Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Pregnancy and H1N1 infection

Denise Jamieson and colleagues (Aug 8, p 451)[1] highlight the risk of infection with pandemic influenza A virus (H1N1) in pregnant women, documenting high rates of hospital admission and complications. Notably, six deaths in H1N1-infected pregnant women were reported between April 15 and June 16, 2009, in the USA.

These observations suggest that antivirals ought to be used to prevent and treat H1N1 infection in high-risk pregnant women. Indeed, the US Centers for Disease Control and Prevention recommend chemoprophylaxis with either oseltamivir or zanamivir against H1N1 influenza for people at risk of complications, including pregnant women.[2] However, a survey[3] has shown that oseltamivir has important side-effects (including gastrointestinal and neuropsychiatric symptoms) in more than half of treated children, raising serious questions about the wide use of this compound, not only in children, but also in pregnancy.

This side-effect profile, together with the detection of oseltamivir-resistant strains,[4] suggests that novel safe compounds are necessary for the treatment of H1N1 infection in pregnancy. Two human anti-influenza A H5N1 monoclonal antibodies (hMAbs)[5] have been cloned, and their H5N1-neutralising potential has been assessed against highly pathogenic avian strains, indicating that powerful and safe treatment of influenza H5N1 infections with hMAbs is possible. From this point of view, a strategy for the treatment and prevention of H1N1 infection in pregnancy based on neutralising human monoclonal antibodies should be planned in the future, being also aware of the efficient protection of the fetus by circulating IgGs.

We declare that we have no conflicts of interest.

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Denise Jamieson and colleagues[1] highlight high morbidity and mortality rates in pregnant women infected with the H1N1 influenza virus. Admission rates were 41% and the median time from symptom onset to receipt of antiviral therapy was 9 days. Could earlier initiation of antiviral treatment have resulted in a better outcome?

In 2003, Singapore was notably affected by severe acute respiratory syndrome (SARS),[2] which led to the formation of a rapid response team, hospital quarantine, infectious disease control measures, temperature screening at borders and in public buildings and spaces, timely public education, and constant communication with the public.[3,4] In response to the Centers for Disease Control and Prevention's advice on poorer outcomes in H1N1-affected pregnant women on May 12, 2009, the above SARS strategies, coupled with rapid access to quantitative reverse-transcriptase PCR within 24 h of presentation and early institution of antiviral therapy, was started from June 30, 2009, in Singapore.

Between July 7 and Aug 9, 2009, 28 pregnant women were diagnosed with H1N1 at the National University Hospital in Singapore. The time from symptom onset to initiation of oseltamivir treatment was a median of 2 days. Three women were admitted for observation, and one developed pneumonia; initiation of treatment was 4 days after symptom onset in this woman. No deaths have been reported nationwide in pregnant women thus far.

Our experience suggests that timely medical attention with early recourse to antiviral therapy is associated with a better outcome in H1N1-affected pregnant women.

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Authors' reply

We agree with Roberto Burioni and colleagues that novel treatment approaches for influenza virus infection such as use of anti-influenza monoclonal antibodies might hold promise and are certainly worth pursuing. However, most investigations have used animals, and treatment in human beings has mainly focused on the most severe cases. Treatment with anti-influenza virus antibodies has not yet been shown safe and effective for use in non-pregnant people.[1] It will probably be even longer before such treatment options would be considered for pregnant women since additional