Pregnancy with severe influenza A (H1N1) related acute respiratory distress syndrome: Report of three cases from a rural critical care unit in India

Sir,

Pregnant women are important medically susceptible subset of the population. Changes in immune function during pregnancy alter a pregnant woman's susceptibility to and severity of certain infectious diseases. These alterations are particularly problematic because physicians may hesitate to provide prophylaxis or aggressive treatment to pregnant women because of concerns about effects on the fetus.

Because of concerns about the severity of the disease during pregnancy, the Center for Disease Control and Prevention has implemented enhanced surveillance for infection and has placed them in a group that merits priority vaccine administration. Pregnant women were more likely to be hospitalized or admitted to Intensive Care Units (ICU) and were at higher risk of death compared to nonpregnant adults. In critically ill pregnant patients, spectrum of clinical features associated with H1N1 infection includes, rapidly progressive lower respiratory tract disease and acute respiratory distress syndrome (ARDS) with refractory hypoxemia and secondary bacterial infection, septic shock, and multiorgan failure. Increased mortality was seen in patients with ARDS following H1N1 influenza as compared to all other causes of ARDS in Indian settings.[1]

We report three pregnant patients with bilateral pneumonia in severe ARDS, admitted in our ICU. Their nasopharyngeal and endotracheal swabs were positive for H1N1. In our experience, we noticed the wide variation in the course of events that the disease displayed during ICU stay [Table 1]. The first Case A Figure 1, the delay in termination of pregnancy and also the delay in starting the antiviral therapy made her more prone to fatal outcome. Whereas in Cases B Figure 2 and C Figure 3, early delivery combined with a lung-protective ventilation strategy provided significantly better fetal and maternal outcomes.[2] We also noticed that prone

![Timeline of Case A](image)

**Figure 1: Timeline of Case A**
position ventilation\textsuperscript{[4]} and low-dose methylprednisolone infusion\textsuperscript{[3,5]} improved oxygenation and eventually outcomes in the survivors Figure 4.

Early treatment with antiviral medication is recommended for pregnant women with suspected novel H1N1 infection regardless of the gestational age.\textsuperscript{[6]} Oseltamivir has been used quite extensively in pregnancy with good results, and of most benefit when administered within 48 h of symptom onset and may reduce the incidence of pneumonia in patients with seasonal influenza.\textsuperscript{[8]} In a report of six maternal deaths with H1N1 pandemic influenza, none of these patients had received antiviral within 48 h of onset of symptoms.\textsuperscript{[7]}

In conclusion, our experience suggests that pregnant women are at high-risk of complications such as ARDS requiring mechanical ventilation from H1N1 influenza. We also suggest the following.

Early termination of pregnancy may result in improvement in the mother’s condition. The timing to terminate is a critical decision necessitating proper cooperation with an obstetrician. Antiviral drugs should
be started empirically. To follow ARDS net ventilation protocol and prone position ventilation as necessary.

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Conflicts of interest
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