

Severe COVID-19 pneumonia in a pregnant lady with diabetes mellitus and bronchial asthma: a case report from a semi-urban primary care center in Bangladesh

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ABSTRACT

Pregnant women are more susceptible to complications from respiratory disease due to physiological changes in pregnancy. Coronavirus disease 2019 (COVID-19) like its ancestors, severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle-East respiratory syndrome coronavirus (MERS-CoV), may be associated with more severe disease course in pregnancy and possible adverse outcome to mother and the newborn baby. Here, we present a case of a pregnant lady with severe COVID-19 with oligohydramnios with less fetal movement managed in a resource poor primary care setup.

Key words: COVID-19, oligohydramnios, primary care center.

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INTRODUCTION

Since its emergence in 2019, severe acute respiratory syndrome corona virus type 2 (SARS-CoV-2) has infected more than 665 million people worldwide and had been responsible for 6.69 million deaths globally.¹ Pregnancy and child birth usually do not increase the risk of acquiring SARS-CoV-2 infection but appear to worsen the clinical course and outcome when compared

to non-pregnant ladies of similar age group.² The actual effect of COVID-19 on obstetric and perinatal outcome is yet to be ascertained. Here, we present a case of severe COVID-19 in a pregnant lady with oligohydramnios, diabetes, asthma and obesity.

CASE REPORT

A 30-year-old, 2nd gravidae, diabetic, asthmatic, obese lady with 33 weeks of pregnancy had been admitted into Upazila Health Complex Hospital isolation ward with the complaints of fever and cough for 8 days and breathlessness for 3 days. On examination, she was dyspnoeic with a respiratory rate was 20/min, oxygen saturation at room air was 86%, initial capillary blood glucose was 15.6 mmol/L, blood pressure was 100/70 mm Hg. She was started with supplementary oxygen, low molecular weight heparin, dexamethasone, intravenous ceftriaxone, bronchodilators, inhaled corticosteroids and insulin. On next day, rRT-PCR for SARS-CoV-2 came positive. Though, patient was improving steadily, she was complaining of less fetal movement. Ultrasonography (USG) findings were suggestive of a viable 33 weeks pregnancy with oligohydramnios (amniotic fluid index, AFI – 4.5cm) (Figure 1) with less fetal movement. Biophysical profile was 6/8 and fetal weight was 1.6 kg. Laboratory parameters are shown in Table I.

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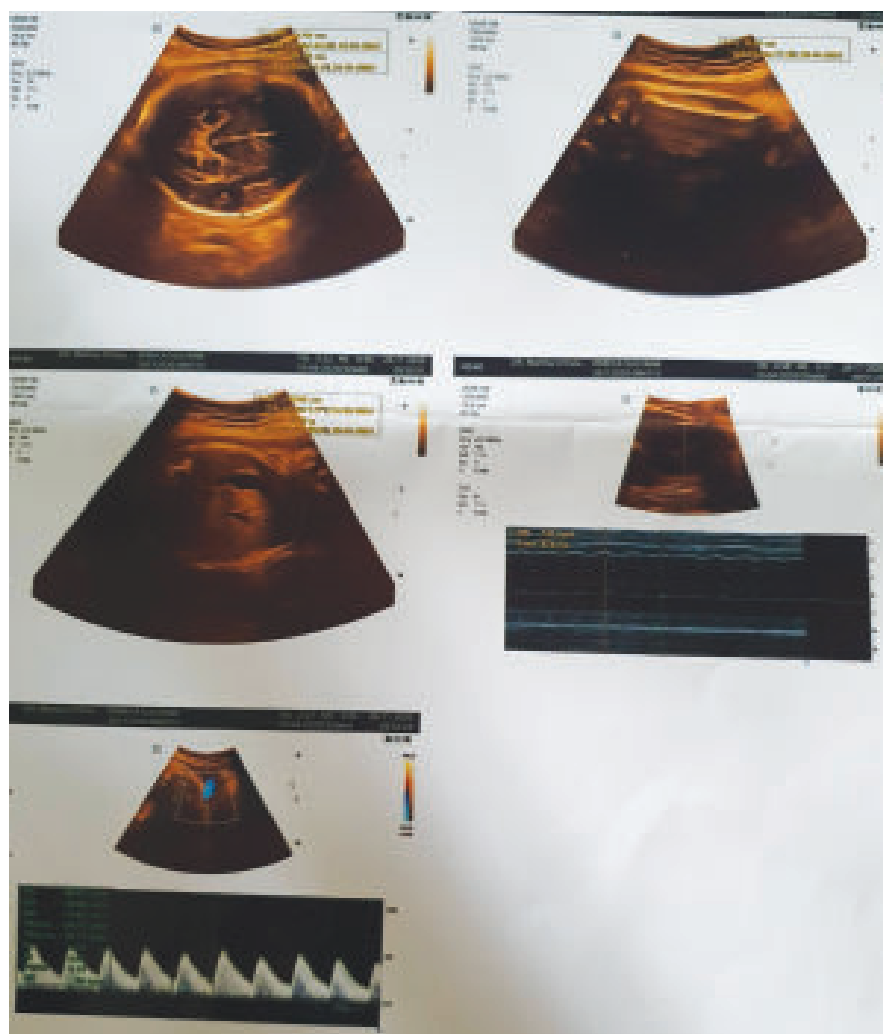


