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2009 Pandemic Influenza A (H1N1) in Pregnant Women Requiring Intensive Care - New York City, 2009, *MMWR*, March 26, 2010 / 59(11);321-326

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5911a1.htm?s_cid=mm5911a1_e

Pregnant women are at increased risk for severe illness and complications from infection with seasonal influenza and 2009 pandemic influenza A (H1N1). To characterize the severity of 2009 H1N1 infection in pregnant women, the New York City Department of Health and Mental Hygiene (DOHMH) conducted active and passive surveillance for cases of 2009 H1N1 infection in pregnant women requiring intensive care. This report summarizes the results of that surveillance, which found that, during 2009, 16 pregnant women and one who was postpartum were admitted to New York City intensive-care units (ICUs). Two women died. Of the 17 women, 12 had no recognized risk factors for severe influenza complications other than pregnancy. All 17 women received antiviral treatment with oseltamivir; however, treatment was initiated ≤ 2 days after symptom onset in only one woman and was begun ≥ 5 days after symptom onset in four women. Because initiation of antiviral treatment ≤ 2 days after onset is associated with better outcomes, pregnant women should be encouraged to seek medical care immediately if they develop influenza-like symptoms, and health-care providers should initiate empiric antiviral therapy for these women as soon as possible, even if > 2 days after symptom onset. Health departments and health-care providers should educate pregnant and postpartum women regarding the risks posed by influenza and highlight the effectiveness and safety of influenza vaccination. Obstetricians and other health-care providers should offer influenza vaccination to their pregnant patients.

During 2009, a total of 17 patients (16 pregnant women and one who was postpartum) met the case definition; nine were admitted to ICUs during April--June, and eight were admitted during October-December. No patients met the case definition during July-September. Median age of the patients was 23 years (range: 20-37 years), and median gestational age at hospital admission was 34 weeks (range: 6-41 weeks). Median length of hospital stay was 12 days (range: 4-38 days). Five of the 17 women had risk factors for severe influenza complications recognized by the Advisory Committee for Immunization Practices (ACIP) other than pregnancy. One patient had asthma and cardiovascular disease (diagnosed postmortem). The other four patients had sickle cell disease, asthma, seizure disorder, and diabetes mellitus, respectively. Only one of the 17 patients had received 2009 H1N1 vaccine, according to the medical records; she had been administered H1N1 vaccine > 4 weeks before hospitalization, after being administered seasonal influenza vaccine > 8 weeks before hospitalization. Eleven of the 17 women were in their third trimester, including five who developed acute respiratory distress syndrome (ARDS). All 17

women received antiviral treatment with oseltamivir; however, treatment was initiated ≤ 2 days after symptom onset in only one woman and was begun ≥ 5 days after symptom onset in four women; initiation of antiviral treatment ≤ 2 days after onset is associated with better outcomes.

Four of the nine women who gave birth during their 2009 H1N1 hospitalization had an emergency cesarean delivery; eight infants were live-born (including one who died soon after birth), and one was stillborn. Six of the eight live-born infants were admitted to a neonatal ICU.

An analysis of New York City 2009 H1N1 hospitalizations during May-June 2009 showed that pregnant women were 7.2 times more likely to be hospitalized and 4.3 times more likely to be admitted to an ICU than nonpregnant women. Immunologic changes, increased ventilatory demand, and decreased functional residual capacity and oncotic pressure all are postulated to predispose pregnant and postpartum women to severe respiratory complications from influenza virus infection.

The case series in this report highlights some delays in pregnant women seeking care and obtaining appropriate diagnosis and treatment of 2009 H1N1 virus infection in New York City, despite extensive outreach to the public and health-care providers by public health officials. The illustrative cases highlight some factors contributing to the delays, including false-negative rapid diagnostic test results and not taking oseltamivir as prescribed. In addition, only one of the 17 women was reported to have received 2009 H1N1 vaccine. **Although no vaccine is 100% effective, vaccination remains the most important and effective means of preventing influenza among pregnant women.**

Pandemic 2009 Influenza A(H1N1) Virus Illness Among Pregnant Women in the United States, Alicia M. Siston; Sonja A. Rasmussen; Margaret A. Honein; et al., *JAMA*. 2010;303(15):1517-1525 (doi:10.1001/jama.2010.479) (**Arkansas** contributed to this report)

Conclusions Pregnant women had a disproportionately high risk of mortality due to 2009 influenza A(H1N1). Among pregnant women with 2009 influenza A(H1N1) influenza reported to the CDC, early antiviral treatment appeared to be associated with fewer admissions to an ICU and fewer deaths.

JAMA. 2010;303(15):1517-1525 www.jama.com

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