Acceptance and Attitudes for Covid 19 Vaccine in Pregnant Women Attending Tertiary Care Public Health Setup

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Abstract:-

Background: Many years have passed since the severe acute respiratory syndrome coronavirus 2 pandemic started, no specific treatment against the disease is available. Pregnant women are at increased risk of severe disease, intensive care unit admission, and invasive ventilation when compared with non-pregnant patients of the same age. Therefore, pregnant women are classified as a high-risk population for COVID-19 infection.

Methodology: This Cross-sectional study was conducted at Department of Obstetrics & Gynecology, PIMS MCH, Islamabad for a period of three months. Structured questionnaire was given to partcipants which focused on demographics, medical comorbidities, perception of COVID-19 infection and risk of infection, barriers to vaccination, preferred source of medical information, vaccine acceptance, vaccine uptake, and reasons for unwillingness to receive the COVID-19 vaccine decision.

Results: The study included a total of 200 pregnant women. The mean age of the participants was 25 years, ranging from minimum age of 19 years to maximum age of 37 years. Reasons for vaccine refusal varied, with 15.3% of individuals citing side effects, 20% citing that it was not safe during pregnancy, and 13.8% citing possible infection from the vaccines.

Conclusion: COVID-19 vaccination during pregnancy presents an opportunity to protect both maternal and fetal health, based on available evidence and current understanding. While data on vaccine safety during pregnancy is growing, it is important to acknowledge that research is ongoing, and recommendations may evolve as new information emerges.

Keywords: - COVID-19, Vaccination, Pregnancy, Acceptance.

I. INTRODUCTION

COVID-19 is an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in the city of Wuhan, Hubei Province, China, and has since evolved into a global pandemic. Many years have passed since the pandemic began. However, no targeted therapy is still available. According to WHO, around 2 million individuals have succumbed to this deadly disease up to 2021[1]. Therefore, effective measures need to be established to battle against this disease.

COVID-19 symptoms vary widely and can range from mild to severe. Common symptoms include fever, cough, shortness of breath, fatigue, muscle or body aches, loss of taste or smell, sore throat, and headache. Some people with COVID-19 might remain asymptomatic (showing no symptoms). While many individuals experience mild symptoms or even no symptoms, some people, particularly older adults and those with underlying health conditions, can develop severe respiratory illness, including pneumonia. Severe cases can lead to hospitalization and even death.

Preventive measures include wearing face masks, practising physical distancing, washing hands frequently with soap and water for at least 20 seconds, avoiding close contact with sick individuals, and following public health guidelines and regulations. Without a successful treatment for Coronavirus, these non-interventional techniques non-drug are mainstay infectious prevention.

COVID-19 has had significant social, economic, and health impacts worldwide. Lockdowns, travel restrictions, and other measures were implemented by many countries to slow the spread of the virus. Healthcare systems have been strained due to the influx of patients with severe illness. Multiple vaccines have been developed and authorized for emergency use to prevent COVID-19. These vaccines have proven to be effective in reducing the risk of severe illness, hospitalization, and death. Vaccination efforts are a critical component of controlling the spread of the virus and ending the pandemic[2].

The global response to the COVID-19 pandemic has been multifaceted, with vaccination campaigns playing a crucial role in curbing the spread of the virus and preventing severe illness. However, the successful execution of vaccination programs relies not only on the availability of vaccines but also on the willingness of the public to accept and receive them. Vaccine acceptance, or hesitancy, has emerged as a significant factor in determining the overall effectiveness of these efforts.

One of the most critical factors affecting vaccine acceptance is the perception of a vaccine's safety and efficacy. Public confidence in vaccines can be shaken by misinformation, vaccine side-effect rumors, and concerns about rushed development. To address this, transparent communication from health authorities, sharing data from clinical trials, and highlighting the rigorous regulatory processes in place are essential. The trust people place in government health agencies, medical professionals, and scientific institutions strongly influences their willingness to accept vaccines. Mistrust in these entities due to historical injustices, political considerations, or prior negative experiences with healthcare can lead to vaccine hesitancy[3].

In the digital age, misinformation spreads quickly through social media platforms. False claims about vaccines, conspiracy theories, and anecdotal stories can create doubts in people's minds. Combatting misinformation requires accurate, accessible, and easy-to-understand information campaigns. Cultural norms and religious beliefs can impact vaccine acceptance. Some communities might have concerns about the ingredients in vaccines or might perceive vaccination as contradicting their cultural or religious values. Engaging community leaders and religious figures to endorse vaccines and address concerns can help mitigate hesitancy[5].

The accessibility of vaccines, including factors like location, cost, and ease of scheduling appointments, can significantly influence vaccine acceptance. Efforts to make vaccines widely available, even in underserved areas, and removing logistical barriers can increase uptake. In regions where the virus's impact has waned, some individuals might perceive COVID-19 as less of a threat, leading to complacency regarding vaccination. Ongoing educational campaigns that emphasize the importance of continued vaccination efforts can counter this attitude[5].

