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Editorial
How has COVID-19 impacted obstetrics?

Introduction

As of 2 December 2020, Hong Kong has experienced four waves of coronavirus disease 2019 (COVID-19), which is caused by severe acute respiratory syndrome–related coronavirus 2 (SARS-CoV-2), with 6500 confirmed or probable cases and 110 deaths[1]. At least 20 of these cases involved pregnant women. The pandemic has exerted significant strain on the healthcare system and workers worldwide. To contain and mitigate the spread of the disease, obstetricians have implemented a series of infection control protocols such as banning of birthing partners and wearing masks during labour and delivery. However, the inconvenience and challenges these protocols have brought cannot be overlooked.

Impact on patients

Some pregnant women may delay seeking medical advice because of concerns of contracting the virus in hospitals or clinics, missing the optimal time for treatments. They may miss fetal growth assessments, and thus fetal growth parameters and liquor volume may not be adequately monitored, resulting in late diagnosis of fetal growth problems and complications in monochorionic twin pregnancies. Some may miss antenatal visits and even avoid seeking medical attention for non-specific symptoms in pregnancy such as mild abdominal discomfort, mild leaking sensation, and altered fetal movement, thus delaying the diagnosis of pregnancy complications. Nonetheless, the pandemic has led to the promotion of telemedicine. On some occasions, women are triaged by telephone before deciding if they require admissions for further in-person assessments. We should take this opportunity to train healthcare workers to use telemedicine safely without jeopardising patient safety and to develop the infrastructure to support its use.

Clinical care during labour and delivery has also been affected by the pandemic. Under the strict infection control measures of the Hospital Authority, public hospital visitation has been suspended, with exceptions given on compassionate grounds with clinical consideration. As a result, labour companionship has been suspended in public hospitals. The ban was only relaxed intermittently when the incidence of COVID-19 dropped. Labour companionship, either with the husband or other important family members, is a component of quality of care during labour. The ban is likely to lead to less satisfactory labour and delivery experience, with suboptimal emotional and physical support. Some women opt to deliver in private hospitals instead.

The use of nitrous oxide (Entonox) as pain relief during labour has also been affected. There is evidence that SARS-CoV-2 can be spread through aerosol-generating procedures, including tracheal intubation and extubation, non-invasive ventilation, and respiratory tract suctioning[2]. The use of Entonox may increase aerosolisation and the spread of the virus. However, a review suggests that using Entonox will not contribute to the transmission of the virus during labour[3]. A standard single-patient <0.05-μm pore size hydrophobic filter is suggested to be put on the Entonox mouthpiece to prevent contamination of the delivery system during use. Women in labour are required to wear a surgical mask when not using the mouthpiece throughout the labour process, thus the use of Entonox becomes less readily available and less popular. Although there is inconsistent evidence on whether wearing a surgical mask has a detrimental effect on exercise capacity or performance[4-6], it is associated with a higher level of subjective discomfort and increased perception of exertion[6]. The labour process is, therefore, potentially more exhausting with a surgical mask on, further affecting the labour experience.

The postnatal care of women has been affected, especially to those positive for or with suspected SARS-CoV-2 infection. The Hospital Authority imposes separation between neonates and COVID-19-positive mothers, aiming to protect newborns from the potential harm of horizontal infection, but the justification is questionable. A retrospective cohort study in New York suggests that mother-baby separation and avoiding direct breastfeeding may not be warranted to prevent SARS-CoV-2 transmission[7]. The Royal College of Obstetricians and Gynaecologists (RCOG) recommends skin-to-skin care if the neonate is well and not requiring further medical management, while a precautionary approach should be taken in babies who need to be admitted to the neonatal unit[3]. The World Health Organization also advises against the separation of newborns from their infected mothers because the risk of contracting the virus by newborns is relatively low and the infection is typically mild or

asymptomatic[8]. Although the separation policies may be justifiable at present, they may fail to fully account for the short- and long-term impact of mother-baby separation, given the low infant risk of contracting COVID-19 and the importance of proximity and breastfeeding for infants' and women's health[9]. For mothers with negative COVID-19 status, the suspension of hospital visitation could make them more susceptible to postnatal depression when they should be sharing the joy and happiness with their families.

