Coronavirus disease 2019 (COVID-19) in Pregnancy

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Outline

- Introduction
- Clinical manifestation
- Course in pregnancy
- Approach and diagnosis
- Prenatal care
- Management of labor and delivery
- Postpartum care

Introduction

- Coronavirus disease 2019 (COVID-19) …. disease
- Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus
- New Pandemic started in Wuhan,china , in Dec 2019.
- Information about COVID-19 is evolving .
- Interim guidance by multiple organizations is constantly being updated and expanded.
- Limited data ….especially in pregnancy.

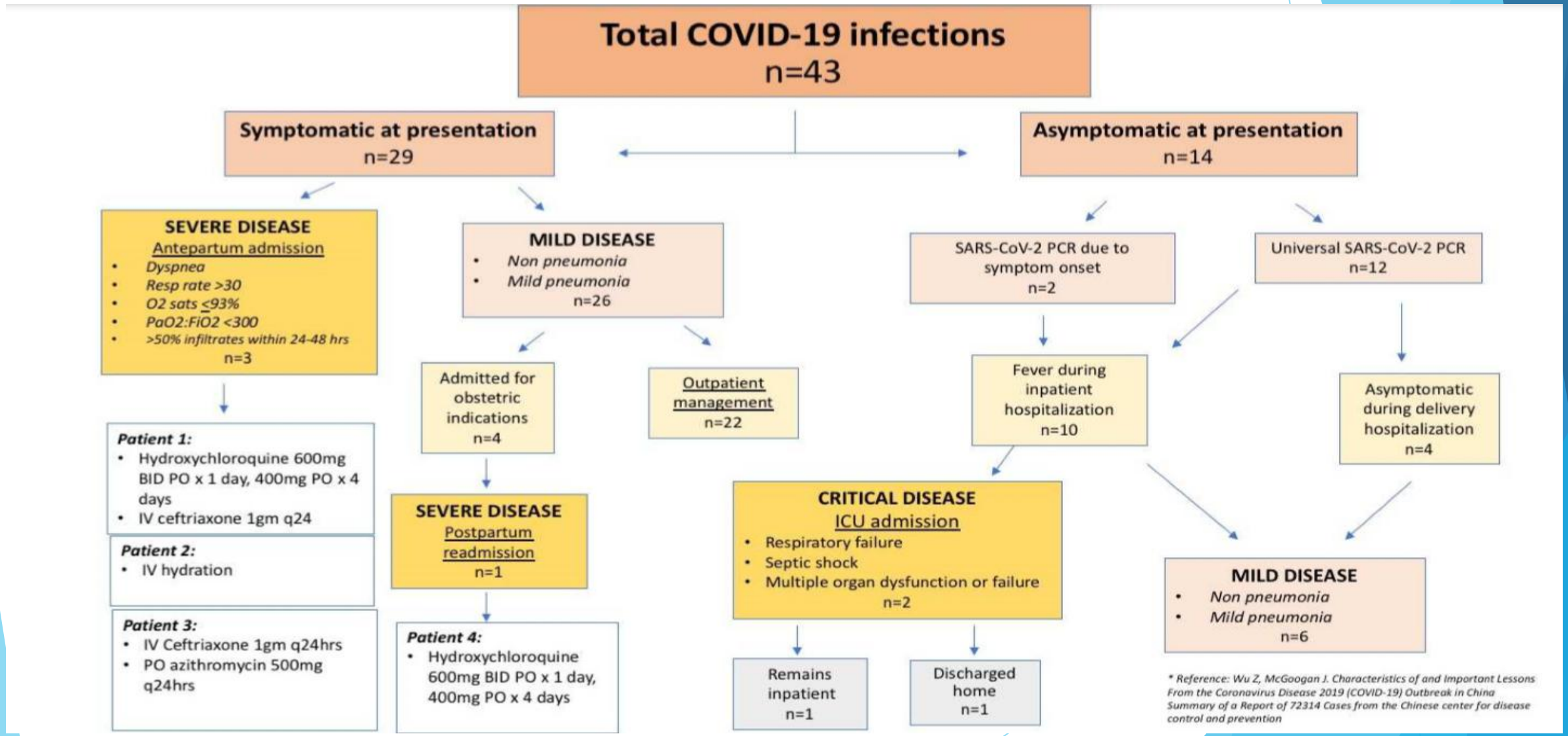
Clinical manifestations

- Same as non pregnant population
  - Fever, new cough, and shortness of breath, sore throat, myalgia, rhinorrhea/nasal congestion, diarrhea, anorexia, nausea/vomiting, headache,
- All pregnant women should be monitored for symptoms and signs particularly,
  - Have had close contact with a confirmed case
  - Persons under investigation.
- Complications ..ARDS, arrhythmias, acute cardiac injury, and shock.

Course in pregnancy

- Limited available data
- Pregnancy and childbirth do not :
  - Increase the risk for acquiring infection
  - Worsen the clinical course compared with nonpregnant individuals of the same age
- Most infected mothers recover without undergoing delivery.
- Most pregnant women are younger than middle age but may have comorbid conditions that increase their risk.

COVID-19 infection among asymptomatic and symptomatic pregnant women: Two weeks of confirmed presentations to an affiliated pair of New York City hospitals



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- The course of the infection during pregnancy is essentially similar to that in nonpregnant persons.
- Peculiar issues during pregnancy:
  - timing of prenatal care visits
  - potential pregnancy complications
  - timing and management of labor and delivery,
  - postpartum care
    - breastfeeding,
    - mother-newborn separation,
    - infant care,
    - postpartum depression risk.

Approach to diagnosis

- Like any other patient, possibility of COVID-19 should be considered in pregnant women if present with