Figure 1. Ultrasonography report revealed oligohy-dramnios

Table I. Routine laboratory parameters of the patient

Lab parameters	Results	Normal value
Haemogram		
a.Hb	10.2 gm/dl	11-13gm/dl
b.Total white cell count	13000/cmm	4,000-11,000/cumm
c.Neutrophil	76%	40-75%
d.Lymphocyte	23%	20-45%
e. Platelet	1.4 lac/cmm	1.5-4 lac/cmm
D-dimer	4390ng/ml	Less than 500ng/ml
Serum creatinine	1.2mg/dl	0.7-1.3mg/dl
C-reactive protein (CRP)	Positive	More than 6 mg/L
Random blood glucose (RBS)	22.8mmol/L	
Alanine amino transferase (ALT)	138U/L	Less than 40U/L

Insulin dosage was intensified, adequate maternal hydration was ensured along with other supportive measures. Fetal heart rate was regularly monitored. After 2 weeks, patient's condition gradually improved. Only enoxaparin and dexamethasone were continued during hospital stay along with other supportive measures. Anti-virals were kept reserved, as she responded to conventional treatment and patient had concomitant transaminitis. As repeat USG was satisfactory, she was discharged after 17 days and after completion of 37 weeks, she delivered a healthy baby by Caesarean section in Debidwar and the indication was her previous history of Caesarean section and less fetal movement. Post-operative period was uneventful and the baby was healthy. Her rRT-PCR came negative after 4 weeks of symptom onset.

DISCUSSION

Being an unprecedented pathogen, very little knowledge was available regarding obstetric and perinatal outcome of COVID-19. But, the effects of its previous predecessors, MERS and SARS on pregnancy outcome was poorer when compared to their non-pregnant counterparts.^{3,4} Though majority of the COVID-19 pregnant patients are asymptomatic, some studies show that, there is an increased likelihood of early pregnancy loss (5%), oligohydramnios (21%), preterm birth (31.7%), Caesarean section (53.3%) in symptomatic COVID-19 patients.⁵ Moreover, after the second wave of COVID-19, it has been observed that pregnant ladies with COVID-19, specially who are obese, hypertensive and diabetic are more prone to severe disease and have increased intensive care unit (ICU) admissions when compared to their non-pregnant counterparts.^{2,5}

Oligohydramnios pertains to amniotic fluid volume (AFV) less than the minimum expected for gestational age. It is diagnosed by ultrasound examination, preferably based on an objective measurement such as AFI ≤ 5 cm or single deepest pocket (SDP) < 2 cm. Oligohydramnios is associated with an increased risk for fetal or neonatal death, which may be attributed to the underlying cause of the reduced AFV, the sequelae of reduced AFV or both.^{7,8} Studies have shown that, the occurrence of oligohydramnios is higher in severe COVID-19 pregnant ladies when compared to asymptomatic or mild cases. Alteration in amniotic fluid volume, possibly due to dehydration and compromised

vascular perfusion in COVID-19 and hypoxaemia are the proposed explanation.⁷ In our case, the patient was diabetic, asthmatic, obese, was in her last trimester and most importantly was not vaccinated. Added on to these comorbidities, she developed oligohydramnios and less fetal movement in the disease course. To deal with a patient like her in an Upazila hospital is at the same time challenging and nery, as many of the routine investigation facilities and USG surveillance are not readily available. The pregnant lady was poor and was not in a situation to be shifted to a higher center. Adequate hydration for oligohydramnios and meticulous follow-up was ensured.

Ladies, who are pregnant or willing to conceive should receive vaccination at the earliest as per recommendations. Also, pregnant ladies should not overlook their respiratory symptoms and consult with their nearby physician and exclude COVID-19. Though, it is expected that, most of the pregnant ladies will come out of this but COVID-19 is never predictable and we, the physicians, should be aware and should create awareness, specially, in rural population about the deadly consequences of severe COVID-19 in pregnancy.

Authors' contribution: CSP and NC were involved in diagnosis, patient's and newborn's medical management, post discharge follow-up, literature review, manuscript writing. US and MMA were involved in obstetric management. MMR was involved in sonographic evaluation. SI was the anaesthetist. AK was the overall supervisor of the case. Authors read and approved the final manuscript for submission.

Conflicts of interest: Nothing to declare.

Consent: Informed written consent was taken from the patient for the publication of this case report and any accompanying images.

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