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Mini Reveiw

Covid 19 and Pregnancy

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Abstract

Introdution: The Novel coronavirus (SARS-COV-2) is a new strain of coronavirus causing Coronavirus disease (COVID-19) first identified in Wuhan City of China and eventually was declared as a pandemic by the WHO on 11 March 2020. It has reached 210 countries and territories with more than three million cases and over 2,00,000 deaths . As of 27th of April in Egypt there are about 4782 cases with 337 deaths and 1236 recovered cases, In India there are 28,380 cases with 886 deaths and 6523 recovered cases. With this pandemic assuming a crisis of global proportions unprecedented in recent times and presenting a challenge in its control and management it will be inevitable that we will be seeing women infected with COVID-19 in pregnancy as they are proportion of this population. Unlike many of the other specialists obstetricians face the situation that matters related to childbirth cannot be delayed indefinitely. The maternity healthcare providers and facilities hence need to prepare for the situation with a view to prevent the consequences of the infection on the mother and her new-born. The article reviews the clinical features, testing criteria, preventive aspects, effects of the infection on mother and the foetus, the current management options including the general measures, pharmacological options, preparedness of the institutions, antenatal management, intrapartum and post-partum management in these patients in the light of available evidences

Conclusion : The COVID 19 virus is a new strain of corona virus, little is known today about its effect on the outcome of pregnancy. Further clinical and research data are awaited for better understanding of any morbid effect of this new strain and its health hazards on both the mother and neonates.

Keywords: COVID 19 , Pregnancy ,Preterm , Delivery.

Introduction

The Novel coronavirus (SARS-COV-2) is a new strain of coronavirus causing Coronavirus disease (COVID-19) first identified in Wuhan City of China]1[. It was declared as a pandemic by the WHO on 11 March 2020]2[. Now it has reached 210 countries and territories with more than three million cases and over 2, 00,000 deaths]3[. As of 27th of April in Egypt there are about 4782 cases with 337 deaths and 1236 recovered cases, In India there are 28,380 cases with 886 deaths and 6523 recovered cases]3[. With the pandemic assuming a crisis of global proportions unprecedented in recent times and presenting a challenge in its control and management it will be inevitable that we will be seeing women infected with COVID-19 in pregnancy as they are proportion of this population. Unlike many of the other specialists obstetricians face the situation that matters related to childbirth cannot be delayed indefinitely. The maternity healthcare providers and facilities hence need to prepare for the situation with a view to prevent the consequences of the infection on the mother and her new-born. Of the scientific articles being published on the Coronavirus infection, a few have addressed the issue in pregnant women]4[.

Clinical Presentation

The mean incubation period is 5 to 7 days]5[. At the time of every patient contact healthcare workers should enquire about features of severe acute respiratory illness (SARI), travel abroad and/or contact with a known or possible COVID-19 infected person. Most pregnant women will have mild to moderate flu-like symptoms of cough, sore throat, and fever. Few may have difficulty in breathing or shortness of breath. Pregnant women, especially those with associated medical diseases (diabetes, asthma, etc.) may present with pneumonia and marked hypoxia. Pregnant women may also present with atypical features such as fatigue, malaise, body ache and/or gastrointestinal symptoms like nausea and diarrhoea]6[.

Testing

The criteria for testing are the same as the non-pregnant population. CDC recommends collection of a nasopharyngeal swab specimen to test for COVID-19]7[. An Oropharyngeal swab can be collected but is not essential. Sputum should only be collected from patients with productive cough. Test is by reverse-transcription polymerase chain reaction (RT-PCR). .Testing may also be conducted by Nucleic Acid Amplification Test (NAAT) or by serological testing. Other findings seen are leukopenia, lymphocytopenia, mild thrombocytopenia, mild elevation of liver

enzymes and other acute infection markers. CT scan and other imaging modalities usually show patterns consistent with atypical pneumonia. In cases where an X-Ray or CT scan is needed there should be provision of an abdominal shield to protect the fetus from radiation exposure]8[.

