

Influenza Antiviral Resistance and Interim Recommendations for the Use of Influenza Antiviral Medications in the United States

[Announcer] This podcast is presented by the Centers for Disease Control and Prevention. CDC - safer, healthier people.

Welcome to the CDC Seasonal Flu Update. I'm Dr. Tony Fiore from the Influenza Division in CDC's National Center for Immunization and Respiratory Diseases.

On December 19, 2008, CDC issued interim guidance for clinicians on the use of antiviral medications during the 2008-2009 flu season. This guidance was issued in response to new information about resistance to one antiviral drug among one strain of flu virus that is circulating in the United States. CDC wants clinicians and public health officials to be aware of these new antiviral recommendations.

Let me provide some background on this issue. First, there are two main types of influenza viruses that circulate among people each year: influenza A and influenza B. Among influenza A viruses, there are two subtypes: influenza A (H1N1) and influenza A (H3N2). Influenza viruses constantly change as the virus replicates. The ability to constantly change is a hallmark of influenza viruses, which often change from one season to the next or even within the course of one flu season. Certain changes can result in the influenza viruses being resistant to one or more of the antiviral medications that are approved for use against influenza.

Second, there are four different antiviral medications for flu that are approved by FDA for use in the United States: amantadine and rimantadine, also known as the adamantanes, and zanamivir and oseltamivir, also known as the neuraminidase inhibitors. The adamantane drugs are approved for influenza A while the neuraminidase inhibitor drugs, zanamivir and oseltamivir, are approved for influenza A and influenza B.

Since 2006, CDC has recommended the use oseltamivir, trade name Tamiflu, and zanamivir, trade name Relenza, over the other two drugs. This was because of high resistance to amantadine and rimantadine among influenza A (H3N2) viruses circulating in the United States, and because rimantadine and amantadine do not have activity against influenza B viruses.

During the 2007-2008 flu season, CDC saw an increase in the number of influenza A H1N1 viruses resistant to oseltamivir. In the United States, about 11 percent were resistant, but the numbers were higher in Europe and some other countries. All of the oseltamivir resistant viruses were sensitive to zanamivir and nearly all were sensitive to rimantadine and amantadine. As of December 31, 2008, a low level of influenza activity has been reported in the United States. As a result, only 104 viruses from just 18 states have been available for testing. This includes 65 influenza A (H1N1) viruses.

Among 65 influenza A viruses tested by CDC so far in the 2008-2009 flu season, 64 were resistant to oseltamivir. That equals antiviral resistance of approximately 99 percent among

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influenza A (H1N1) viruses tested so far this season. Fortunately, all 65 influenza A (H1N1) viruses were sensitive to zanamivir, rimantadine, and amantadine. There is no evidence that the resistant H1N1 viruses are causing more severe illness than other influenza viruses or that they are transmitted differently. We don't know how common H1N1 viruses will be during the rest of the season, but CDC is monitoring this situation very closely.

CDC will continue to test influenza viruses and update information on our website at www.cdc.gov/flu weekly throughout the influenza season. Meanwhile, CDC has released guidance on different antiviral treatment options in the event that oseltamivir-resistant H1N1 viruses continue to circulate in the community. Because of this situation, deciding which antiviral treatment to use will be more complicated.

Information from local or state virus surveillance data and laboratory testing can help clinicians select appropriate antiviral medications for their patients, but there is no quick test available to tell if a person is infected with an oseltamivir-resistant flu virus, or even whether a person has H1N1 virus infection.

So, when influenza A H1N1 virus infection or exposure is suspected or one can't tell if it's likely to be H1N1, CDC recommends prescribing zanamivir. If your patient can't take zanamivir, or it's not available, CDC recommends using a combination of oseltamivir and rimantadine.

If infection with an H3N2 or B virus is suspected, based on laboratory testing or knowledge of what is circulating in the community, then either zanamivir or oseltamivir can be used, as has been recommended in the past. Either of these two choices should provide effective treatment for the influenza viruses currently circulating.

Antivirals are particularly important to consider for treatment of patients with severe influenza or patients at higher risk for influenza-related complications, such as elderly persons, persons with chronic medical conditions, or persons hospitalized with influenza.

As always, influenza vaccination offers the best protection against influenza infection. The oseltamivir-resistant H1N1 strains are very similar to the strains in the current flu vaccine. The vaccine is effective in preventing infection from both oseltamivir-resistant, as well as oseltamivir-susceptible strains of influenza viruses. Getting vaccinated is the best way to prevent infection with any influenza virus, regardless of whether they are resistant or not. For that reason, vaccination efforts should continue at this time.

Influenza activity in the United States has been low so far, but is increasing. Influenza most often peaks in February, but influenza viruses can continue to circulate into April or May. A flu vaccine now can still offer protection against influenza this season.

For more information about antiviral resistance and influenza activity during the 2008-2009 flu season, please visit CDC's website at www.cdc.gov/flu.

[Announcer] For the most accurate health information, visit www.cdc.gov or call 1-800-CDC-INFO, 24/7.