Obstetric management: immediate actions

Key points from the ISUOG Interim Guidance

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Data from Hubei, China

	Chen et al (n=9)	Zhang et al (n=16)	Lei et al (n=9)	Summary
Maternal characteristics				
Maternal age in yrs	28 (26-40)	29.3 ± 2.9	29 (24-35)	
GA at admission in wk	38^{+0} (36-39^{+4})	-	28^{+6} (17^{+3}-37^{+0})	
GA at delivery in wk	38^{+0} (36^{+4}-40^{+4})	38.7 ± 1.4	-	
Epidemiological history, n (%)	9 (100)	-	9 (100)	18/18 (100)
Other family members affected, n (%)	4 (44.4)	-	4 (44.4)	8/18 (44.4)
Signs and symptoms, n (%)				
Fever	7 (77.8)	-	9 (100)	16/18 (88.9)
Cough	4 (44.4)	-	7 (77.8)	11/18 (61.1)
Diarrhea	1 (11.1)	-	5 (55.6)	6/18 (33.3)
Dyspnea	1 (11.1)	-	4 (44.4)	5/18 (27.8)
Myalgia	3 (33.3)	-	4 (44.4)	7/18 (38.9)
Fatigue	-	-	4 (44.4)	4/18 (22.2)
Nasal obstruction	-	-	3 (33.3)	3/18 (16.7)
Sore throat	2 (22.2)	-	3 (33.3)	5/18 (27.8)
Chest pain	0 (0)	-	3 (33.3)	3/18 (16.7)
Headache or dizziness	-	-	3 (33.3)	3/18 (16.7)
Rash	-	-	2 (22.2)	2/18 (11.1)
Shivering	-	-	1 (11.1)	1/18 (5.6)
Expectoration	-	-	1 (11.1)	1/18 (5.6)
Malaise	2 (22.2)	-	-	2/18 (11.1)

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Laboratory characteristics				
Normal leukocyte count	7 (77.8)	-	9 (100)	16/18 (88.9)
Lymphopenia	5 (55.6)	-	7 (77.8)	12/18 (66.7)
Elevated CRP	6 (66.7)	-	6 (66.7)	12/18 (66.7)
Abnormal liver function	3 (33.3)	-	0 (0)	3/18 (16.7)
CT chest typical features of pneumonia	8 (88.9)	-	7 (77.8)	15/18 (83.3)
Treatment				
Oxygen support	9 (100)	-	8 (88.9)	17/18 (94.4)
Antiviral therapy	6 (66.7)	-	9 (100)	15/18 (83.3)
Antibiotic therapy	9 (100)	-	9 (100)	18/18 (100)
Use of corticosteroid	0 (0)	-	6 (66.7)	6/18 (33.3)
Immunological therapy	-	-	1 (11.1)	1/18 (5.6)
Use of Traditional Chinese Medicine	-	-	9 (100)	9/18 (50.0)
Transfer to ICU	0 (0)	-	1 (11.1)	1/18 (5.6)

Chen et al, Lancet 2020
Zhang et al, CJPM 2020
Lei et al, CJPM 2020

Data from Hubei, China

	Chen et al (n=9)	Zhang et al (n=16)	Lei et al (n=9)	Summary
Pregnancy related complications				
Preeclampsia	1 (11.1)	1 (6.3)	-	2/25 (8.0)
Gestational hypertension	1 (11.1)	0 (0)	-	1/25 (4.0)
Gestational diabetes	0 (0)	3 (18.8)	-	3/25 (12.0)
PROM	2 (22.2)	3 (18.8)	-	5/25 (20.0)
Fetal distress	2 (22.2)	1 (6.3)	-	3/25 (12.0)
Oligohydramnios	-	1 (6.3)	-	1/25 (4.0)
Pregnancy outcome				
Preterm live birth	4 (44.4)	1 (10.0)*	2 (22.2)	7/23 (30.4)
Spontaneous preterm birth	1 (11.1)	-	1 (11.1)	2/18 (11.1)
Termination of pregnancy	0 (0)	0 (0)	1 (11.1)	1/34 (2.9)
Cesarean delivery	9 (100)	16 (100)	3 (33.3)	28/29 (96.6)

