

COVID-19 in Pregnancy- A comprehensive summary of current guidelines

Kavita Narang¹, Eniola Ibirogba¹, Amro Elrefaei¹, Ayssa Teles Abrao Trad¹, Regan Theiler¹, Olivier Picone², Mark Kilby³, Ramon Escuriet⁴, Anna Suy⁵, Elena Carreras⁵, Gabriele Tonnie⁶, and Rodrigo Ruano¹

¹Mayo Clinic

²Hôpital Louis-Mourier

³Birmingham university

⁴CatSalut

⁵Hospital Universitari Vall d'Hebron

⁶Emilia-Romagna Region

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Abstract

Background: Since the declaration of the global pandemic of COVID-19 by the World Health Organization on March 11, 2020; we have continued to see a steady rise in the numbers of people infected by SARS-CoV-2. However, there is still very limited data on the course and outcomes of this serious infection in a vulnerable population of pregnant patients and their fetuses. International perinatal societies and institutions including SMFM, ACOG, RCOG, ISUOG, CDC, CNGOF, ISS/SIEOG and CatSalut have released guidelines for the care of these patients. **Objectives:** We aim to summarize these current guidelines in a comprehensive review for patients, healthcare workers and healthcare institutions. **Search Strategy:** A literature search was performed through PubMed, and direct review of professional society's website and journal publications. A total of 15 papers were identified from 10 societies and reviewed by two authors who were in agreement. **Selection Criteria:** The most updated guideline including information on antepartum, intrapartum and postpartum care put forth by each society was included. **Data Collection and Analysis:** Data specific to antepartum, intrapartum, and postpartum were abstracted from the publications and summarized into tables 2, 3 and 4 respectively. **Main Results:** The summary of guidelines for management of COVID-19 in pregnancy across different perinatal societies is consistent, with some variation in the strength of recommendations. **Conclusions:** It is important to recognize that these guidelines are frequently updated, as we continue to learn more about the course and impact of COVID-19 in pregnancy. The references to access all these guidelines are provided.

Tweetable Abstract

Since the declaration of the global pandemic of COVID-19 by the World Health Organization on March 11, 2020; we have continued to see a steady rise in the numbers of people infected by SARS-CoV-2. However, there is still very limited data on the course and outcomes of this serious infection in a vulnerable population of pregnant patients and their fetuses. International perinatal societies and institutions including SMFM, ACOG, RCOG, ISUOG, CDC, CNGOF, ISS/SIEOG and CatSalut have released guidelines for the care of these patients. The objective of this paper is to summarize these current guidelines in a comprehensive review for patients, healthcare workers and healthcare institutions.

Introduction

The World Health Organization (WHO) declared a global pandemic of COVID-19, caused by SARS-CoV-2

on March 11, 2020^[1]. The rapidly escalating numbers of individuals infected globally remain on the rise and little is still known about the course and outcomes of this serious infection in a vulnerable population of pregnant patients and their fetuses.

Professional societies and institutions involved in the care of pregnant patients, including Society for Maternal and Fetal Medicine (SMFM)^[2, 3] from United States, American College of Obstetrics and Gynecology (ACOG)^[4, 5] from United States, Royal College of Obstetrics and Gynecology (RCOG)^[6] from United Kingdom, International Society for Ultrasound in Obstetrics and Gynecology (ISUOG)^[7], United States Centers of disease control (CDC)^[8, 9], the World Health Organization (WHO)^[10], College National de Gynecologie et Obstetrique Francais (CNGOF)^[11] from France, Società Italiana di Ecografia Ostetrico Ginecologica /Istituto Superiore Sanità (SIEOG/ISS)^[12, 13] from Italy and the Catalan Health Service (CatSalut)^[14, 15] from Spain have released independent guidelines for the assessment and care of pregnant patients from prenatal course to intrapartum to postpartum.

