PREGNANCY DURING THE PANDEMIC

Introduction

The COVID-19 pandemic has brought unprecedented general interest in the consequences of infection with the COVID-19 virus on pregnant women and their babies. However, given prevailing uncertainties, studies suggest that pregnant women may be at a lower risk than prior pandemics. In this article, Hannes Schwandt presents arguments for and against pregnancy during a pandemic. This paper comprehensively reviews and evaluates the arguments proposed by Hannes Schwandt in his article "Pregnancy during Pandemic". This article, published in June 2020, compares the effects of COVID-19 and the 1918 influenza pandemic on pregnant women and their babies. Schwandt attempts to assess early imminent risks for mothers and infants during COVID-19 by relying on available evidence until the article is written. He concludes that there might be a reason to believe gently that COVID-19 may not have devastating consequences like the 1918 flu. However, he admits that there is insufficient data, and the scope for further research to back up this doubtful assessment remains broad. This paper will discuss Schwandt's key arguments and assumptions, primarily his comparisons between COVID-19 cases and the 1918 pandemic. It will then provide a critical review of his claims, the evidence used and possible alternative tests. Schwandt's argument takes a soberly optimistic tone as he considers several areas of uncertainty, touching on the unique effects COVID-19 has on maternal immunity and fetal development. Much more significant research is still needed to understand better the potential long-term effects of in-utero exposure to COVID-19.

Description of Author's Arguments and Assumptions

Schwandt begins his article by recognizing that people are concerned about how pregnant women and their babies are affected by COVID-19 infections. The concern highly arises because of over 2.5 million pregnant women in the United States. He revises vast previous studies about maternal health issues during the period of pregnancy, leading to negative results for both mothers and children. Schwandt highlights the 1918 influenza pandemic as a helpful case study due to its harsh effects on pregnant women and lasting health impacts among babies exposed in utero. As his core argument, Schwandt claims that available data on COVID-19 infections in pregnant women enables "cautious optimism" about lesser relative harms than seen with Influenza. Vulnerable groups, including pregnant women and their fetuses, are at risk during outbreaks of pandemics and endemic infectious diseases (Dashraath et al., 2020). Schwandt claims that substantial studies about the fetal origin hypothesis indicate pregnancy conditions could have lifelong effects on offspring health and development. For instance, he states that a study by Almond conducted in 2006 revealed reduced income and increased course of disabilities in adulthood among cohorts exposed to the influenza virus as they developed in utero (Schwandt,2020). According to Gholami et al. (2023), the COVID-19 pandemic led to birth, postpartum, and pregnancy complications, leading to an increased rate of morbidity. With these findings in mind, Schwandt adds that there is understandable concern about the potential harm to infants born during this pandemic. He, however, holds that given the current evidence as it was at the time of writing this article, "cautiously optimistic" observations may be made about the impacts of COVID-19 on pregnancies and newborns compared to the 1918 pandemic (Schwandt, 2020). He presents several main points as evidence for this cautious appraisal.

Schwandt first highlights that the observed mortality from COVID-19 among pregnant women based on early data appeared to be low. Darmawati et al. (2022) show that

about one-third of the total pregnant women died from the pandemic. Schwandt cites research that reveals the majority of pregnant women diagnosed with COVID-19 develop only mild symptoms; many do not have any symptoms at all. His report also cites case studies of infants born from COVID-19-positive mothers who were negative at birth and displayed no symptoms or health complications. Another important highlight in Schwandt's analysis is the comparison of Influenza – COVID-19 to pregnant women's immune responses. Schwandt contrasts COVID-19 mortality patterns more in-depth with deaths during the 1918 flu pandemic. He provides New York City COVID-19 deaths for February through May 2020, illustrating meagre fatality rates among women less than 35 years old. Female mortality rates due to COVID-19 are light for those below 25 years of age but exponentially with the increase in their age (Schwandt, 2020). COVID-19 mortality rates were over 740 per 100,000 for women aged 65 and over. On the other hand, a plot by Schwandt shows that young adult mortalities were high during 1918 influenza cases in Philadelphia, especially among pregnant women. Stillbirths were even doubled as many mothers fell seriously sick.