Prevention

The greatest tool to prevent infection in pregnant women is Social Distancing and maintaining hygiene]9[.The recommended strategy for routine antenatal care is to defer routine visits]10[. Telephonic consultation can be done for minor ailments and queries. Only essential milestone visits such as the 12 and 19 week scans are needed. The next visit can be at 32 weeks pregnancy.

Effects on mother and fetus

Pregnant women don't appear to be more susceptible to consequences of infection of COVID-19 than general population]11[. Preliminary research suggests that the infection is not transmitted from the mother to child by placental transfer or through secretions in the genital tract. In two reports including a total of 18 pregnant women with suspected or confirmed COVID-19 pneumonia, all of the new-borns, who were delivered via caesarean section, tested negative for virus, and there were no traces of the virus in the mother's amniotic fluid, cord blood or breast milk]12,13[. Although there are some reports of new-borns testing positive the mode of transmission in those cases is not clear as of now. With the data from limited number of deliveries to COVID-19 infected women, at present, there is no evidence of any fetal effects of the infection in terms of fetal abnormalities or other fetal parameters of growth, amniotic fluid or Doppler indices. There is no rationale for recommending amniocentesis to detect fetal infection at this time]14[. At present, there is no evidence of higher risk of abortion or of preterm labour with COVID-19 infection. However with disease which can compromise maternal health, there is a possibility of iatrogenic preterm delivery.

Management

Currently, there are no effective drugs or vaccines to prevent COVID-19. Therefore, personal protection should be considered in order to minimize the risk of contracting the virus. Patients and healthcare providers should maintain good personal hygiene by avoiding close contact with others during the COVID-19 epidemic period, reduce participation in any gathering in which a distance of at least 1 meter between individuals cannot be maintained (social distancing), Pay attention to hand washing and use hand sanitizer (with 70% alcohol concentration) frequently]15[

Quarantine and isolation instructions as for general population is applicable to pregnant women also]14[.

Arrangements in existing healthcare facilities to manage COVID-19 confirmed and suspected pregnant women should include a dedicated unit to reduce risk of transmission .Adequate personal protection equipment (PPE) should be ensured .It may be beneficial to set up wards, labour rooms, operation theatres and ICU with a negative pressure system to limit the spread of infection]14[. Neonatal resuscitation corners should be arranged at least 2 m away from the delivery table]16[. Every pregnant woman should be triaged at entry .Those infected and suspected should be kept in separate isolation areas. If possible each in a separate room with an attached bathroom. Access to the isolation areas should be strictly limited. Patients should be allowed to have their electronic communication devices to facilitate interactions with the family and friends.

Intensive Care is to be managed by the critical care specialist]17[, Supportive therapy include rest, oxygen supplementation, fluid and nutritional care as needed. Drugs those have been tried include Hydroxychloroquine, Azithromycin, antiviral drugs]18,19[.Antiviral therapy Lopinavir-ritonavir was the first antiviral combination used in an attempt to treat COVID-19 infection (19) and could be considered as a possible line of treatment for those who have chronic disease, Immunocompromised or uncontrolled diabetes. However, there was no difference in time to clinical improvement or mortality In a randomized trial of 199 patients given Lopinavir-ritonavir (400/100 mg) twice daily for 14 days in addition to standard care versus those who received standard of care alone]19[. Other agents such as Remdesivir has been suggested and is being evaluated in a randomized trial]20[. In India, regimen of Oseltamivir 75 mg twice a day for five days in conjunction with hydroxychloroquine has been tried based on H1N1 experience]21[.

