calgary health region

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What is the current role for neuraminidase inhibitors (NIs) in the management of influenza?

Manuel Mah, MD, MPH, FRCPC, FACP, infectious diseases specialist, replies.

NIs (zanamivir and oseltamivir) are new antiviral agents (Table 1). For optimal efficacy, they should be initiated within 48 hours of symptom onset; some experts extend to 96 hours in people at high risk of complications. Some patients with severe influenza treated solely with antiviral agents have died of bacterial superinfections. Thus, severe cases of influenza should receive antibacterial therapy, plus antiviral therapy.

What about length of treatment?

Therapy should not exceed 5 days in patients with intact immunity, and should not exceed 10-14 days in immunocompromised patients.

Do NIs prevent influenza?

Influenza vaccination is the mainstay of prevention, yet NIs have an important role because (Tables 2 & 3):

1. People are not vaccinated.
2. Some people do not mount an adequate immune response to the vaccine.
3. There is a possible poor antigenic match between the vaccine viral strain and the epidemic viral strain.

Amantadine, the only antiviral drug in Canada to prevent influenza, is also preferred for influenza A because drug-resistance is unlikely for this indication, its efficacy is similar to that of NIs, and it is less costly than the newer antivirals. NIs are effective alternatives for prophylaxis during influenza B outbreaks, influenza A outbreaks due to an amantadine-resistant strain, and influenza A outbreaks in the setting of poor antigenic match between vaccine and epidemic strains. CME

Suggested Readings

1. Wenzel RP: Expanding the treatment options for influenza. JAMA 2000; 283(8):1057-9.
2. Couch RB: Prevention and treatment of influenza. N Engl J Med 2000; 343(24):1778-87.
3. NACI: Statement on influenza vaccination for the 2003-2004 season. CCDR 2003; 29: ACS-4 (15 August 2003).

Table 1

The neuraminidase inhibitors

Zanamivir

- It is a topical powder administered by inhaler with minimal systemic absorption.
- It should be avoided in patients with chronic respiratory disease or asthma because of potential bronchospasm.

Oseltamivir

- It is an oral systemic agent that causes nausea and vomiting in 10% of users.
- Taken with food, it will reduce gastrointestinal side-effects without affecting absorption.

Table 2

Advantages of neuraminidase inhibitors

- Effective against influenza A and B.
- Not associated with central nervous system side-effects.
- Less like to induce the emergence of drug resistance.
- Reduces the duration of illness by 1 to 1.5 days, as compared with placebo.
- Reduces frequency of sinusitis, acute bronchitis, and otitis media. It is unclear whether NIs can reduce the occurrence of pneumonia.

Table 3

Recommendations for neuraminidase inhibitors

- Patients with severe influenza, or at high risk of complications.
- Patients at low risk of complications who want to shorten the duration of their illness, and who are willing to absorb the financial cost.
- Patients who are intolerant of amantadine's adverse effects.