Schwandt argues that the immune systems of pregnant women reacted much more intensively than they had responded to the 1918 influenza virus – Schwandt concludes that given the mild symptoms and less severe clinical presentation in pregnancy populations, COVID-19 trigger an inflammatory immune dysregulation associated with influenza viruses (Schwandt, 2020). This could reach the point of disrupting fetal growth without having an apparent severe motherly illness. He thinks the constrained immune response to COVID-19 nowadays is a positive signal, which means low risk for babies in utero. According to him, this milder presentation of maternal disease also confirms that babies will not be considerably affected by COVID-19 infections during pregnancy. He suggests that the mild maternal immune response observed could prevent damaged placentas associated with severe inflammation. In contrast, Schwandt warns that this may not affect fetal development

immediately, though it might occur later in life for the child. Further studies are still needed to fully describe the nature of COVID-19's effects on maternal and placental inflammation during pregnancy, including its consequences on fetal outcomes.

In summary, Schwandt's tentative assessment of lower risks from COVID-19 is centred on two key assumptions: Pregnant women's immune systems respond less sturdily towards COVID-19 than they do with Influenza, and a more modest or milder reaction is better for the unborn fetus. Thus, he concludes that one can outline some reasons to be cautiously optimistic about outcomes of in-utero exposure to COVID-19 while acknowledging significant gaps in knowledge as this is the early stage of such a pandemic.

Assessment of Assumptions and Claims

Schwandt provides a robust initial overview of the risks that COVID-19 poses to pregnant women and infants based on available data from mid-2020. However, his assumptions and comparisons to the 1918 influenza pandemic warrant deeper evaluation as more data emerges. First of all, though Schwandt assumes that a milder reaction from the immune system is beneficial for fetal growth, other scientists claim that what might help facilitate are more robust responses which help to get rid of such infection and ensure the safety of the fetus (Rasmussen et al., 2020). Poor immune activation or delayed viral elimination might be why only a few symptoms are observed in pregnant women with COVID-19. This may render the fetus more prone to direct COVID-19 infection or transplacental transmission. In order to better understand COVID-19 9 connection with maternal and fetal immunity, studies should be done looking at the immune responses and viral load kinetics in infected pregnant women directly.

Second, Schwandt pays significant attention to mortality rates and acute health outcomes as risk markers. Further studies, however, have focused on issues surrounding increased maternal stress and anxiety depression or postpartum, which could affect fetal neurodevelopment as well as child outcomes (Kolker et al., 2021). In the time of pandemic COVID -19, generalised anxiety disorder has been reported to occur 3 – 4 times more frequently in pregnant women than in others (Arzamani et al., 2022). Depression symptoms in pregnant women during the COVID-19 pandemic were reported to range between 40%-57%, and those of anxiety ranged from 60%-81% (Reynolds et al., 2022). These negative long-term results could affect emotional growth far from the neonatal period. The COVID-19 pandemic's impact on mental well-being may be further compared to an individual with pre−existing mental health illness. It can be elevated by social isolation caused by restrictions in place (Atmuri et al., 2022). According to Stockholm et al. (2021), this isolation and social distance can result in increased pressure on pregnant women. Poor birth outcomes may also be due to economic hardships and disruptions in prenatal care during the pandemic. Of course, if they have subtle but lasting effects on the infants exposed to them, more attention should be paid towards them. Third, although Schwandt recognises that over time, there may be identifiable effects on these babies not present at birth, tracing lengthwise how children born during this period develop and maintain their health will be necessary. The babies in the 1918 study by Almond were born healthy but later developed adult health complications from developmental changes that occur during utero (Schwandt, 2020). Similarly, organised cohort studies tracking children exposed to COVID-19 during pregnancy over the years would facilitate more accurate risk evaluation.