At present efforts are on towards the development of a vaccine. Though safety trials have been initiated, it is estimated that a vaccine would be available to use only after 6-12 months]22[. Antenatal Steroids (for fetal maturity): Though glucocorticoids have been associated with an increased risk for mortality in patients with influenza and delayed viral clearance in patients. The use of steroids in these patients for fetal maturity needs to be individualized based on the woman's condition. If there is difficulty in breathing, oxygen supplementation by nasal prongs or mask may be added. High flow nasal oxygen at 4 to 6 liters

per minute should be immediately administered. Non-invasive ventilation can also be used. Depending on the clinical picture and severity of the condition, a multispecialty team with a senior obstetrician, anaesthesiologist, neonatologist, critical care specialist with infectious diseases expert may be involved in caring of woman in labour. Timing of delivery should not be altered on the basis of COVID-19 infection. The presence of infection is not an indication to induce labour or deliver the woman. The exception to this would be the critically ill pregnant woman where delivery may be indicated to relieve the extra metabolic and pulmonary load. However, the possible benefits of this need to be weighed against the possible risks of worsening the systemic status with a surgical intervention. Such a decision has to be guided by individual circumstances including the degree of clinical stability, gestational age, available infrastructure and the couple's wishes. In labour, monitoring should include the periodic evaluation of the respiratory status with a watch for symptoms of difficulty or shortness of breath, respiratory rate, and pulse rate and oxygen saturation. As such, the pregnant woman with COVID-19 infection can be allowed to labour and indications for interventions should follow standard obstetric practice. It may be prudent to offer continuous electronic fetal monitoring in labour for women if facilities are available. The second stage of labour should be cut short to prevent maternal exhaustion in case where there is respiratory involvement. At present most pregnant women when they present in labour with COVID-19 infection have been delivered by caesarean section. However there is no proven scientific rationale for this and it could reflect local preference and practices.

Labour Analgesia and Anaesthesia in Pregnant Women with COVID-19 infection

There is no evidence that epidural or spinal analgesia or anaesthesia is contraindicated in these patients]23[. If she requires a caesarean, the same epidural can be continued. For those without epidural anesthesia the choice of anesthesia is governed by the general health status of the woman. For most women, spinal anesthesia by standard techniques is suitable. However, in the situation where there is respiratory compromise, general anesthesia will be needed. If general anaesthesia is administered, preoxygenate the patient for five minutes with 100% O2 and perform rapid sequence induction (RSI) to avoid manual ventilation of the patient's lungs. Use a video-laryngoscope to improve intubation success. Using a high efficiency hydrophobic viral filters avoids contaminating the atmosphere.

Neonates born to mothers with COVID-19 infection are tested within 14 days of delivery or up to 28 days after birth. If symptomatic, specimens should be collected as soon as possible if asymptomatic and roomed-in, test only if and when mother's test comes positive. If mother is positive and baby's initial sample is negative, another sample should be repeated after 48 hours.

Breastfeeding

As present knowledge stands, there is no evidence that COVID-19 is secreted in breast milk. The CDC states that "we do not know whether mothers can transmit the virus via breast milk"]24[. It is reassuring that in six Chinese cases tested, breast milk was negative for COVID-19; however, given the small number of cases, this evidence should be interpreted with caution. The main risk for infants of breastfeeding is the close contact with the mother, who is also likely to share infective airborne droplets. UNFPA encourages breast feeding as breast milk is the best source of nutrition and immunity for the infant]25[.If breast feeding precautions should be taken to limit spread to the baby, woman should wash her hands before and after touching her baby and wear mask.

The International Society of Ultrasound in Obstetrics and Gynecology has recommended that if the mother is severely or critically ill, separation appears to be the best option, with attempts to express breast milk in order to maintain milk production. Precautions should be taken when cleaning the breast pumps. If the patient is asymptomatic or mildly affected, breastfeeding and co-location (also called rooming-in) can be considered by the mother in coordination with healthcare providers, or may be necessary if facility limitations prevent mother-baby separation.

Postnatal Care of the mother infected with COVID-19 should include continued medical evaluation for respiratory status and routine postnatal care. The mother who is recovering from an acute illness and/or is isolated from the infant may be at risk for developing anxiety, postpartum depression and other mental health issues. She should be offered counselling and psychological support. Further into the puerperium, the couple should follow contraceptive practices as per their informed choice.

Conclusions

The COVID 19 virus is a new strain of corona virus, little is known today about its effect on the outcome of pregnancy. Further clinical and research data are awaited for better understanding of any morbid effect of this new

strain and its health hazards on both the mother and neonates.

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