



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

ACOG COMMITTEE OPINION

Number 753

Immunization, Infectious Disease, and Public Health Preparedness Expert Work Group

The Society for Maternal-Fetal Medicine endorses this document. This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Immunization, Infectious Disease, and Public Health Preparedness Expert Work Group, in collaboration with members Geeta K. Swamy, MD and Laura E. Riley, MD.

Assessment and Treatment of Pregnant Women With Suspected or Confirmed Influenza

ABSTRACT: Pregnant and postpartum women are at high risk of serious complications of seasonal and pandemic influenza infection. Pregnancy itself is a high-risk condition, making the potential adverse effects of influenza particularly serious in pregnant women. If a pregnant woman has other underlying health conditions, the risk of adverse effects from influenza is even greater. Antiviral treatment is necessary for all pregnant women with suspected or confirmed influenza, regardless of vaccination status. Obstetrician-gynecologists and other obstetric care providers should promptly recognize the symptoms of influenza, adequately assess severity, and readily prescribe safe and effective antiviral therapy for pregnant women with suspected or confirmed influenza. Over-the-phone treatment for low-risk patients is preferred to help reduce the spread of disease among other pregnant patients in the office. Obstetrician-gynecologists and other obstetric care providers should treat pregnant women with suspected or confirmed influenza with antiviral medications presumptively based on clinical evaluation, regardless of vaccination status or laboratory test results. Pregnant women with suspected or confirmed influenza infection should receive antiviral treatment with oseltamivir or zanamivir based on the current resistance patterns. Treatment within 48 hours of the onset of symptoms is ideal but treatment should not be withheld if the ideal window is missed. Because of the high potential for morbidity and mortality for pregnant and postpartum patients, the Centers for Disease Control and Prevention advises that postexposure antiviral chemoprophylaxis can be considered for pregnant women and women who are up to 2 weeks postpartum (including after pregnancy loss) who have had close contact with infectious individuals.

Recommendations

- Obstetrician-gynecologists and other obstetric care providers should promptly recognize the symptoms of influenza, adequately assess severity, and readily prescribe safe and effective antiviral therapy for pregnant women with suspected or confirmed influenza.
- Obstetrician-gynecologists and other obstetric care providers should treat pregnant women with suspected or confirmed influenza with antiviral medications presumptively based on clinical evaluation, regardless of vaccination status or laboratory test results.
- Pregnant women with suspected or confirmed influenza infection should receive antiviral treatment with oseltamivir or zanamivir based on the current resistance patterns.
- Based on previous influenza seasons, oseltamivir is the preferred treatment for pregnant women (75 mg orally twice daily for 5 days) assuming there is sufficient supply and the prevalence of resistant circulating viruses is low. Zanamivir also may be prescribed (two 5-mg inhalations [10 mg total] twice daily for 5 days), or alternatively peramivir may be administered (one 600-mg dose by intravenous infusion for 15–30 minutes).
- Pregnant women who are not identified as high or moderate risk of complications but have symptoms suggestive of influenza infection can be prescribed

antiviral treatment over the phone or in person in accordance with Centers for Disease Control and Prevention (CDC) guidelines.

- Pregnant women without high-risk symptoms but with comorbidities (eg, asthma), obstetric issues (eg, preterm labor), or who are unable to care for themselves (eg, obtain prescription medications or unable to tolerate oral intake) should be seen as soon as possible in an ambulatory setting with resources to determine the severity of illness.
- Because of the high potential for morbidity and mortality for pregnant and postpartum patients, the CDC advises that postexposure antiviral chemoprophylaxis can be considered for pregnant women and women who are up to 2 weeks postpartum (including after pregnancy loss) who have had close contact with infectious individuals.

Background

Pregnant and postpartum women are at high risk of serious complications of seasonal and pandemic influenza (flu) infection. Pregnancy itself is a high-risk condition, making the potential adverse effects of influenza particularly serious in pregnant women. If a pregnant woman has other underlying health conditions, the risk of adverse effects from influenza is even greater. Complications of flu include preterm delivery, pneumonia, hospital or intensive care unit admission, and maternal and fetal death (1, 2). Influenza vaccination, which is an essential element of prenatal and postpartum care, is the most effective and safe way to prevent influenza infection and reduce the related maternal morbidity and mortality (3–5). Influenza vaccination rates during pregnancy have plateaued, with only approximately 50% of pregnant women receiving influenza vaccine and, to date, efforts to increase rates of vaccination have not been successful (6). Seasonal influenza vaccination effectiveness in pregnant women is similar to its efficacy among the general adult population and varies from season to season, depending on host characteristics (such as age and presence of comorbidities) and how well circulating influenza viruses match the viruses contained in the vaccine (4). Thus, although vaccination is an essential component of influenza prevention and can mitigate the severity of illness, no vaccine is 100% effective. Antiviral treatment is necessary for all pregnant women with suspected or confirmed influenza, regardless of vaccination status. For pregnant women who are already infected, treatment can reduce the severity of the flu. Obstetrician–gynecologists and other obstetric care providers should promptly recognize the symptoms of influenza (particularly once influenza virus circulation has been identified in the community), adequately assess severity, and readily prescribe safe and effective antiviral therapy for pregnant women with suspected or confirmed influenza (2).