Schwandt's comparisons between COVID-19 and the 1918 influenza hold some logic; however, they have residual shortcomings. These two outbreaks differ vastly in the viruses, social conditions and medical capabilities. The data indicates differences in pregnant

women's immune responses to COVID-19 compared to Influenza, but it is unclear if the final developmental impacts on fetuses exposed would be different. Relationships will be clarified over time as surveillance of birth outcomes and child development milestones continues. In this early phase of the pandemic, Schwandt provides a helpful and encouraging basic assessment of COVID-19 risks in pregnancy. Recent studies reveal that COVID-19 still poses numerous risks to pregnant women and their babies. However, his assumptions must be further examined by conducting long-term pediatric studies, immune profiling, and monitoring future maternal and child health outcomes. Although grounds for cautious optimism exist, more robust evidence is still needed to support any firm conclusions about the potential lasting impacts of in-utero COVID-19 exposure.

Alternative possible tests

Although Schwandt's initial optimism in the early stages of the pandemic about COVID-19 posing no risks to expectant mothers, further research has shown that there are several uncertainties and higher risks compared with other populations who were not pregnant. COVID-19-infected pregnant women are more prone to severe disease with an increased possibility of preterm birth and a greater risk towards maternal or fetal death (Rad et al., 2021). Further research is still needed to establish the effects of COVID-19 on pregnancy outcomes conclusively. Some examples of additional studies that could help provide more conclusive evidence include a detailed assessment of motherly morbidity and mortality, prospective studies monitoring fetal impacts, investigating indirect impacts on birth outcomes, elucidating biological mechanisms, studying long-term outcomes in children, and developing improved therapeutics for pregnant women.

Detailed Assessment of Maternal Morbidity and Mortality

As the critical assessment points out, data on mortality alone might fail to capture actual disparities in maternal disease intensity. More conclusive evidence could be provided

if extensive cohort studies tracked laboratory-confirmed COVID-19 infections among pregnant and non-pregnant women, allowing comparisons of hospitalisation rates, interventions such as mechanical ventilation, the duration spent at hospitals and long-term complications following recovery. These morbidity indicators can indicate possible vulnerabilities of pregnant women even if the mortality rates seem to be pretty low. Capturing ethnicity and other demographic data would also uncover anomalies. Expanding these cohorts globally would allow for variability in healthcare access. Relatedly, more standardised reporting and analysis of maternal mortality linked to COVID-19 would assist with quantifying this unusual but tragic outcome. Most countries lack dedicated systems for maternal death reporting; thus, counting might be done.

Prospective Studies Monitoring Fetal Impacts

Although case reports have offered preliminary reassurance, large-scale prospective cohort studies that follow women infected at various stages of pregnancy would be more suitable in identifying potential threats posed to the fetus. The tracking of infants up to at least their first year could reveal such subtle effects on the development of the fetus right from birth, early-born babies, genetic disabilities and delayed growth that are not obvious immediately shortly after delivery. To conclusively determine the risks of vertical transmission, testing placental tissues, amniotic fluid, umbilical cord blood and breastmilk are also necessary for these studies. Little is known about the impact and role of the placenta in COVID-19 infection and the transmission of the virus through breast milk (Wastnedge et al., 2020). Traditional syntheses would be provided through Cochrane systematic reviews of all evidence on COVID-19 and pregnancy outcomes.

Investigating Indirect Impacts on Birth Outcomes

As mentioned in the critical evaluation, the indirect effects of a pandemic might affect birth outcomes even if there was no direct viral infection. Possible confounding factors can be problems with prenatal and postpartum care, the impact of mental health in social isolation, potential delays in seeking care due to fear of infection, and economic stressors along with malnutrition. For example, it was essential to understand pregnant women's fears in the first period of the COVID-19 pandemic (Folch Ayora et al., 2021). Prospective cohort studies could evaluate data on birth to determine trends and results during pre-pandemic versus pandemic periods. However, prospective cohorts with frequent surveys could isolate certain indirect variables that contribute to worse outcomes. It would also be possible to clarify impacts on birth outcomes using natural experiment designs based on variations in lockdown restrictions. Combining self-reported stress levels, incomes, nutrition quality and access to care could reveal significant mediating factors.