* Neonatal outcome available in 10 cases

Chen et al, Lancet 2020
Zhang et al, CJPM 2020
Lei et al, CJPM 2020

Data from Hubei, China

	Chen et al (n=9)	Zhang et al (n=16)	Lei et al (n=9)	Summary
Neonatal outcomes				
Neonatal birthweight (gram)	1880-3820	3139±437	2730 (2350-3400)	
Low birthweight (<2500 gram)	2 (22)	-	1 (25)	3/13 (23.1)
Apgar score at 1 min	8-9	-	9	
Apgar score at 5 mins	9-10	-	10	
Severe neonatal asphyxia	0 (0)	-	0 (0)	0/13 (0)
Neonatal death	0 (0)	-	0 (0)	0/13 (0)
Positive COVID-19 test	0 (0)	0 (0)	-	0/25 (0)
Bacterial pneumonia	-	3 (0)*	-	3/10 (30.0)

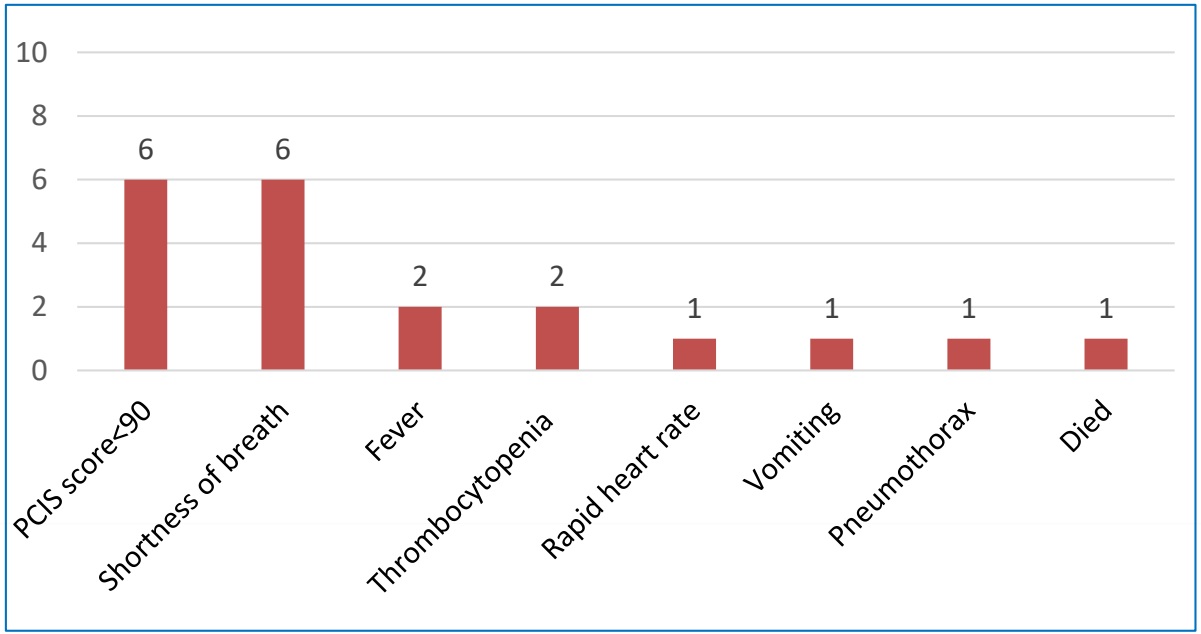
* Neonatal outcome available in 10 cases

Chen et al, Lancet 2020
Zhang et al, CJPM 2020
Lei et al, CJPM 2020

Neonatal data from Hubei, China

Neonates born to mothers with COVID-19 pneumonia

- **10 neonates (including 2 twins) in 5 hospitals in Hubei**
- **Gestational age between 31-39 wks**



Pharyngeal swab specimens were collected from 9 of 10 neonates 1 to 9 days after birth for nucleic acid amplification tests for COVID-19

All showed negative results

Vertical transmission of COVID-19 is yet to be confirmed

Zhu et al, Transl Pediatr 2020

COVID-19 in pregnancy

- Clinical characteristics of patients with COVID-19 infection presenting from the mid-trimester onwards are similar to those of non-pregnant adults.
- There is no evidence that pregnant women are more susceptible to COVID-19 infection.
- Severe morbidity and mortality are not evident in pregnant women with COVID-19.
- Information on vertical transmission for COVID-19 is limited.
- Ongoing collection of clinical data and research is underway with the aim of answering questions in relation to perinatal risks and the optimal intrapartum management, and timing and mode of delivery.