Pregnancy is characterized by significant physiological changes that impact the immune system. These changes are designed to support fetal development but may inadvertently affect a woman's ability to fight off infections. Hormonal shifts and changes in lung capacity can make pregnant women more susceptible to respiratory infections, including COVID-19. Moreover, the immune system's adaptive response may be altered, potentially leading to a heightened inflammatory response upon infection. Research has shown that pregnant women infected with COVID-19 are at an increased risk of developing severe illness compared to their non-pregnant counterparts. This includes a higher likelihood of requiring intensive care, mechanical ventilation, and an increased risk of preterm birth. The risk of severe outcomes is particularly pronounced during the third trimester[6].

The introduction of COVID-19 vaccines has brought immense hope in the battle against the pandemic. However, a unique challenge has emerged with regards to vaccine acceptance among pregnant women. Vaccine hesitancy within this group stems from concerns about the potential effects of the vaccines on maternal and fetal health. Addressing these concerns and ensuring accurate information dissemination are crucial for achieving optimal vaccination coverage and protecting both maternal and infant well-being.

Given the increased morbidity associated with COVID-19 in pregnancy, understanding pregnant women's perceptions of and attitudes toward COVID-19 vaccination in pregnancy is vital to optimizing vaccine uptake. This study aims to evaluate the attitudes of pregnant women regarding acceptance and hesitancy for covid 19 vaccine in a public health setup.

II. MATERIAL AND METHODS

This cross-sectional study was conducted at the Department of Obstetrics & Gynaecology, PIMS MCH, Islamabad, over a three-month period. The study aimed to assess COVID-19 vaccine hesitancy among pregnant patients attending antenatal appointments. Convenience sampling was used, implying that participants were selected based on their availability and willingness to participate during their regular antenatal appointments.

The survey questionnaire used in the study was based on the WHO tool but modified to suit the local context and focus on COVID-19 vaccine hesitancy[7]. It included questions about demographics, medical history, perception of COVID-19 infection and risk, barriers to vaccination, preferred sources of medical information, vaccine acceptance, vaccine uptake, and reasons for unwillingness to receive the COVID-19 vaccine. The Principal Investigator administered the questionnaire to the participants during their antenatal appointments.

Survey responses were presented as counts and percentages for categorical variables, and continuous variables were summarized using means and standard deviations. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to determine the odds of COVID-19 vaccine acceptance and uptake for all variables. A statistical significance level of $p < 0.05$ was used. The study primarily aimed to understand the factors influencing COVID-19 vaccine acceptance and uptake among pregnant patients. The collected data included both quantitative and qualitative information to gain a comprehensive understanding of vaccine perceptions.

III. RESULTS

The study enrolled a total of 200 pregnant women. Mean age of participants was 25 years, ranging from minimum 18 years of age to maximum of 37 years. The mean parity was 2.2. The majority of husbands were employed (n = 156), while a smaller proportion were unemployed (n = 44). The sample comprised individuals from various ethnic backgrounds, with 69% identifying as Punjabi, 5% as Sindhi, 15% as Pathan, and 11% as Kashmiri. Regarding the gestational stage during COVID-19 diagnosis, 25% were in the first trimester, 55% were in second trimester, and 20% were in the third trimester.

In terms of socioeconomic status, 42 participants had a monthly income of up to 10,000 rupees, whereas 2 patients had a monthly income from 10,000-20,000 rupees and 30 patients had an income of more than 40,000 rupees. The majority of the patients (n=126) had an income between 20,000-40,000 rupees. The education level of the pregnant individuals varied, with 33% having a primary school education, 8 patients being illiterate, 40% having secondary level education, and 23% having a tertiary education. Prior COVID-19 infection was reported by 20% of the participants, while the remaining 80% had no previous infection history. Pre-existing comorbidities were present among the participants, with 19% reporting hypertension, 5% reporting diabetes mellitus, 6% reporting GDM, 1% reporting hepatitis, 1% reporting ITP, and 5% reporting obstetric cholestasis. 63% of patients had no comorbids.