  - new-onset fever/chills and/or respiratory tract symptoms
  - severe LRT illness without any clear cause
  - Residing in or travel to a location where there is community transmission of SARS-CoV-2
  - close contact with a confirmed or suspected case of COVID-19 in the past 14 days
- Meet the testing criteria→ undergo testing for SARS-CoV-2
- acog.org/covid19 for ACOG's assessment algorithm

Prenatal care

- ACOG/MFM
  - Suggestions modifying traditional protocols for prenatal visits→ reducing the number of in-person visits i.e FANC
  - Should be tailored for low- versus high-risk patients
  - Arranging consultation via phone
  - Timing of visits to minimize maternal contact with others
  - Restricting visitors during visits and tests
  - Timing of indicated obstetric ultrasound examinations
  - Timing and frequency of fetal surveillance tests.

Medical management of pregnant women with COVID-19

- Most pregnant patients with known or suspected COVID-19 have mild disease that does not warrant hospital-level care in the absence of obstetric problems.

  → home care similar to nonpregnant population.

Cont'd

- Critically ill patients need hospital admission and managed by multidisciplinary team similar to other patients.
- **Specific issues**
  - Fetal monitoring…. NST 2x/d
  - Monitoring for preterm labor
  - Maternal oxygenation level…
  - Safety of antiviral drugs
  - Thromboprophylaxis… routine UFH/LMWH, unless contraindicated
  - ASA, steroids, tocolysis

Cont'd

❖ Timing delivery

- ✓ Factors to be considered
  - ✓ GA
  - ✓ Severity of the disease
- ➢ Preterm GA, no severe illness , no medical/obstetric indications for prompt delivery→ delivery is not indicated.
- ➢ delivery after negative test minimizing the risk of postnatal transmission to the neonate

Cont'd

- **In women with severe illness**
  - does termination improve maternal respiratory conditions ?..unclear.
  - timing of delivery needs to be individualized.
- Some recommendation
  - hospitalized patient but not intubated, consider delivery at >32 to 34 weeks before the pulmonary situation worsens.
  - Intubated patient .. Termination may exacerbate the maternal condition
  - <32 weeks…conservative.