Impact on the workforce

The mental stress of working with an increased risk of contracting SARS-CoV-2 and the concern of transmitting the virus to family and friends should not be underestimated. In a cross-sectional study in the United Kingdom, obstetricians and gynaecologists are associated with a higher rate of both major depressive disorder and generalised anxiety disorder, compared with the UK-wide estimates[10]. The most significant factor for work-related changes to mental health was the need to keep abreast with the frequently changing guidelines and protocols related to COVID-19. For instance, earlier the RCOG guidance suggested that the use of Entonox might facilitate the transmission of the virus, but the latest guidelines published in July 2020[3] stated that there is no reason to avoid its use during labour. The second most significant factor was the concern about being able to provide competent medical care if deployed to a new area. These concerns are not exclusive to the women's healthcare community. It is essential that local departments and the specialty as a whole raise awareness of the high prevalence of mental health conditions and create a supportive environment to facilitate healthcare workers seeking help.

In addition, the pandemic has disrupted training for trainees. At the peak of the pandemic, in order to redistribute resources (personal protective equipment, hospital beds, and staff) to look after COVID-19 cases, the number of elective procedures and outpatient appointments were reduced, as were training opportunities for trainees. Membership examinations of RCOG in the summer were cancelled or postponed worldwide, thus trainees' career progression was affected. In a cross-sectional survey on obstetrics and gynaecology residency training programme in Italy, 60% of the residents perceived that their training was irreversibly compromised[11]. Nevertheless, the pandemic has brought forward the transition from the traditional paper formats of examination and assessment to computer-based testing. It has also strengthened the public-private partnership in facilitating elective operations.

Medical, nursing, and midwifery students' training has all been disrupted immensely. To limit the potential spread of COVID-19 inside hospitals, clinical attachments for medical students have been halted for at least 4 months in Hong Kong. Although this enables the use of multimedia to facilitate student education, the implications of reduced clinical exposure and experience are long-lasting. There is uncertainty regarding how long the situation persists. It is important to recognise the limitation of online teaching and virtual activities and to facilitate face-to-face clinical activities whenever possible.

Impact on research

As of 1 December 2020, there are 51 vaccines in clinical trials and 163 candidate vaccines in preclinical trials[12]. Although the United Kingdom is the first country to approve the COVID-19 vaccine developed by Pfizer and BioNTech, the Medicines and Healthcare products Regulatory Agency states that there are no or limited data relating to pregnant or breastfeeding women and has advised against its use in this group of people at present[13]. Continuous research is crucial to determine the effectiveness and safety of the vaccine during fertility treatments, pregnancy, and lactation. We observe a decline in birth rate contributed by families delaying pregnancy for fear of the unknown associated with COVID-19. This highlights the urgent need to include pregnant women in vaccine trials. We urge regulatory agencies to revisit their policies for the inclusion of pregnant women.

Current evidence suggests that being pregnant is not associated with an increased risk of contracting the virus[14], but those with obesity or other chronic comorbidities are[15]. There is insufficient evidence to indicate that contracting the virus will increase the risk of having a miscarriage or spontaneous preterm birth[16]. However, transplacental or vertical transmission remains a possibility. A case study demonstrated transplacental transmission of SARS-CoV-2 during the last weeks of pregnancy by immunohistochemistry and a much higher viral load in placental tissues than in amniotic fluid and maternal or neonatal blood[17]. It remains unclear what exactly increases the risk of vertical transmission. Research requires funding (public or private), which is finite. Allocating more resources to one area means other research topics may be neglected. We have the responsibility to remain committed to adequate, fair, and sustained research and development funding in all areas.

