



## Research Letter

## Successful management of atypical pneumonia in acute respiratory distress syndrome patient during pregnancy

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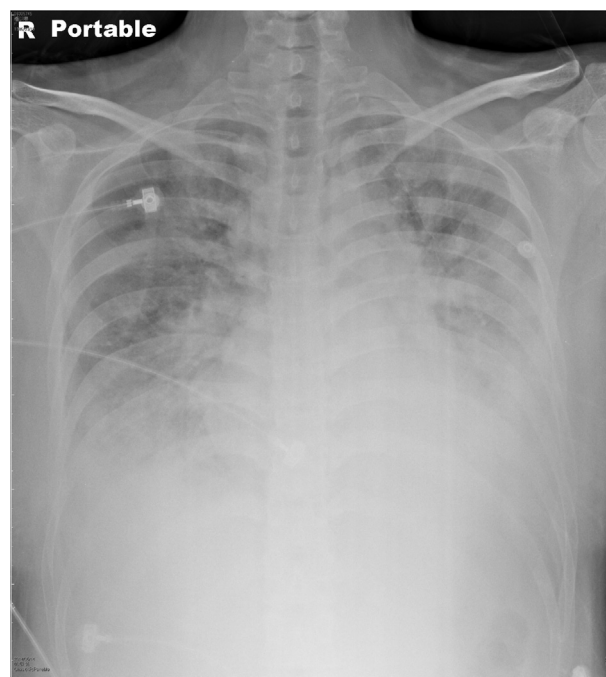
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## Dear Editor,

Atypical pneumonia can be caused by special bacteria, viruses, fungi, and protozoa. It may progress to lobar pneumonia and turn to acute respiratory distress syndrome (ARDS). Treatment of ARDS in pregnant women is particularly challenging because of the high risk of death for both the mother and the fetus. In the cases of refractory impairment of gas exchanges unresponsive to conventional measures, intubation with oxygen supplement is necessary. When caring for a critically ill pregnant woman, the most critical issue is the appropriate time for delivery. We report the management of atypical pneumonia using mechanical ventilation during the second trimester without complications.

A 28-year-old woman (gravida 1, para 0) presented at gestational age 24 weeks and 3 days at the outpatient Department of Obstetrics. She had been ill for 1 week, and demonstrated a nonproductive cough, mild fever with body temperature of 37.6°C, dyspnea, and increased respiratory frequency. The past history was unremarkable, and her prenatal examination was normal. She had orthopnea and tachycardia with a white blood cell count of  $16.5 \times 10^9/L$ , hemoglobin 10.1 g/dL, mean corpuscular volume 92.7 fL, C-reactive protein 3.0 mg/dL, neutrophils 80.7%, and lymphocytes 13.3%. Capillary oxygen saturation was 89% at admission. Oxygen mask with venturi (nonrebreathing bag to achieve high oxygen fraction of near 100%) was given but the patient still progressed to respiratory distress. Her chest x-ray showed pulmonary infiltration over bilateral lower lungs. Blood gas analysis showed severe hypoxemia and mild alkalosis (pH 7.494,  $PO_2$  63.9,  $PCO_2$

35.9,  $HCO_3^-$  27, oxygen saturation 93.0%) was diagnosed. She was transferred to the intensive care unit with a presumptive diagnosis of atypical pneumonia and ARDS. A follow-up chest x-ray showed extensive, bilateral lobar consolidation (Figure 1). Emergent intubation was performed under intravenous anesthesia, ventilated with a tidal volume of 8 mL/kg ideal body weight, a respiratory rate of 40 breaths/min, and a positive end-expiratory pressure of 6–8 cmH<sub>2</sub>O. Her consciousness was still clear post intubation on the 2<sup>nd</sup> day and respiratory function deteriorated progressively despite treatment. Extracorporeal membrane oxygenation therapy was



**Figure 1.** Chest radiography. Alveolar infiltration of whole lobes with pulmonary congestion.

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deliberated due to the possible risk of maternal bleeding, but it was decided to continue the pregnancy. The fetal condition was monitored by bedside Doppler twice per day. Interval obstetric ultrasonography showed normal fetal growth and biophysical profile. Repeated fetal ultrasound scan was performed at gestational age 25 weeks and 5 days, with a normal estimated fetal weight of 1100 g (+4.3% above the mean). She persistently had a nonproductive cough and needed nasal oxygen supplementation. Bacterial cultures of blood, urine, and tracheal aspiration were negative, although a nasal swab was negative for pandemic 2009 H1N1 infection assessed using reverse transcription polymerase chain reaction. Treatment with Tamiflu (300 mg/d) by nasogastric tube and intravenous ceftriaxone were started within 24 hours of symptoms. The patient was discharged from the hospital 3 weeks after admission. A further pulmonary rehabilitation program was

arranged at the chest outpatient department. The mother received regular antenatal care, and a 3350-g normal male baby was born smoothly by elective cesarean delivery at 39 weeks of gestation.

In our patient, emergency delivery was considered immediately after admission, however, no clear signs of fetal distress were evident although the risk of a surgical procedure in such a critical condition was extremely high. For these reasons we found it more reasonable to postpone the delivery, considering mechanical ventilation support to warrant the highest chance of survival to both the mother and the fetus.

#### **Conflicts of interest**

The authors have no conflicts of interest relevant to this article.