Management of labor and delivery

- All mothers should be screened before entering the hospital for admission to the labor and delivery unit for
  - signs and symptoms of COVID-19
  - close contact with a confirmed case or persons under investigation
- If support person allowed….should be screened as well
- Routine testing?.. At least should be prioritized

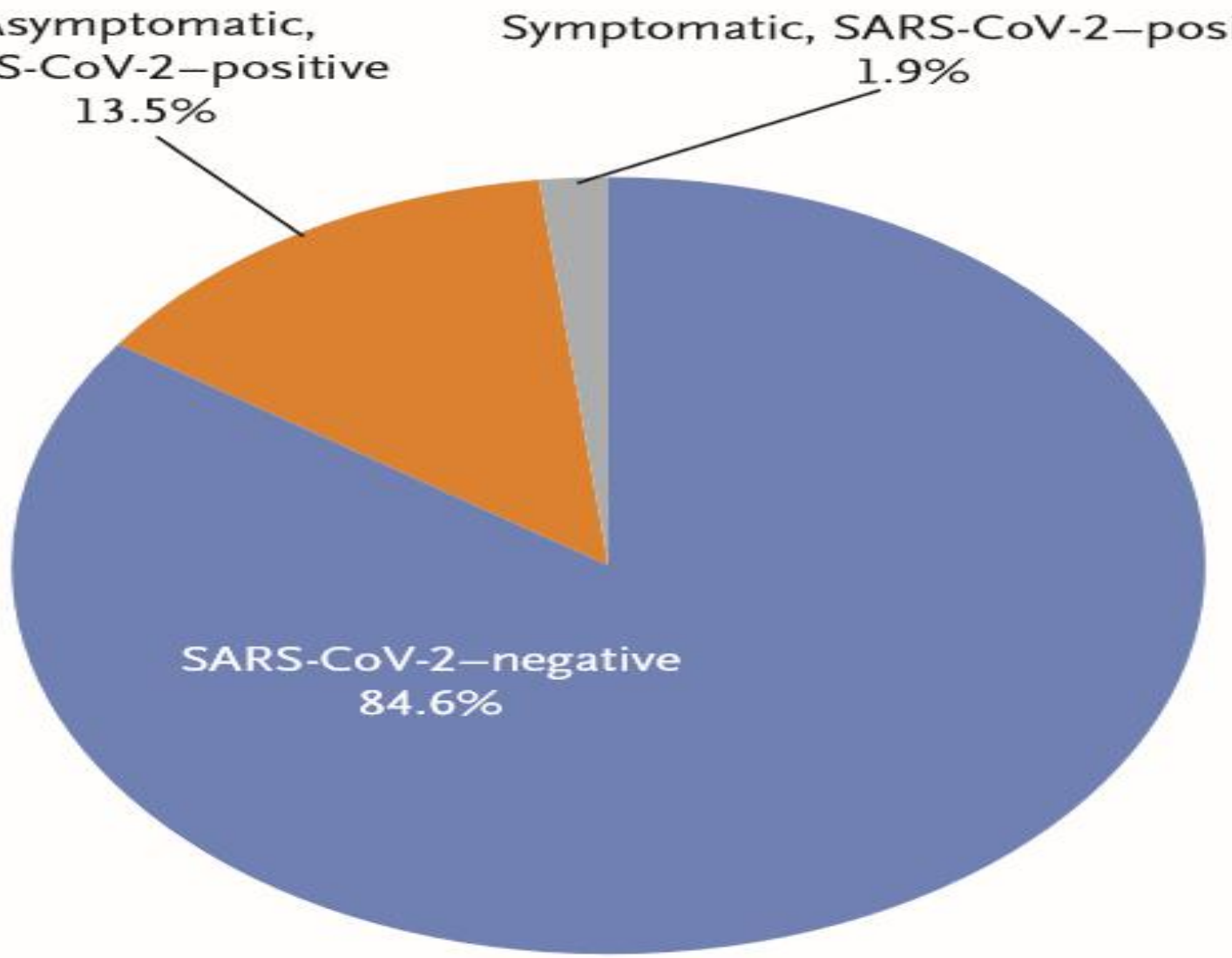

Figure 1. Symptom Status and SARS-CoV-2 Test Results among 215 Obstetrical Patients Presenting for Delivery.

