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Review Article

Anesthesia Consideration for a Pregnant with Positive COVID 19: A Narrative Review

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Abstract

Pregnancy is not known to increase the susceptibility to contract the coronavirus disease (COVID-19) infection, but the visits for prenatal care, labor and postpartum care for women with testing positive for COVID 19 should be separated from other non-infected personal. Parturient should wear surgical masks. Mothers could transmit the virus to their newborns through airborne droplets when in close contact particularly during breastfeeding. Symptomatic mothers should keep at

least six feet apart from the newborn to reduce the risk of virus transmission. Breastfeeding should only be allowed following mother recovery with special attention to frequent hands washing and breast hygiene-Team approach for the healthcare workers involved in labor wards should be planned in advance to minimize cross infection with COVID 19. Early epidural analgesia can reduce the need for general anesthesia if cesarean section is to be indicated, but recent coagulation studies are needed in particular platelets count. The timing of donning of the PEE used during labor can contradict with the need to urgently manage neonatal distress, this need to be staff wise organized.

Keywords: COVID-19; Pregnancy; Neonate; Delivery; Clinical

1. Introduction

Coronavirus disease 2019 (COVID-19) is defined as an illness caused by a novel coronavirus named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV). This virus was first identified during an outbreak of respiratory illness in Wuhan City, Hubei Province, China. The illness was initially reported on December 31st 2019 by the WHO, but unfortunately on January 30th 2020, the WHO decided to declare it as an outbreak. On March 11th 2020, the WHO further declared COVID-19 as a global pandemic [1-2].

COVID 19 can develop into severe acute respiratory syndrome with multi-organ involvement. Precautions during pregnancy and labor to minimize the risk of viral transmission to the newborn and others will be the focus for this literature review. This will help to provide updates into this field from last few months pandemic published experience.

2. Methods

A literature review of the online database (PubMed, Google Scholar, MEDLINE) with the following keywords were used: COVID-19, 2019-nCoV and pregnancy. The review looked into scientific publications from February to June 2020 which focused on pregnancy and new born management during this COVID-19 pandemic.

All searches as well as title and abstract screening and study selection were performed by the investigators working independently. Search results included every published or accepted manuscripts and fast brief reports and communications in English language due to the limited time since the pandemic was announced.

3. Discussion

A pregnant woman can contract the COVID 19 virus mainly by droplet airborne transmission from a close contact or during hospital visits. Preventive measures and the organization of health care team work in the hospitals is necessary to reduce this risk. Wearing surgical masks, minimizing number of care givers, negative pressure isolation rooms for positive patients and infection control measures are essential recommendations [3]. Droplet airborne sharing can spread the SARS-CoV-2 to neonates if measures of social distancing are not implemented by the mothers, caregivers, visitors, or healthcare personnel [4-6]. Limited and contradictory evidence raise the concern about the utero transplacental vertical viral transmission to the neonates but cannot be confirmed yet [7, 8].

Early umbilical cord clamping during delivery is recommended and symptomatic mothers as mentioned above should keep the six feet distance from their newborns until recovery and the elapse of two weeks with symptoms free or twice negative testing in order to reduce the risk of viral transmission. Breastfeeding should only be allowed following mother recovery with special attention to frequent hands washing and breast hygiene. [9-11] Antiviral drugs transmission through breastfeeding is confirmed in rats, but not yet in humans. Any suspension of breastfeeding will require regular emptying of breasts to avoid infection.

COVID infection clinical course in pregnant are similar to non-pregnant adults and it is not associated with poor maternal or perinatal outcomes, despite few reported cases of maternal death during the second or third trimesters [11, 12]. The use of acetaminophen during pregnancy in the first trimester is considered safe and can reduce the effect of fever on the embryo [7]. Adopting the Telehealth technology encourages distance communication and reduces cross infection [13]. In labor and delivery wards, patients must be triaged on admission into low, moderate or high risk COVID-19 patients. Vaginal delivery in COVID-19-patients is not contraindicated, but in emergent delivery in a critically ill parturient, cesarean becomes the most appropriate approach. Delivery should be carried out with full personal protective equipment (PPE) for medical caregivers. A negative pressure isolation room with at least 6 air exchanges per hour as per infection control measures is ideally preferred [14]. Microbiological filters (pore size < 0.05 mm) must be inserted between the parturient mouth piece and the nitrous oxide -oxygen (Entonox) breathing systems to avoid cross infection [15].

Early epidural analgesia can reduce the need for general anesthesia if cesarean section is to be indicated. Technical difficulties were reported by anesthesiologists when performing neuroaxial blocks as a result of weaning the uncomfortable protective personal equipment (PPE) and the presence of thrombocytopenia. Recent coagulation studies are necessary prior to epidural catheter insertion in positive COVID 19 during labor [16,17]. The risk of meningitis or encephalitis with neuraxial procedures in patients untreated viremia are not known, but the risk of general anesthesia as an aerosol generating technique outweighs the theoretical risk of causing meningitis/encephalitis until otherwise proved [18].

Video laryngoscopy is the preferred method for endotracheal intubation by experienced anesthetist and with the minimal number of care givers in the room [19]. Post-partum care demands venous thromboembolism (VTE) prophylactic therapy and measures [20].

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