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A CASE REPORT OF PREGNANT WOMEN INFECTED WITH INFLUENZA A (H1N1)

Yuan-Ping Chen, Chun-Lin Tao, Duo-He Sun, Huan Lu*

Department of Obstetrics and Gynecology, Fengxian Hospital, Southern Medical University, Shanghai 201499, P. R. China.

Corresponding Author:- **Huan Lu**
E-mail: 35530049@qq.com

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ABSTRACT
Severe complications of pregnant women caused by influenza viruses are not a new phenomenon. This paper reports a case of severe preeclampsia complicated with respiratory failure caused by H1N1 infection, which was successfully rescued in our hospital in 2013. Pregnant women have been found to be at a higher risk for morbidity and mortality from both seasonal and pandemic influenza. The use of antiviral drugs within 48 hours after the onset of symptoms is the key to cure pregnancy associated with influenza.

INTRODUCTION

Severe complications of pregnant women caused by influenza viruses are not a new phenomenon. Pregnant women have been found to be at a higher risk for morbidity and mortality from both seasonal and pandemic influenza compared to nonpregnant adults [1,2]. Changes in physiology and immune function in pregnancy may lead pregnant women to be predisposed to more severe disease [3]. H1N1 influenza outbroke worldwide in 2009–2010. Although the epidemic has been effectively controlled, pregnant women are susceptible to influenza virus every flu season. This paper reports a case of severe preeclampsia complicated with respiratory failure caused by H1N1 infection, which was successfully rescued in our hospital in 2013.

CASE HISTORY

Twenty-one years old female was hospitalized for twins, severe preeclampsia and hypoalbuminemia. The patient began to appear fever (the highest temperature 38.5 degrees Celsius), headache, cough expectoration and other symptoms of respiratory tract infection in second day. We ended the pregnancy in day 3 because patient had no signs of improvement after treated with antibiotic (second generation cephalosporins).

Two newborns were hospitalized for preterm birth. In day 7, the patient transferred to ICU for symptoms and various auxiliary examination [Fig.1] prompted respiratory failure. Adjuvant therapys were used including organ cut, antibacterial, nutritional support and cortical hormone use. In day 9, the patient was treated with oseltamivir following the correctly diagnosed of H1N1 infection. Patient's temperature was normal in day 15 and discharged in day 33.

