Take 3 – Practical Practice Pointers© December 2, 2019 Edition

Influenza Season Edition: Surveillance, Treatment, and Prophylaxis

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From the CDC – Flu Season Has Begun

1) Influenza Surveillance 2019 – FluView

"Flu Season" is upon us, and the CDC's Influenza Division releases a weekly update of influenza activity across the US. According to the November 16th FluView report, seasonal influenza activity in the US continues to increase but the amount of activity and the predominant influenza virus varies by region. Each state health department also releases a weekly surveillance report that is linked to the CDC site.

There is significant cocirculation of influenza A(H3N2), A(H1N1)pdm09 and B/Victoria viruses with the predominant virus varying by region and age group. While acknowledging that antigenic drift can occur, the present A(H1N1) and B strains are antigenically similar to the components in the 2019-20 vaccination, while the A(H3N2) strain is still undergoing antigenic characterization. There has been no resistance detected thus far to antiviral medications.

My Comment:
The CDC website is quite informative at the link below and their message is a simple one: The flu season is just getting started. Flu vaccination is always the best way to prevent flu and its potentially serious complications. It's not too late to get vaccinated. I still remember getting the flu as a boy because of how awful it was. You can bet I got my vaccination this year (okay, in full disclosure, it was also required), and I encourage you and your patients (and loved ones) to do the same.

References:

- CDC FluView: Weekly U.S. Influenza Surveillance Report: Link
- Virginia Department of Health Influenza Surveillance: Link

From the CDC

2) Treatment of Influenza

Clinical trials and observational data show that early antiviral treatment can shorten the duration of fever and illness symptoms of acute influenza infection by approximately 1 day, may reduce the risk of some complications (e.g., otitis media in young children, pneumonia, and respiratory failure) and may shorten the duration of hospitalization in hospitalized patients. Antiviral treatment is recommended as early as possible (preferably within 48 hours of symptoms) for any patient with confirmed or suspected influenza who: is hospitalized; has severe, complicated, or progressive illness; or is at higher risk for influenza complications. Some groups at higher risk include:

- children < 2 and adults ≥ 65;

- people with chronic pulmonary (including asthma), cardiovascular (except HTN alone), renal, hepatic, hematological (including sickle cell disease), and metabolic disorders (including diabetes mellitus), or neurologic and neurodevelopment conditions (including cerebral palsy, seizure disorders, stroke, intellectual disability, moderate to severe developmental delay);
- people with immunosuppression;
- women who are pregnant or postpartum (within 2 weeks after delivery);
- **people who are extremely obese (i.e., BMI ≥ 40);** and
- residents of nursing homes and other chronic care facilities.

Medications recommended for outpatients with acute uncomplicated influenza to be used with 48 hours of symptom onset include oral oseltamivir (Tamiflu), inhaled zanamivir (Relenza), or oral baloxavir (Xofluza).

- Oseltamivir is the preferred treatment for severe, complicated, or progressive illness in ambulatory patients and for hospitalized influenza patients.
- The recommended treatment course for uncomplicated influenza is two doses per day of oral oseltamivir or inhaled zanamivir for 5 days, or a single dose of oral baloxavir.
- Oseltamivir can be given to all ages at a dose of 75 mg bid for adults, and weight-based for children. Common side-effects include nausea, vomiting and headache.
- Zanamivir can be given to those ≥ 7 for treatment, at a dose of 10 mg (two 5-mg inhalations) twice daily. There is a risk of bronchospasm, particularly in susceptible patients.
- Baloxavir can be given to those ≥ 12 at a one-time dose of 40 mg for those b/w 40-80 kg and 80 mg for those ≥ 80 kg. It is typically well-tolerated.
- Baloxavir is not recommended for monotherapy in severely immunosuppression.
- Oseltamivir is preferred for treatment of pregnant women