Key points from ISUOG Interim Guidance on 2019 novel coronavirus infection during pregnancy and puerperium: information for healthcare professionals

Poon LC, Yang H, Lee JCS, Copel JA, Leung TY, Zhang Y, Chen D, Prefumo F. UOG 2020 Mar 11. doi: 10.1002/uog.22013. [Epub ahead of print]

Place of care

- Pregnant women with confirmed COVID-19 infection should be managed by **designated tertiary hospitals**.
- **Suspected/probable cases** should be treated in **isolation** and **confirmed cases** should be managed in a **negative-pressure isolation room**. A woman with confirmed infection who is **critically ill** should be admitted to a **negative-pressure isolation room in the ICU**.
- **Negative-pressure isolation rooms** should be set up for **safe labor and delivery** and **neonatal care**.
- All attending medical staff should **don PPE** (respirator, goggle, face protective shield, surgical gown and gloves) when providing care for confirmed cases of COVID-19 infection.
- However, in areas with **widespread local transmission** of the disease, pregnant women with a mild clinical presentation may not initially require hospital admission and **home confinement** can be considered. If negative-pressure isolation rooms are not available, patients should be isolated in single rooms, or grouped together once COVID-19 infection has been confirmed.

Key points for consideration

- Management of COVID-19-infected pregnant women should be undertaken by a **multidisciplinary team** (**obstetricians**, **MFM subspecialists**, **intensivists**, **obstetric anesthetists**, **midwives**, **virologists**, **microbiologists**, **neonatologists**, **infectious-disease specialists**) – **start talking with each other!**
- **Medical staff** who are caring for suspected, probable or confirmed cases of COVID-19 patients should be **monitored closely for fever or other signs of infection and should not be working if they have any COVID-19 symptoms**. Ideally medical staff assigned to care for suspected, probable or confirmed cases of COVID-19 patients should **minimize contact with other patients and colleagues**, with the aim of reducing the risk of exposure and potential transmission.
- Medical staff who have been **exposed unexpectedly** to a COVID-19-infected pregnant patient, should be **quarantined or self-isolate for 14 days**.
- Pregnant healthcare workers should follow risk-assessment and infection-control guidelines following exposure to patients with suspected, probable or confirmed COVID-19.

Antenatal care

- Pregnant patients with known **TOCC risk factors** and those with mild or asymptomatic COVID-19 infection should **delay antenatal visit** by 14 days.
- In units in which routine **GBS screening** is practiced, acquisition of vaginal and/or anal swabs should **be delayed by 14 days** in pregnant women with **TOCC risk factors** or should be performed only **after a suspected/probable case tests negative or after recovery in a confirmed case**. Intrapartum prophylactic antibiotic cover for women with ante- or intrapartum risk factors for GBS is an alternative.
- Antenatal examination of pregnant women infected with COVID-19 should be carried out in a negative-pressure isolation room. **Human traffic around this room should be limited** when it is occupied by an infected patient.

Ultrasound

- Pregnant patients with known **TOCC risk factors** and those with mild or asymptomatic COVID-19 infection should **delay routine ultrasound assessment** by 14 days.
- For suspected, probable or confirmed cases of COVID-19 patients, when appropriate, carry out an ultrasound assessment of **fetal growth and AFI** with UmA Doppler (if necessary). A **bedside scan** is preferred.
- Women with suspected/probable COVID-19 infection, or those with confirmed infection who are asymptomatic or recovering from mild illness, should be monitored for **fetal growth and AFI** with UmA Doppler (if necessary) every 2-4 weekly.
- The pregnancy should be managed according to the clinical and ultrasound findings.
- If the infection is acquired during the first or early second trimester of pregnancy, a **detailed morphology scan at 18–24 weeks** of gestation is indicated.