Assessment of Pregnant Women With Influenza

Pregnant women with suspected influenza should be assessed based on a variety of symptoms, including but not limited to fever of 100.0°F or higher, cough, fatigue, headache, and body aches. It is important to note that not all people infected with influenza will develop a fever; therefore, the absence of fever should not rule out an influenza diagnosis (see Fig. 1). Initial triage and treatment by telephone is acceptable to help reduce the spread of disease among other pregnant patients in the office.

Following symptom assessment, obstetrician–gynecologists and other obstetric care providers should ask patients questions to help determine the severity of the illness. Pregnant women who cannot maintain oral fluid intake, show signs of dehydration, are experiencing difficulty breathing or pain in the chest, or exhibit any signs of obstetric complications are considered moderate or high risk and should be referred immediately to an emergency department or equivalent setting. Pregnant women who are not identified as high or moderate risk of complications but have symptoms suggestive of influenza infection can be prescribed antiviral treatment over the phone or in person in accordance with CDC guidelines (see Fig. 1). Over-the-phone treatment for low-risk patients is preferred to help reduce the spread of disease among other pregnant patients in the office. Pregnant women without high-risk symptoms but with comorbidities (eg, asthma), obstetric issues (eg, preterm labor), or who are unable to care for themselves (eg, obtain prescription medications or unable to tolerate oral intake) should be seen as soon as possible in an ambulatory setting with resources to determine the severity of illness.

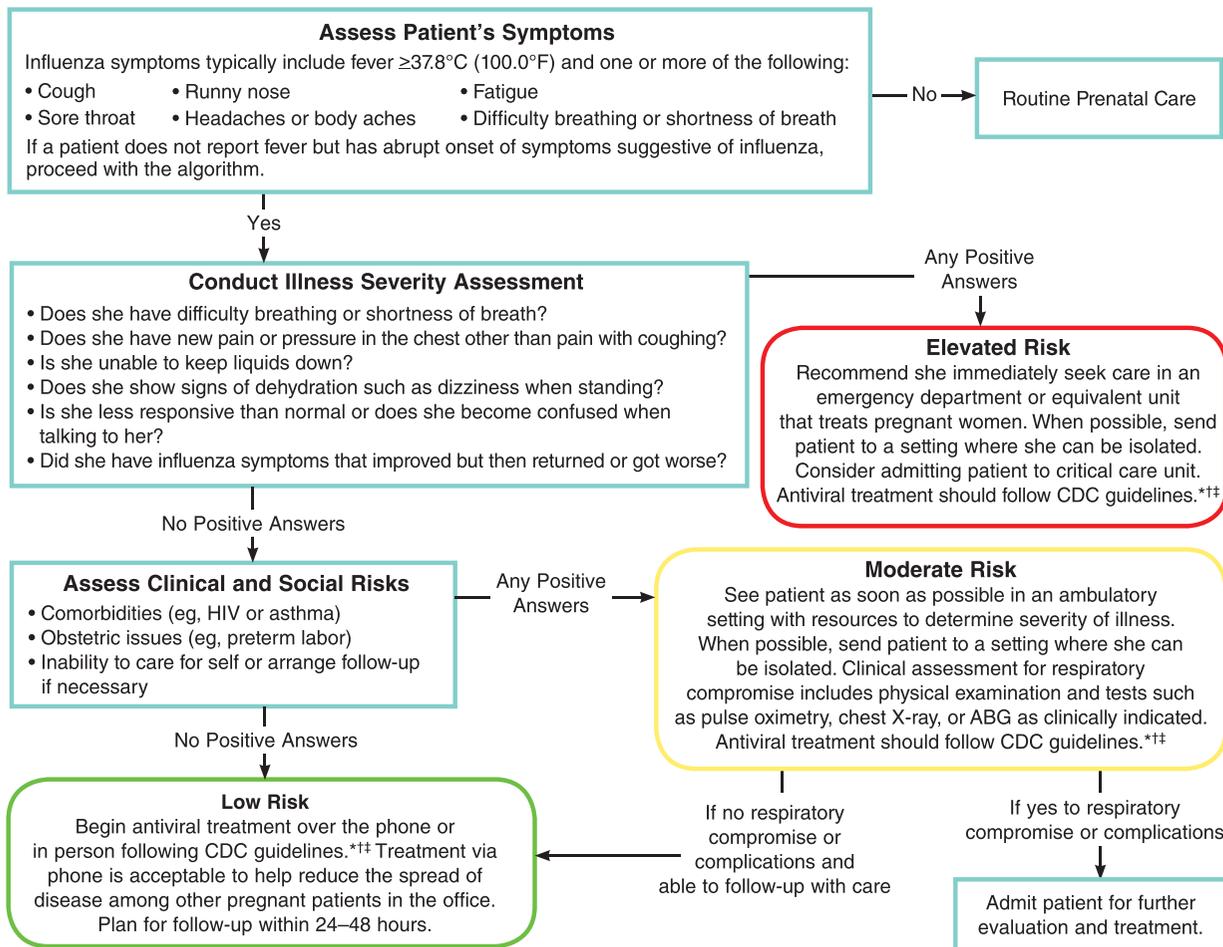
Treatment of Pregnant Women With Influenza