My Comment:
There is legitimate debate as to whether treatment of uncomplicated influenza with antiviral medication is worthwhile given limited benefits (reduction of symptoms on average from 3.3 to 2.2 days), side-effects (Tamiflu) and cost. A course of treatment with Tamiflu or Xofluza is $150. There is a generic version of oseltamivir costing approximately $50 with a GoodRx coupon. Given our culture's "bias for treatment," I'll leave that up to you to determine on an individual basis. Of note, in the one trial directly comparing medications, patients who started baloxavir within 24 hours of symptom onset had a greater benefit from the drug compared to those who started later. Baloxavir also more rapidly reduced the concentration of influenza virus in respiratory secretions than oseltamivir (one day versus three days, respectively)

References:

- CDC Influenza Antiviral Medications: Summary for Clinicians 2019: Link
- Hayden F, et al. Baloxavir Marboxil for Uncomplicated Influenza in Adults and Adolescents. N Engl J Med 6 September 2018; 379:913-923. Article

A Question From a Colleague

3) Influenza Chemoprophylaxis

Question:
"Should I give medication to someone exposed to the flu who got the flu shot?"

Answer:
The CDC provides very specific guidance regarding this.

Chemoprophylaxis

- **CDC does not recommend widespread or routine use of antiviral medications for post-exposure chemoprophylaxis** except as one of multiple interventions to control institutional influenza outbreaks. One reason for this is to avoid sub-therapeutic treatment dosing if infection is already established (dosing is once daily).
- Neuraminidase inhibitors are 70-90% effective in preventing influenza against susceptible virus strains.
- **Antiviral medications can be considered for chemoprophylaxis to prevent influenza in certain situations, such as the following examples:**
    - Prevention of influenza in people at high risk of influenza complications during the first two weeks following vaccination after exposure to influenza.
    - Prevention for people at high risk for complications who cannot receive the vaccine due to a contraindication after exposure to influenza.
    - Prevention for people with severe immune deficiencies or others who might not respond to influenza vaccination, such as people receiving immunosuppressive medications, after exposure to a person with influenza.
- To be effective as prophylaxis, an antiviral medication must be taken each day for the duration of potential exposure to a person with influenza and continued for 7 days after the last known exposure.
- For people taking antiviral prophylaxis after inactivated influenza vaccination, the recommended duration is two weeks in adults.
- Prophylaxis is generally is not recommended if more than 48 hours have elapsed since the first exposure to a person with influenza.
- Those receiving prophylaxis should seek medical evaluation as soon as possible should they develop a febrile respiratory illness that might indicate influenza.

Special Considerations for Institutional Settings
Use of antiviral chemoprophylaxis to control outbreaks **among high risk people in institutional settings**, such as long-term care facilities, **is recommended.**

- An influenza outbreak is likely when at least two residents are ill within 72 hours, and at least one has laboratory confirmed influenza.
- When influenza is identified as a cause of a respiratory disease outbreak among nursing home residents, use of antiviral medications for chemoprophylaxis is recommended for all non-ill residents (regardless of whether they have received influenza vaccination).
- For unvaccinated health care personnel, antiviral chemoprophylaxis can be offered.
- For newly-vaccinated staff, antiviral chemoprophylaxis can be offered for up to two weeks (the time needed for antibody development) following influenza vaccination.

- **Chemoprophylaxis can also be offered for all health care personnel regardless of their influenza vaccination status,** if the outbreak is caused by a strain of influenza virus that is not well-matched by the vaccine.
- For institutional outbreak management, antiviral chemoprophylaxis should be administered for a minimum of two weeks and continue for at least seven days after the last known case was identified.

My Comment:
The follow-up question from this colleague was, "What if they are demanding it – what could it hurt?"

This question seems a variation on the conversation regarding the prescribing of antibiotics for likely viral infections "on the chance that it's bacterial or has become a "bacterial superinfection" and gets into the realm of probability and risk/benefit, including the risk of medication side-effects or an allergic reaction. Under such circumstances, you'll have to decide what the "right thing to do" is.

Unfortunately, the data suggest that the later in the day/shift you are, the greater likelihood will be that the prescription will be given. And from a "4th Aim" perspective, this is understandable. My encouragement is to at least pause, acknowledge the recommendations, and consciously make your clinical decision (rather than from a place of resignation). Both you and your patients deserve this.

Reference:
CDC Influenza Antiviral Medications: Summary for Clinicians 2019: Link

Feel free to forward Take 3 to your colleagues. Glad to add them to the distribution list.

Mark

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