Elucidating Biological Mechanisms

Although previous outbreaks allow for some comparisons, more molecular virology and immunology analyses could help identify how COVID-19 affects pregnant women and fetuses. Experimenting in vitro with models of maternal-fetal barriers and placental tissue would clarify risks associated with vertical transmission (Kotlyar et al., 2021). Mechanisms of direct fetal injury may also be identified in animal models, even without transmission. The comparisons of immune responses in pregnant vs non-pregnant women could reveal the increased exposure. Of course, placement mechanisms would also enable the development of treatments to reduce risks.

Studying Long-Term Outcomes in Children

For several years, children born to infected mothers could be tracked through prospective cohort studies. Regular comprehensive pediatric assessments could detect the higher risk of chronic conditions such as asthma, neurodevelopmental delays, behaviour disorders, obesity and impaired metabolic or immune function. Comparing against unexposed children would correct for unexpected environmental confounders. If no differences are noticed, it would give the much-needed confidence that COVID-19 poses little fetal risks. However, finding significant long-term health effects would show some additional risks not visible soon after birth and require attention to early screening and actions.

Developing Improved Therapeutics for Pregnant Women

The pandemic shows a lack of information on safe and effective treatment methods for pregnant women and those who breastfeed. Despite increasing vaccination uptake, many therapies are considered unsafe or poorly studied during pregnancy. Better research on treating monoclonal antibodies and antiviral medicines during pregnancy could also enhance options for treating severe illness. Protecting neonates from potential COVID-19 infection and developing highly efficient vaccination strategies among women depend on how maternal antibodies produced against COVID-19 infection can pass through the placental barrier during pregnancy (Flannery et al., 2021). In turn, pregnant women could also be included in properly designed controlled trials of novel therapies. Include pregnancy registries and post-authorisation monitoring to capture any long-term effects on offspring. In the long run, if efficacious and safe treatment for pregnant women were developed – one that caters to their specific needs – it would significantly enhance outcomes during current and future pandemics.

Conclusion

Hannes Schwandt is positive in the article "Pregnancy during the pandemic." He asserts that findings in mid-2020 showed a more optimistic path than previous pandemics, such as the 1918 influenza outbreak. He, in particular, points out low mortality rates among pregnant women from COVID-19 and early studies that show healthy babies born to infected mothers. However, a critical evaluation reveals that Schwandt might overlook the severity of risks associated with severe maternal illness, fetal complications and indirect pandemic effects, which have been more pronounced as research has continued. Even though mortality rates are low, pregnant women can still suffer the risks of hospitalisation and long-term problems. There are emerging facts indicating that the fetal risks go beyond direct viral transmission, such as disrupted prenatal care, stress and economic stability. Schwandt's fundamental insight that COVID-19 differs from some past pandemics in pregnancy outcomes is valid. Pregnant women are indeed seen as less inherently vulnerable to severe COVID-19 disease compared to illnesses such as flu. However, there are several uncertainties regarding maternal morbidity risks to the baby and indirect effects that demand further research through longitudinal studies, experiments in virology, and improved COVID-19 therapeutics designed for pregnant. A certain guarded optimism is justifiable. However, since evidence gaps are still present, cautious vigilance as well as strategies towards mitigation are pertinent in ensuring the safety of maternal and child health. Pregnancy risks during the pandemic seem to be much more complicated than it was initially considered. With proper further research and complementary policies related to the support of pregnant women, authentic positive results can be achieved despite this ongoing crisis.

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