Regarding vaccination, 60% of the pregnant individuals received the COVID-19 vaccine, while the remaining 40% remained unvaccinated, and 71% of the husbands of the patients were vaccinated. Among the vaccinated individuals, 41.0% had received one vaccine dose, 48.7% had received two doses, and 10.2% had received a booster. The types of vaccines administered included Sinopharm (38.4% of vaccinated individuals), Sinovac (38.4% of vaccinated individuals), and Pfizer (23.08% of vaccinated individuals). Reasons for vaccine refusal varied, with 15.3% of individuals citing side effects, 20% citing that it was not safe during pregnancy, and 13.8% citing possible infection from the vaccines.
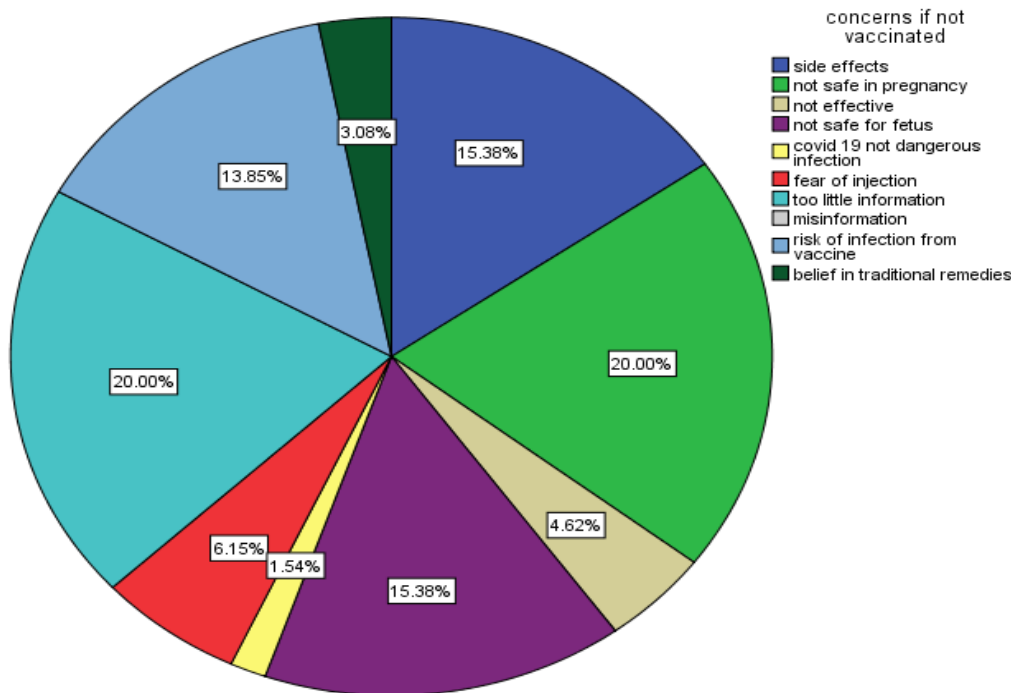

Fig 1 Vaccination Result

IV. DISCUSSION

The COVID-19 pandemic had a profound impact on global health, and pregnant individuals have been particularly concerned about their vulnerability to the virus. As vaccination efforts continue worldwide, questions arise regarding the safety and efficacy of COVID-19 vaccines for pregnant individuals and their unborn babies. In this discussion, we will explore the current knowledge about COVID-19 vaccination during pregnancy, weighing the potential benefits against the potential risks.

Pregnancy inherently alters a woman's immune system, making expectant mothers more susceptible to respiratory infections, including COVID-19. Moreover, pregnant individuals who contract the virus may experience more severe symptoms and increasing risk of complications, such as preterm birth and preeclampsia[8].

COVID-19 vaccines, developed based on rigorous research and clinical trials, can help protect pregnant individuals from the potentially severe consequences of COVID-19. While clinical trials generally exclude pregnant individuals, emerging data from real-world experiences and

observational studies have shown encouraging results regarding COVID-19 vaccination during pregnancy. These studies suggest that the vaccines are safe and effective in protecting pregnant individuals from COVID-19 without notable adverse effects on pregnancy outcomes[9]. Additionally, antibodies generated from vaccination have been detected in the umbilical cord and breast milk, potentially providing passive protection to newborns.

There are several types of COVID-19 vaccines available globally, including mRNA vaccines (e.g., Pfizer-BioNTech, Moderna) and vector-based vaccines (e.g., AstraZeneca, Johnson & Johnson). Pregnant individuals should consult their healthcare providers to discuss the available vaccine options and make an informed decision based on individual circumstances and regional recommendations. While mRNA vaccines have been extensively studied and administered during pregnancy without concerning safety signals, data on vector-based vaccines are more limited[10].

Studies evaluating vaccine safety in pregnant women have provided reassuring results. According to a study[11], the Pfizer-BioNTech and Moderna mRNA vaccines appeared safe for pregnant women, showing no increased risk of adverse outcomes compared to the general population. These findings played a pivotal role in increasing vaccine acceptance among expectant mothers.

The decision to receive a COVID-19 vaccine during pregnancy should be based on an individual's assessment of risks and benefits, in consultation with healthcare providers. Factors such as the prevalence of COVID-19 in the community, personal health conditions, and occupational exposure should be taken into account[12]. Open and honest discussions between healthcare providers and pregnant individuals can help address concerns, provide accurate information, and support shared decision-making.
COVID-19 vaccination during pregnancy presents an opportunity to protect both maternal and fetal health, based on available evidence and current understanding. While data on vaccine safety during pregnancy is growing, it is important to acknowledge that research is ongoing, and recommendations may evolve as new information emerges[13]. Pregnant individuals are encouraged to consult with their healthcare providers to discuss the benefits, risks, and individual circumstances related to COVID-19 vaccination, ensuring informed decision-making in the best interest of their health and the health of their babies.

V. CONCLUSION

The acceptance and attitudes towards COVID-19 vaccination in pregnant women attending tertiary care public health setups are critical in safeguarding maternal and fetal health during the pandemic. Clear communication, targeted education, and collaboration between healthcare providers and public health authorities can improve vaccine acceptance rates and mitigate the impact of COVID-19 on pregnant women and their babies. By addressing concerns and providing reliable information, we can enhance vaccination rates and promote better health outcomes for both expectant mothers and their unborn children.

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