A paper published by Boelig et al in March 2020 to guide Maternal Fetal Medicine specialists on the care of SARS-Cov-2 pregnant patients, urged healthcare providers and their institution to develop internal guidelines to have their unit ready to care for these patients^[2].

In order to help institutions keep up with this rapidly evolving landscape; the authors of this paper aim to summarize and discuss all the current guidelines put forth by the aforementioned professional societies and institutions into one document. The primary goal is to allow institutions access to a comprehensive summary of guidelines related to the SARS-Cov-2 pandemic in pregnancies; which they can adapt to their practice environment and capabilities. The primary focus of all published guidelines is to design a model where patients and their families, as well as healthcare workers in the frontline of the pandemic are protected and prepared.

Methods

A literature search was performed through direct review of professional society's website and journal publications, and PubMed. A total of 15 papers were identified from 10 societies and reviewed by two authors who were in agreement. Summary of guidelines were retrieved from the sources described in Table 1, arranged in ascending order of publication date. (Figure 1)

Data abstracted from these guidelines will include specifics on antepartum, intrapartum and postpartum management as outlined in the results tables (Tables 2, 3 and 4).

Results

All the data from the aforementioned publications are summarized Tables 2, 3 and 4.

Table 2 summarizes prenatal and antepartum care guidelines. All guidelines support some form of screening of pregnant patients depending on symptoms and exposure, encourage the use of telehealth for prenatal visits and limiting face to face visits and ultrasounds only to those that are medically necessary. The use of antenatal corticosteroids for fetal lung maturation can be continued till 34 weeks gestation, but the use of steroids in the late preterm period, > 34 0/7 weeks gestation remains controversial. All ultrasound equipment and patient rooms should be appropriately cleaned after each use.

Table 3 summarizes intrapartum care guidelines. All guidelines recommend a designated area within the unit to care for COVID-19 positive pregnant patients or Person under investigation (PUI). Timing and mode of delivery should follow routine obstetric indications. Cesarean delivery should be reserved for obstetric indications only; infection with COVID-19 is not an indication for cesarean delivery unless there is acute decompensation of mother or fetus. Only one asymptomatic support person is allowed to be there at time of delivery. Shortening second stage of labor can be considered with the use of operative delivery or laboring down. Patients and healthcare workers should be appropriately gowned gloved and have protective face masks; specifically N95 should be used for aerosol generating procedures such as forceful expiration during

pushing. There is no contraindication to regional or general anesthesia if indicated; but appropriate PPE use is encouraged.

Table 4 summarizes postpartum care guidelines. All guidelines encourage early discharge from the hospital, 1 day for vaginal delivery and 2 days for cesarean delivery. This limits face to face exposure and increases bed availability. Separation of mother and baby or discouraging breastfeeding are not advised, unless the mother is acutely ill. However, mothers are encouraged to 1) Practice respiratory hygiene during feeding, 2) wear a mask, 3) Wash hands before and after touching the baby and, 4) Routinely clean and disinfect surfaces they have touched. Postpartum visits should be performed over telehealth, unless face to face visit is essential to management.

Discussion

The overall summary of guidelines for management of COVID-19 in pregnancy across different professional societies and institutions are consistent; with some variation in the strength of recommendations. Global societies such as WHO and CDC have a similar approach to their guideline publication; keeping the recommendations broad so it can be utilized across all shapes and sizes of healthcare institutions. Many of their recommendations overlap with those for the general population and they provide great resources to guide readers to perinatal societies for more specific questions.

International perinatal societies including ACOG, RCOG, SMFM, ISUOG, CNGOF, ISS/SIEOG and public institution CatSalut, all share similar recommendations answering questions that are very specific to the care of pregnant patients- from prenatal screening, antepartum care, details of intrapartum care during different stages of labor in emergency and non-emergency settings, to postpartum care and follow up. The guidelines put forth by SMFM (United States) are most specific to the care of high risk pregnancies; given their expertise in this field. ACOG (United States) and RCOG (United Kingdom) summarize recommendations that are suitable for lower risk pregnant patients. CNGOF (France) and ISS/SIEOG (Italy) and CatSalut (Barcelona), give some practical recommendation for the management of infected pregnant women. ISUOG (International) provides more information specific to managing and cleaning ultrasound equipment—an essential tool in the care of pregnant patients which could be a vector for disease transmission if sanitization is not a priority.