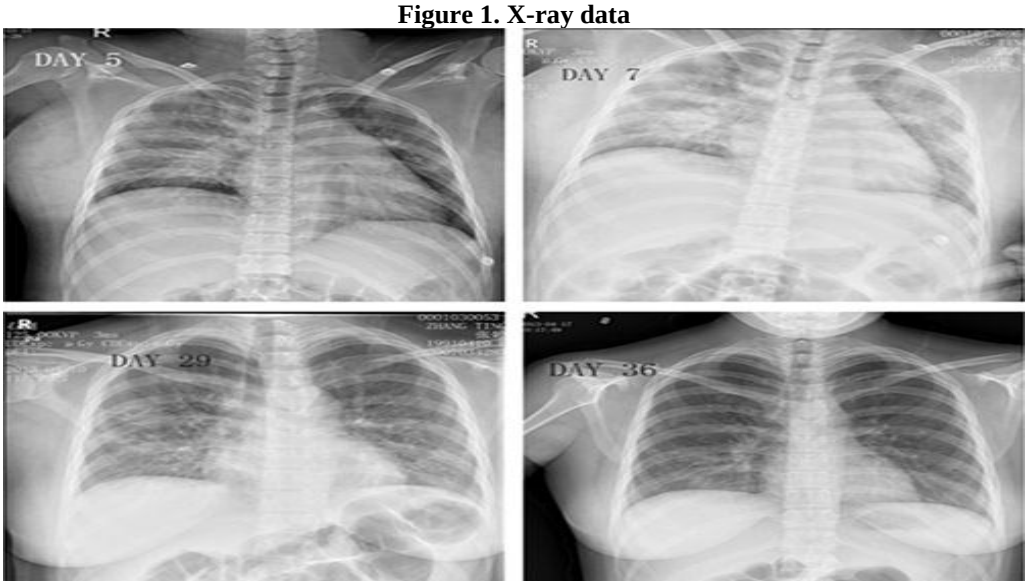
DISCUSSION

Influenza is a potentially serious infectious disease that causes yearly outbreaks of respiratory illness, which occur in people of any age worldwide and are most commonly seen during the winter months. Significant morbidity and mortality can result, especially in certain populations such as persons aged 65 years or greater, young children, and pregnant women. Due to the special physiological status, pregnant women are more susceptible to the infection of a variety of pathogens [4] and are at higher risks for complications, including hospitalization or death [1, 5]. A study comparing hospital admissions for pregnant women during influenza season to the year before they were pregnant found that pregnant women were up to

five-times more likely to be admitted for a respiratory illness [1]. In a study of 19 seasonal influenza seasons, pregnant women had a significantly higher rate of hospitalization due to an acute cardiopulmonary event during influenza season than women during the postpartum period [6]. Especially in the 2009 H1N1 influenza outbreak, 10% of hospitalized patients were pregnant women in California [2]. The reports from China showed that pregnant women infected with H1N1 were mostly hospitalized due to severe complications and most of the patients were admitted to the ICU [7-9]. In a case series from Canada, 78 pregnant women were more likely to require admission to the ICU (2.59 versus 0.33 per 100,000) compared to nonpregnant women of child-bearing age [10]. The case in our hospital is twin pregnancy complicated with severe preeclampsia in late pregnancy. Although no obvious epidemiological contact history, the patient are more susceptible to H1N1 infection due to the physical weakness, malnutrition, twin pregnancy and obstetric complications. She appeared respiratory symptoms in day 2 and were admitted to the ICU for respiratory failure in day 7.

The antiviral medications most widely used during pregnancy are the neuraminidase inhibitors oseltamivir, which act as an important adjunct to immunization. It works most effectively early in the course of illness (within 12 hours), and should ideally be started within 24–48 hours of the onset of symptoms. The antiviral medication is not routinely recommended for people at low risk of complications from seasonal influenza as it is unclear if there is a benefit in this population. However, in cases of moderate or severe disease, and in high risk populations (including pregnant women), antivirals are recommended [11, 12]. Patients who treated with antiviral medication after 48 hours were more severe than those who used the drug in 48 hours [13-15]. Early intervention and antiviral therapy is the key to reduce the chance into ICU and the mortality of pregnant women [16]. In this case, the patient appeared fever, headache and cough in day 2 after admission. Although we didn't use of antiviral treatment within 48 hours, the early intervention and support treatment may be the key to successful treatment. Because early intervention relieved the hypoxemia and avoided multiple organ dysfunction syndrome. The appropriate time to terminate pregnancy may be another factor. The available evidence suggests that transplacental transmission is rare and viremia is infrequent [17, 18]. However, some studies have documented pregnancy loss and adverse fetal effects among women with both seasonal and pandemic influenza during pregnancy. A Canadian population-based cohort study found that infants born to women who were hospitalized for a respiratory illness during influenza season over 13 years had a significantly increased risk of being born small for their gestational age (adjusted relative risk 1.66) and having a lower mean birthweight [19]. There was an increased rate of fetal death and likelihood of preterm birth among pregnancies complicated by 2009 H1N1 influenza [20, 21].

Figure 1. X-ray data



Day 5: Lungs infection with pleural effusion; Day 7: Bilateral diffuse lung infection associated with pulmonary edema, a small amount of pleural effusion; Day 29: Bilateral lung infection; Day 36: Bilateral lung infection, better than 1week ago.

CONCLUSION

In this case, the patient was admitted to the hospital at 35+2 weeks with a twin pregnancy and ended the pregnancy in day 3 due to the symptoms improvement. Two babies are premature but the prognosis is good. In a word, pregnant women are susceptible to influenza and prone to serious complications. The use of antiviral drugs within 48 hours after the onset of symptoms is the key to cure pregnancy associated with influenza.

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CONFLICT OF INTEREST:
The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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