Letter to the Editor

What the Physician Needs to Know About Covid-19 and Pregnancy

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The global pandemic caused by the severe acute respiratory syndrome, corona virus 2 (SARS-CoV-2,) has been growing at an accelerated rate, affecting 8 million people in more than 180 countries to date (June 2020).The substantial mortality rate warrants identification of vulnerable population groups and the appropriate protection of society (1).

Research from previous human coronavirus outbreaks, such as the Severe Acute Respiratory Syndrome (SARS-CoV) and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV), has demonstrated that pregnant women and their foetuses have a particularly poor outcome. The SARS-CoV-1 outbreak (during 2002-2003) was associated with a high maternal mortality rate and a case fatality rate of 25%, spontaneous miscarriages during the first trimester and intrauterine growth restriction in the second and third trimesters (2). MERS-CoV infection also reported a high admission to intensive care units and a high mortality rate. Alfaraj et al (2019) reported a case series of 11 patients with MERS-CoV infection, with a case fatality of 35% for pregnant women and 27% for the infants (3).

Based on those observations' obstetricians were immediately on high alert when the first cases of COVID-19 were reported from Wuhan, Hubei Province, in China. The physiological changes occurring during pregnancy makes the mother vulnerable to severe infections. The increase in the transverse diameter of the thoracic cage, and elevated level of the diaphragm, decrease the maternal tolerance to hypoxia. Vasodilation can lead to mucosal oedema and increase upper

respiratory tract secretions. In addition, alterations in the cell-mediated and innate immunity lead to increased susceptibility in pregnant women to being infected with pathogens such as viruses (4). The immaturity of the adaptive and innate immune system also makes the foetus and newborn highly susceptible to infections (5).

In the past months, a number of cases were reported and summarized by Zaighan and Anderson in a systematic review in April 2020 (6). Eighteen articles reporting data from 108 pregnancies between 8 December 2019 and 1 April 2020 were included in this review. Most of the reports described women presenting in the third trimester with fever (68%) and cough (34%). Elevated C-reactive protein was observed in 70% and lymphopenia in 59%. Ninety-one percent of these women were delivered by Caesarean section. Three maternal intensive care unit admissions were noted but no maternal deaths were reported. One intrauterine death and one neonatal death were reported. Based on the data available there is inconclusive evidence on vertical transmission. However, these cases were all women with no pre-existing cardiovascular disease such as unoperated or operated congenital heart disease, rheumatic heart disease or a pre-existing cardiomyopathy.

Since 2010 we do a weekly cardiac disease in maternity clinic at Groote Schuur Hospital. This is a combined clinic which includes obstetricians, cardiologists and anaesthetists and the outcome of those patients has been reported (7, 8). We have continued with this clinic since the COVID outbreak and, thus far, we have not seen an increase in morbidity and mortality due to any viral infections. However, we are on high alert. Women that present with shortness of breath or signs of cardiac failure are still undergoing echocardiography using protective measurements for the patients, as well as the physician. We are particularly careful not to miss early clinical symptoms and signs in women that are overweight, hypertensive or have glucose-intolerance, as data suggest that patients with those co-morbidities have a poor outcome if they are infected with COVID. All women presenting with cough, fever, severe headaches of other signs suggestive of a viral infection undergo COVID testing with viral PCR. If

they are found to be positive, they are advised to self-isolate and contact tracing is implemented.

In conclusion, based on current data available, careful monitoring of pregnant women with Covid-19, and measures to prevent neonatal infections are warranted. Women with pre-existing cardiovascular conditions need special attention if they have co-morbidities such as obesity, hypertension or impaired glucose tolerance.

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