

## Pregnancy and H1N1 influenza – lessons to learn

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Pregnancy, with or without additional complications, constitutes a high-risk condition for complications of influenza infection and warrants early intervention with neuraminidase inhibitors such as oseltamivir, if influenza is suspected. Treatment should not be

delayed for laboratory confirmation. In South Africa, the high burden of HIV infection is a further complication.

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**To the Editor:** Pregnancy has long been recognised as a risk factor for both pandemic and seasonal influenza. Changes in the immune, cardiac and respiratory systems increase the risk of complications, as evidenced by higher hospitalisation and mortality rates in pregnant women during influenza outbreaks. The 2009 H1N1 pandemic was no exception.<sup>1</sup> In South Africa, the high burden of HIV infection is a further complication. In an interim report of pH1N1-associated deaths in 2009, 25 (28%) of 88 deaths occurred in pregnant or puerperal women – 18 of 21 of these where data were known, occurred in the third trimester. In 14 of these women where HIV status was known, 10 were HIV-positive and 4 of the 21 had active pulmonary TB.<sup>2</sup>

Further information on pH1N1 in pregnancy in South Africa was provided from an analysis of 11 deaths reported to the National Committee on Confidential Enquiries into Maternal Deaths in South Africa between July and September 2009.<sup>3</sup> One woman was primigravid, and the mean gestational age was 31 (range 22 - 38) weeks; 9 cases were in the third trimester of pregnancy. Four or 5 cases had underlying anaemia, 2 were diabetic and 1 was asthmatic. Four of the 8 patients who were HIV-tested were positive, and all 4 had CD4 counts  $\leq 200$  cells/ $\mu$ l. None of the HIV-infected women was on antiretroviral therapy. Seven cases required ventilation. Most cases presented with cough, fever, diarrhoea, muscle aches and breathlessness, and had symptoms for 3 - 4 days before seeking medical attention. In some, severe illness (pneumonia and respiratory distress syndrome) developed very rapidly. Laboratory tests for H1N1 were not performed on admission to hospitals because H1N1 was not initially considered.

It is now universally accepted that pregnancy, with or without additional complications, constitutes a high-risk condition for complications of influenza infection and warrants early intervention

**Table I. Clinical symptoms and signs warranting careful attention in pregnant women with influenza-like symptoms**

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Fever  $>39^{\circ}$

Diarrhoea and vomiting

Breathlessness

Underlying chronic conditions with above symptoms:

- Anaemia
- Asthma
- Diabetes
- HIV

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with neuraminidase inhibitors such as oseltamivir, if influenza is suspected (Table I). Treatment should not be delayed for laboratory confirmation. Although not ideal, delayed administration (over 48 hours) could still reduce maternal morbidity and mortality. The regular dose of oseltamivir is 75 mg bd for 5 days; however, if circumstances warrant it, a higher dose of 150 mg bd for a longer period may be necessary. Laboratory confirmation is by PCR; presently available point-of-care tests such as antigen detection are inadequately sensitive and should not be relied on to confirm diagnosis. Caesarean section does not appear to improve maternal outcome<sup>4</sup> and is not recommended. However, early delivery in the third trimester may be necessary if the patient requires mechanical ventilation.

In very ill patients, respiratory ventilation may be required. In our case series, 3 of the 11 patients required assisted respiration in an ICU. Patients with severe symptoms should have oxygen saturation monitoring and arterial blood gases performed. Antipyretics such as paracetamol are recommended to reduce fever in the first trimester as hyperpyrexia in early pregnancy has been associated with congenital abnormalities such as neural tube defects, cleft palate and congenital heart defects.<sup>4</sup>

**References**

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