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Designated antenatal clinic for pregnant women with COVID in the fifth wave of pandemic

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We report our experience in setting up a designated antenatal clinic in the Kowloon East Cluster during the fifth wave of COVID pandemic for infected pregnant women.

Keywords: COVID-19; Pregnancy; Prenatal care

Background

In Hong Kong, the fifth wave of the COVID pandemic started in January 2022. In the first 2 weeks of February, there were 12 344 positive cases (94 imported and 12 250 local cases)[1]. A high proportion of cases involved pregnant women, as the vaccination rate among pregnant women was lower than that in the adult population, owing to unfounded concerns about the safety of vaccination during pregnancy. According to the survey conducted in our unit from 16 August 2021 to 15 October 2021, 87.6% of 816 pregnant women who attended our antenatal clinic did not have any COVID vaccination, and only 1.7% of them would consider having vaccination during pregnancy[2]. Between 6 January and 21 March 2022, the fifth wave resulted in 1 049 959 confirmed cases and 5906 COVID-19–associated deaths[3]. The proportion of pregnant women in confirmed cases is not known, as pregnancy status is not a parameter in the Department of Health statistics.

Need for a designated antenatal clinic

In early February, increasingly more pregnant women with confirmed COVID were unable to attend antenatal visits as scheduled. Our initial tactic was to postpone the date of antenatal visits until they recovered and until they passed the quarantine period of 14 days from the onset of symptoms if they were unvaccinated, or 7 days from the onset of symptoms if they completed two doses of vaccination. However, most of them had not completed vaccination, and the postponement of antenatal visits for 14 days was clinically risky, if not unfeasible, particularly for women in late third trimester. Even routine checking of blood pressure and urine albumin for signs of pre-eclampsia or checking the symphysis fundal height for signs of fetal intrauterine growth restriction could not be provided for these women with COVID infection. In addition, many infected women were concerned about fetal wellbeing. Some women complained of decreased fetal movement, which we could not disregard without proper assessment. Some obstetric units provide tele-consultation for such women. Nonetheless, assessment of blood pressure, urine albumin, symphysis fundal height, and fetal heart rate cannot be provided through tele-consultation.

Some infected women attended the accident and emergency (A&E) department for decreased fetal movement or other concerns about fetal well-being. However, the A&E department was already overwhelmed by infected patients, particularly elderly patients with severe symptoms. Many were put in camp beds in temporary tents or in the underground corridors between two main clinical buildings. Two of our obstetric and gynaecological wards were converted to COVID-enhanced surveillance wards, and thus admitting these women presenting at the A&E department was practically impossible. To reduce unnecessary admissions, we advised our A&E colleagues to call the on-call obstetric residents to assess these women directly in the A&E department. However, equipment such as cardiotocography and ultrasonography machines with obstetric biometry could not be transported to the A&E department owing to a lack of space. Occasionally, the on-call obstetric team was engaged in emergency operations

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and hence a long wait for these women. After the first week of disarray, a proposal was made to set up a designated antenatal clinic for infected pregnant women within the Kowloon East Cluster to ensure maternal and fetal safety and to relieve the pressure of A&E department.

Place for the designated antenatal clinic

A suitable place for the designated antenatal clinic should provide a 'quarantined' route to enter into our hospital and antenatal clinic without risks of cross-infection to other non-infected patients and staff.

On 16 February 2022, the Hospital Authority designated seven general out-patient clinics (in Shau Kei Wan, Kennedy Town, San Po Kong, Kowloon Bay, Kwai Chung, Sha Tin, and Tin Shui Wai) for confirmed COVID-19 patients, as the number of confirmed cases overwhelmed the capacity of isolation facilities of public hospitals and the community treatment and isolation facilities. On 15 March 2022, the number of designated clinics gradually increased to 23 at the peak of the fifth wave. Dr Pang Fai CHAN, Chief of Service of the Department of Family Medicine and Primary Healthcare in the Kowloon East Cluster was aware of our difficulty in finding a suitable place. After further discussion, the designated antenatal clinic was set up at the Kowloon Bay Health Centre General Out-patient Clinic on 23 February 2022.

Appointment and triage in the designated antenatal clinic

There was one consultation session every Wednesday morning. Further sessions would be added if the number of infected pregnant women increased exponentially. Fortunately, the number of infected cases started to fall from its peak in late March.