Ultrasound

- Note that **ultrasound equipment should be cleaned and disinfected** according to manufacturer specifications, taking note of the recommended ‘wet time’ for wiping transducers and other surfaces with disinfection agents.
- Consider using **protective covers for probes and cables**, especially when there are infected skin lesions or when a transvaginal scan is necessary. In the case of high infectivity, a ‘**deep clean**’ of the equipment is necessary.

www.google.com

Intrapartum

- COVID-19 infection itself is **not an indication for delivery**, unless there is a need to **improve maternal oxygenation**.
- Timing and mode of delivery should be **individualized**, dependent mainly on the clinical status of the patient, gestational age and fetal condition.
- In the event that an infected woman has spontaneous onset of labor with optimal progress, she could be allowed to deliver vaginally. **Shortening the second stage by operative vaginal delivery** can be considered, as active pushing while wearing a surgical mask may be difficult for the woman to achieve.
- With respect to a pregnant woman without a diagnosis of COVID-19 infection, but who might be **a silent carrier of the virus**, we urge **caution regarding the practice of active pushing while wearing a surgical mask**, as it is unclear if there is an increased risk of exposure to any healthcare workers attending the delivery without PPE, because forceful exhalation may significantly reduce the effectiveness of a mask in preventing the spread of the virus by respiratory droplets.

Intrapartum

- IOL can be considered when the cervix is favorable, but there should be **a low threshold to expedite the delivery** when there is fetal distress, poor progress in labor and/or deterioration in maternal condition.
- **Septic shock, acute organ failure or fetal distress** should prompt emergency Cesarean delivery (or termination, if legal, before fetal viability).
- For the protection of the medical team, **water birth should be avoided**.
- Both regional anesthesia and general anesthesia can be considered, depending on the clinical condition of the patient and after consultation with the obstetric anesthetist.
- For preterm cases requiring delivery, we urge caution regarding the use of **antenatal steroids** for fetal lung maturation in a critically ill patient. The use of antenatal steroids should be considered in discussion with infectious-disease specialists, MFM subspecialists and neonatologists.
- In the case of an infected woman presenting with spontaneous preterm labor, **tocolysis should not be used** in an attempt to delay delivery in order to administer antenatal steroids.

Intrapartum

Miscarried embryos/fetuses and **placentae** of COVID-19-infected pregnant women should be treated as infectious tissues and they should be disposed of appropriately; if possible, **testing of these tissues** for COVID-19 by qRT-PCR should be undertaken.

Neonatal management

- At present, limited data suggest that there is **no evidence of vertical mother-to-baby transmission** in women who develop COVID-19 infection from mid trimester of pregnancy.
- For suspected, probable and confirmed cases of maternal COVID-19 infection, following delivery of the baby, the **umbilical cord should be clamped promptly** and the neonate should be transferred to the resuscitation area for assessment by the attending pediatric team.
- There is currently insufficient evidence regarding **the safety of breastfeeding and the need for mother/baby separation**. If the mother is severely or critically ill, separation appears the best option, with attempts to express breastmilk in order to maintain milk production.

Neonatal management

- If the patient is **asymptomatic or mildly affected**, breastfeeding and colocation (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.
- Since the main concern is that the virus may be transmitted by respiratory droplets rather than breastmilk, breastfeeding mothers should **ensure to wash their hands** and **wear a three-ply surgical mask** before touching the baby. In case of rooming-in, the baby's cot should be kept at least 2 meters from the mother's bed, and a physical barrier such as a curtain may be used.

Immediate lessons from this case

- Regarding neonatal management of suspected, probable and confirmed cases of maternal COVID-19 infection:
    - Umbilical cord should be clamped promptly and the neonate should be transferred to the resuscitation area for assessment by the attending pediatric team.
    - The mother and the baby should be **separately managed by different healthcare workers**. This is done to **avoid cross-contamination**.
- **Placental biopsies and amniotic fluid** should be sent for qRT-PCR testing.
- Collect complete epidemiological, clinical, laboratory data of every maternal COVID-19 case.

Newborn baby tests positive for coronavirus in London

Child's mother, who was taken to hospital days before birth with suspected pneumonia, also has virus

- Coronavirus – latest updates
- See all our coronavirus coverage

▲ North Middlesex hospital. Photograph: Graeme Robertson/The Guardian

A newborn baby has tested positive for coronavirus in what is thought to be the youngest case of the disease in the UK, it has emerged.

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