Conclusion

The impact of the COVID-19 pandemic on

women's healthcare has been profound, affecting patients, front-line workers, and researchers. It is almost certain that there will be more waves of the disease before a vaccine or an effective therapeutic drug becomes widely available. It is vital for the community to work together in this challenging time and take it as an opportunity to improve practice and training, which may be useful in the post-COVID-19 era.

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References

1. The Government of Hong Kong SAR. Together, we fight the virus! https://www.coronavirus.gov.hk/eng/index.html. Accessed 2 December 2020.
2. Tang S, Mao Y, Jones RM, et al. Aerosol transmission of SARS-CoV-2? Evidence, prevention and control. Environ Int 2020;144:106039. Crossref
3. Royal College of Obstetricians and Gynaecologists. Coronavirus (COVID-19) infection and pregnancy. https://www.rcog.org.uk/en/guidelines-research-services/guidelines/coronavirus-pregnancy/ Accessed 11 October 2020.
4. Shaw K, Butcher S, Ko J, Zello GA, Chilibeck PD. Wearing of cloth or disposable surgical face masks has no effect on vigorous exercise performance in healthy individuals. Int J Environ Res Public Health 2020;17:8110. Crossref
5. Epstein D, Korytny A, Isenberg Y, et al. Return to training in the COVID-19 era: the physiological effects of face masks during exercise. Scand J Med Sci Sports 2021;31:70-5. Crossref
6. Fikenzer S, Uhe T, Lavall D, et al. Effects of surgical and FFP2/N95 face masks on cardiopulmonary exercise capacity. Clin Res Cardiol 2020;109:1522-30. Crossref
7. Dumitriu D, Emeruwa UN, Hanft E, et al. Outcomes of neonates born to mothers with severe acute respiratory syndrome coronavirus 2 infection at a large medical center in New York city. JAMA Pediatr 2020:e204298. Crossref
8. World Health Organization. Clinical management of COVID-19: interim guidance, 27 May 2020. World Health Organization; 2020. https://www.who.int/publications/i/item/clinical-management-of-covid-19 Accessed 11 October 2020.
9. WHO Essential newborn care and breastfeeding. Geneva: World Health Organization; 2002. https://apps.who.int/iris/bitstream/handle/10665/107481/e79227.pdf Accessed 18 October 2020.
10. Shah N, Raheem A, Sideris M, Velauthar L, Saeed F. Mental health amongst obstetrics and gynaecology doctors during the COVID-19 pandemic: results of a UK-wide study. Eur J Obstet Gynecol Reprod Biol 2020;253:90-4. Crossref
11. Bitonti G, Palumbo AR, Gallo C, et al. Being an obstetrics and gynaecology resident during the COVID-19: impact of the pandemic on the residency training program. Eur J Obstet Gynecol Reprod Biol 2020;253:48-51. Crossref
12. World Health Organisation. Draft landscape of COVID-19 candidate vaccines. https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines Accessed 3 December 2020.
13. Medicines and Healthcare products Regulatory Agency. Information for Healthcare Professionals on Pfizer/BioNTech COVID-19 vaccine. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940565/Information_for_Healthcare_Professionals_on_Pfizer_BioNTech_COVID-19_vaccine.pdf Accessed 3 December 2020.
14. Poon LC, Yang H, Kapur A, et al. Global interim guidance on coronavirus disease 2019 (COVID-19) during pregnancy and puerperium from FIGO and allied partners: information for healthcare professionals. Int J Gynaecol Obstet 2020;149:273-86. Crossref
15. Knight M, Bunch K, Vousden N, et al. Characteristics and outcomes of pregnant women admitted to hospital with confirmed SARS-CoV-2 infection in UK: national population based cohort study. BMJ 2020;369:m2107. Crossref
16. Yan J, Guo J, Fan C, et al. Coronavirus disease 2019 in pregnant women: a report based on 116 cases. Am J Obstet Gynecol 2020;223:111.e1-111.e14. Crossref
17. Vivanti AJ, Vauloup-Fellous C, Prevot S, et al. Transplacental transmission of SARS-CoV-2 infection. Nat Commun 2020;11:3572. Crossref