It is important to note that receipt of an annual influenza vaccine does not eliminate the possibility of acquiring influenza infection. Pregnant women with suspected or confirmed influenza infection should receive antiviral treatment with oseltamivir and acetaminophen for treatment of fever. Zanamivir and peramivir are alternative approved influenza antiviral options for treatment. Pregnancy is not a contraindication to these antivirals (7). Based on previous influenza seasons, oseltamivir is the preferred treatment for pregnant women (75 mg orally twice daily for 5 days) assuming there is sufficient supply and the prevalence of resistant circulating viruses is low. Zanamivir also may be prescribed (two 5-mg inhalations [10 mg total] twice daily for 5 days), or alternatively peramivir may be administered (one 600-mg dose by intravenous infusion for 15–30 minutes) (7). Obstetrician–gynecologists and other obstetric care providers should check with their laboratory regarding requirements for testing and turnaround time. However,



Assessment and Treatment for Pregnant Women With Suspected or Confirmed Influenza

Pregnant women are at high risk of serious complications of influenza (flu) infection such as intensive care unit admission, preterm delivery, and maternal death. Patients with suspected or confirmed influenza should be treated with antiviral medications presumptively regardless of vaccination status. Do not rely on test results to initiate treatment; treat presumptively based on clinical evaluation. The following algorithm is designed to aid practitioners in promptly assessing and treating suspected or confirmed influenza in pregnant women, and can be used for telephone triage.



Abbreviations: ABG, arterial blood gases; CDC, Centers for Disease Control and Prevention; HIV, human immunodeficiency virus.

*Oseltamivir (preferred) (75-mg orally twice daily for 5 days) or Zanamivir (two 5-mg inhalations [10 mg total] twice daily for 5 days).

†Check with institution to determine requirements for testing. Do not rely on test results to initiate treatment; treat presumptively based on clinical evaluation.

††Treatment within 48 hours of the onset of symptoms is ideal but treatment should not be withheld if the ideal window is missed.

Because of the high potential for morbidity and mortality for pregnant and postpartum patients, the CDC advises that [postexposure antiviral chemoprophylaxis](#) can be considered for pregnant women and women who are up to 2 weeks postpartum (including after pregnancy loss) who have had close contact with infectious individuals. The chemoprophylaxis recommendation is oseltamivir 75 mg once daily for 7–10 days.

Seasonal influenza vaccination will help reduce incidence of influenza. Check ACOG's Immunization for Women website at www.immunizationforwomen.org for any future updates on this information.

Figure 1. This algorithm walks through the steps that obstetrician–gynecologists and other obstetric care providers should take in assessing and determining appropriate treatment for pregnant women presenting with suspected or confirmed influenza.

obstetrician–gynecologists and other obstetric care providers should not rely on test results to initiate treatment. Obstetrician–gynecologists and other obstetric care providers should treat pregnant women with suspected or confirmed influenza with antiviral medications presumptively based on clinical evaluation, regardless of vaccination status or laboratory test results. Treatment within 48 hours of the onset of symptoms is ideal but treatment should not be withheld if the ideal window is missed (2, 8). Recommendations for treatment with antivirals are based on information from previous influenza seasons. Obstetrician–gynecologists and other obstetric care providers should refer to CDC recommendations for treatment updates (9).

Postexposure Chemoprophylaxis

Because of the high potential for morbidity and mortality for pregnant and postpartum patients, the CDC advises that postexposure antiviral chemoprophylaxis can be considered for pregnant women and women who are up to 2 weeks postpartum (including after pregnancy loss) who have had close contact with infectious individuals. The chemoprophylaxis recommendation is oseltamivir 75 mg once daily for 7–10 days depending on the source of exposure (9). Once signs or symptoms of influenza are present, early treatment is an alternative to prophylaxis. In addition, in women with frequent exposures, early treatment as opposed to prophylaxis may be considered (9). Finally, at-risk family members of patients with an influenza diagnosis should be referred to their health care providers for consideration of antiviral chemoprophylaxis.

Conclusion

Pregnant women are disproportionately affected by influenza compared with the general population. It is critical for obstetrician–gynecologists and other obstetric care providers to be able to identify influenza in pregnant women and to understand the treatment protocol. Following this guidance can reduce morbidity and mortality related to influenza in pregnant women.

For More Information

The American College of Obstetricians and Gynecologists has identified additional resources on topics related to this document that may be helpful for obstetrician–gynecologists, other health care providers, and patients. You may view these resources at: www.acog.org/More-Info/Influenza-Assessment-and-Treatment.

These resources are for information only and are not meant to be comprehensive. Referral to these resources does not imply the American College of Obstetricians and Gynecologists' endorsement of the organization, the organization's website, or the content of the resource. The resources may change without notice.

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Published online on September 24, 2018.

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Assessment and treatment of pregnant women with suspected or confirmed influenza. ACOG Committee Opinion No. 753. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2018;132:e169–73.

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