Cont'd

- **Route of delivery**
  - COVID-19 is not an indication to alter the route of delivery.
  - Cesarean delivery is performed for standard obstetric indications.
  - No evidence of vertical transmission
- Even if vertical transmission
  - This would not be an indication for cesarean delivery since it would increase maternal risk
  - would be unlikely to improve newborn outcome.
  - Infection in the neonate have generally described mild disease.

CONT'D

- **Labor management**
  - Generally, management of labor is not altered in women giving birth during the COVID-19 pandemic or in women with confirmed or suspected COVID-19 .
  - Person-to-person contact and time in the labor unit and hospital should be limited, as safely feasible.
  - For patients who require cervical ripening, outpatient mechanical ripening with a balloon catheter is an option.
  - For inpatient cervical ripening, using two methods (eg, mechanical and pharmacologic) decreases the time from induction to delivery, compared with using one agent only.
  - ARM & internal FHR monitoring…. No contraindication

Postpartum care

Maternal monitoring

- For patients with known or suspected COVID-19 who are asymptomatic, postpartum maternal monitoring is routine.
- For patients with mild illness, check V/S and monitor intake and output every 4 hours for 24 hours after vaginal delivery and 48 hours after cesarean delivery.
- For patients with moderate illness, perform continuous pulse oximetry monitoring for the first 24 hours or until improvement in signs and symptoms, whichever takes longer.
- For patients with severe or critical illness, very close maternal monitoring and care on the labor and delivery unit or intensive care unit are indicated.

Cont'd

- **Infant evaluation**
  - The infants of mothers with COVID-19 are suspects, and they should be tested, isolated from other healthy infants, and cared for separately.
  - Where testing capacity is available, neonates should be tested for SARS-CoV-2 infection as soon as possible and within the first 24 hours of age using available molecular assays.
  - Repeat testing should be performed at approximately 48 hours of age if the infant is still at the birth facility.

Cont’d

- **Mother-baby contact**
  - Separation Vs remain together
- Factors to consider include:
  - The mother's and infant's clinical conditions.
  - Confirmed or suspect
  - The mother's desire to breastfeed.
  - The facility's ability to accommodate mother-baby separation or colocation.
  - Other risks and benefits

Cont'd

- **Breastfeeding**
  - It is unknown whether the virus can be transmitted through breast milk.
  - The only report of testing found no virus in the maternal milk.
  - However, droplet transmission could occur through close contact during breastfeeding…… preventive measures has to be implemented
  - Breastfeeding should be encouraged.
  - In addition to its many other benefits, breast milk is a passive source of antibodies and other anti-infective factors and, thus, may provide passive antibody protection for the infant.

Pregnancy complications

- Insufficient evidences
- Hyperthermia during organogenesis… increased risk of NTD/ miscarriage.
- Increased frequency of preterm birth
- fetal death may occur in a critically ill woman with multiorgan failure
- Vertical transmission
  - No viral detection in cord blood, AF,vaginal secretion or placenta.
  - Maternal viremia rates appear to be low….placental seeding and vertical transmission are unlikely

What personal protective equipment (PPE) should clinicians and patients wear for potential or confirmed COVID-19 patients in L/W?

- COVID-19 infection is highly contagious, and this must be taken into consideration when planning intrapartum care.
- **All medical staff caring for potential or confirmed COVID-19 patients should use personal protective equipment (PPE) including respirators (eg. N95 respirators) when available.**
- Importantly, all medical staff should be trained in and adhere to proper donning and doffing of PPE.

THANK YOU!