with Laboratory-Confirmed SARS-CoV-2 Infection by Pregnancy Status — United States, January 22–June 7, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(25):769–75. doi:10.15585/mmwr.mm6925a1.
- Vivanti AJ, Vauloup-Fellous C, Prevot S, Zupan V, Suffee C, Cao JD, et al. Transplacental transmission of SARS-CoV-2 infection. *Nature Communications*. 2020;11(1):3574–3574. Available from: <https://www.nature.com/articles/s41467-020-18357-4>.

- [//dx.doi.org/10.1038/s41467-020-17436-6](https://dx.doi.org/10.1038/s41467-020-17436-6). doi:10.1038/s41467-020-17436-6.
9. Einav S, Ippolito M, Cortegiani A. Inclusion of pregnant women in clinical trials of COVID-19 therapies: what have we learned? *Br J Anaesth*. 2020;125(3):e326–8. doi:10.1016/j.bja.2020.05.020.
 10. Farrell R, Michie M, Pope R. Pregnant Women in Trials of Covid-19: A Critical Time to Consider Ethical Frameworks of Inclusion in Clinical Trials. *Ethics Hum Res*. 2020;42(4):17–23. doi:10.1002/eahr.500060.
 11. Available from: <https://www.nhsinform.scot/covid-19-vaccine/the-vaccines/pregnancy-breastfeeding-and-the-coronavirus-vaccine>.
 12. Available from: <https://www.deccanherald.com/state/allow-pregnant-lactating-mothers-to-be-vaccinated-federation-980590.html>.

Author biography

Brinderjeet Kaur, Consultant

Cite this article: Kaur B. The need of COVID -19 vaccination in pregnant women. *Indian J Obstet Gynecol Res* 2021;8(2):289-291.