Pregnant women booked in Kowloon East Cluster and infected with COVID were diverted to two designated midwives who contacted the women by phone to gather further clinical details, including date of onset of COVID symptoms, the date of diagnosis of COVID-19, vaccination status, specific COVID symptoms, pregnancy symptoms such as vaginal bleeding, decreased fetal movement, results of most recent antenatal assessment, and the scheduled date of next follow-up. Patients with severe COVID symptoms such as high fever and shortness of breath were advised to attend A&E department. A consultant of maternal fetal medicine in charge of the designated antenatal clinic reviewed the clinical details and the ARS for any antenatal risk factors, pre-existing medical problems such as hypertension, or any on-going obstetric problems that need close surveillance. If a patient had pregnancy symptoms or specific concerns, the consultant would contact the patient by phone to determine whether admission was needed. For those with mild and non-urgent symptoms, appointment was arranged within the next few days. For those without symptoms or concerns, appointment would depend on gestation and findings of the most recent antenatal assessment. For those due for an antenatal check, appointment would be arranged accordingly. Antenatal appointments may be arranged in the usual antenatal clinic after the patient was taken off isolation. For example, a low-risk woman with 37-week gestation who had her last antenatal visit at 35 weeks would be arranged an appointment at the designated antenatal clinic as soon as possible, whereas a woman at 22-week gestation with her last antenatal visit at 20-week gestation would be followed up in the usual antenatal clinic after she recovered from COVID and passed the quarantine period. Based on the triage by the consultant, the midwives would inform the women the date and place for the antenatal follow-up as appropriate. Doctors in the Kowloon Bay designated clinic can also refer pregnant women to our designated antenatal clinic for obstetric assessment. Referrals from private sector was allowed, as pregnant women were unable to seek consultations from private sector once confirmed with COVID infection.

Staff and equipment in the designated antenatal clinic

The designated antenatal clinic has access to the Clinical Management System (CMS) and Antenatal Record System (ARS) of the Kowloon East Cluster. Patient registration and future appointment booking can be done through the CMS. Laboratory tests can be ordered as usual, and results can be traced directly from the CMS. Consultation notes can be entered into the ARS via the CMS.

Ultrasonography and cardiotocography machines, and single-use speculums were transferred to the designated antenatal clinic (Figure). Blood tests for complete blood picture, liver and renal functions and high vaginal swabs can be ordered. Group B streptococcus culture bottles were not available, as a refrigerator for storage is needed and the expiry date for the bottles is short. The bottles were brought to the designated clinic every week by the attending doctor for Group B streptococcus screening at the appropriate gestation to prepare for delivery. Simple medications such as paracetamol and cough mixtures can be prescribed through the CMS.

Figure. The designated antenatal consultation room is equipped with cardiotocography and ultrasonography machines and has access to the Clinical Management System

The nursing staff checked the blood pressure, urine albumin, and sugar levels of pregnant women. The consultant then performed routine antenatal care, ultrasound scanning (for fetal viability, preliminary fetal morphology, and fetal growth), and cardiotocography (if necessary). To minimise the number of staff exposed to infected patients, the consultation room is manned by one consultant without any supporting nursing staff, as the consultant can provide comprehensive antenatal care and can handle all clinical scenarios independently without any backup. This minimises the need for referring patients back to the hospital.

Experience in the designated antenatal clinic

The designated antenatal clinic has operated smoothly since the fifth wave of the COVID pandemic. The only difference from the usual antenatal clinic is the need to wear a full set of personal protective equipment and performing all clinical assessments without any nursing support. Fortunately, the number of patients attending the designated clinic has not been overwhelming.

The designated antenatal clinic has been welcomed by those who attended it. They were satisfied that routine antenatal care was catered for, concerns were addressed, and fetal wellbeing was reassured. We encountered women who previously had antenatal care in private sector but were turned down once confirmed COVID positive. In their desperation to seek medical care, they attended the general designated clinic and were referred to our designated antenatal clinic. We also encountered patients in early pregnancy (as early as 6-week gestation) complaining of threatened miscarriage who normally would have attended a private gynaecologist or regular early pregnancy assessment clinic. As these options were not feasible once they were confirmed COVID positive, they attended the general designated clinic and were referred to our designated antenatal clinic. With ultrasound scanning, a viable intrauterine pregnancy can be confirmed at the first consultation. This avoids the need to refer patients to the A&E department during the fifth wave. In addition, the settings of the designated clinic enable assessment of near-term patients in details and scheduling admissions for elective induction of labour or elective caesarean sections immediately after completion of 14-day isolation period.

Conclusion

Setting up the designated antenatal clinic during the peak of the fifth wave of COVID pandemic has been beneficial to all stakeholders, particularly women infected with COVID who are desperate to seek medical care amidst uncertainties. Consultation at the designated antenatal clinic is similar to that in usual obstetric clinics. With education on safety of COVID vaccination during pregnancy and increased uptake of vaccination by pregnant women, the number of infected pregnant women is expected to be lower. Nevertheless, with the possibility of emergence of new strains, we suggest that the obstetrics and gynaecology department of each cluster to consider setting up a designated antenatal clinic in case of occurrence of the sixth wave or an outbreak of other infectious diseases in future.

Contributors

CW Kong designed the manuscript. CW Kong, KY Chan, and WY Shiu drafted the manuscript. All authors critically revised the manuscript for important intellectual content. All authors contributed to the manuscript, approved

the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

As editors of the journal, CW Kong and WWK To were not involved in the peer review process of this article. All authors have disclosed no conflicts of interest.

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Data availability

All data generated or analysed during the present study are available from the corresponding author on reasonable request.

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