The consensus amongst the all perinatal societies encourages all institutions to transition to telehealth when appropriate and limit the number of face to face visits. Ultrasounds and antenatal surveillance should be performed only if medically indicated. The use of antenatal steroids for fetal lung maturation for patient at high risk of preterm birth within 7 days should still be performed if pregnancy is between 24 0/7 to 33 6/7 weeks gestation; but should be avoided during late preterm of 34 0/7 to 36 6/7 weeks gestation. All institutions should set up a designated screening area, labor and delivery rooms, and operating rooms for COVID-19 patients. All patients should be screened for symptoms, travel history, contact history and follow the appropriate algorithm provided to guide need for performing real time PCR test. As the numbers of testing sites and resources have increased over the past few weeks, there should be consideration for screening every pregnant patient being admitted if feasible. Societies recommend only one consistent support person to be present during delivery. Mode and timing of delivery should still be performed on the basis of routine obstetric indications. Aerosol generating procedures such as use of oxygen and forceful pushing should be avoided to protect everyone in the delivery room. Appropriate PPE should be donned by patients and healthcare workers during all interactions. N95 should be worn during aerosol generating procedures^[5]. Currently, mother and baby separation and discouraging breastfeeding are not advised unless the mother is acutely ill. However, mothers are advised that breast pumping should be considered over breastfeeding and to wash hands before handling baby, touching pumps or bottle, avoid coughing while baby is feeding, consider wearing face mask while feeding or handling baby. If a breast pump is used, clean properly after each use, and routinely clean all surfaces that are touched. The length of hospital stay should be decreased to 1 day for vaginal delivery and 2 days for cesarean delivery to limit time of exposure for patients and healthcare workers in the hospital while also increasing bed capacity. Once discharged, patients are advised to continue social distancing, and routine postpartum visits can be conducted using telehealth. The method of telehealth should be individualized based on institution resources and availability.

Conclusion

The present manuscript summarizes the guidelines for Obstetrical and perinatal managements of pregnant women during the SARS-CoV-2 pandemic, which can be an overall reference for Obstetricians all over the world. Many similarities are identified amongst these guidelines. All of the international professional societies and institutions discussed in this paper, including ACOG, RCOG, SMFM, ISUOG, WHO, CNGOF, ISS/SIEOG, CatSalut and CDC, continue to work tirelessly to put forth updated information for the care of pregnant patients and beyond. This manuscript also provides the summary of the source for continuous updates. It is imperative for readers to continue to use the most updated guidelines available as we continue to learn more about the impacts of the SARS-CoV-2 pandemic in pregnancy.

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Contribution of Authorship

Kavita Narang MD- Literature review, manuscript outline and writing

Eniola R. Ibiroga MBBS- Assisted with manuscript writing

Amro Elrefaei MBBCh- Assisted with manuscript writing

Ayssa Teles Abrao Trad MD- Assisted with manuscript writing

Regan Theiler MD PhD - Assisted with manuscript writing

Olivier Picone MD PhD- Assisted with manuscript writing

Mark Kilby MD PhD - Assisted with manuscript writing

Ramón Escuriet PhD- Assisted with manuscript writing

Anna Suy MD PhD- Assisted with manuscript writing

Elena Carreras MD PhD- Assisted with manuscript writing

Gabriele Toni MD PhD - Assisted with manuscript writing

Rodrigo Ruano MD PhD- Assisted with manuscript writing

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Figure 1 PRISMA flow chart.doc available at <https://authorea.com/users/312097/articles/442732-covid-19-in-pregnancy-a-comprehensive-summary-of-current-guidelines>

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