

## Use of Oseltamivir for the Treatment of Influenza

**BOTTOM LINE:** Neuraminidase inhibitors should be used promptly in acutely ill hospitalized patients and in high risk outpatients when clinical signs and symptoms are suggestive of influenza.

### Indications for treatment with oseltamivir:

- Treatment of acute, uncomplicated influenza in individuals one year of age and older who have been symptomatic for no more than 2 days
- Antiviral treatment is recommended **as early as possible** for any patient with confirmed or suspected influenza who:
  - is hospitalized; or
  - has severe, complicated, or progressive illness; or
  - is at higher risk for influenza complications (e.g. asthma, COPD, pregnancy, malignancy, cardiovascular disease, diabetes, immunosuppression, obesity, age>65 years, residents of chronic care facilities, hemoglobinopathies, renal insufficiency).<sup>1,2,4,6,12</sup>

### Oseltamivir dosage and duration of therapy for treatment of influenza:

Influenza Treatment	Recommended Dose*	Recommended Duration***
Adults and children 13 years and older	75mg po BID**	5 days
Children 1-12 years old	≤15kg: 30mg PO bid >15-23kg: 45mg PO bid >23-40kg: 60mg PO bid >40kg: 75mg PO bid	5 days

\*Dose adjustment required in chronic renal failure, consult Bugs & Drugs, or pharmacy<sup>1,2</sup>

\*\*A higher dose of oseltamivir has been recommended in the past for treatment of influenza in immunocompromised patients and in severely ill hospitalized patients. However, standard doses of oral or enteral oseltamivir are adequately absorbed and therapeutic blood levels are achieved in critically ill adults.<sup>13</sup> In addition, studies indicate that higher doses are not necessary in obese patients.<sup>13,18-20</sup>

\*\*\*A longer duration of therapy may be indicated in immunocompromised patients and patients with severe or complicated influenza who remain severely ill after 5 days of therapy.<sup>1,4,21</sup>

### Other Considerations:

- All 2015-16 influenza isolates tested to date (n=222) in Canada are sensitive to neuraminidase inhibitors (NIs) (oseltamivir, zanamivir).<sup>3</sup> Ninety-nine percent of influenza A viruses (n=161) are resistant to amantadine. Influenza A (H1N1) is the most common influenza subtype circulating in Canada this influenza season (2015-16).
- NIs are not indicated for the treatment of other respiratory illnesses, e.g. common cold, RSV.<sup>4,5</sup>
- Treatment benefits may be greater in more virulent or novel strains of influenza, since complications with these strains may be more severe and associated with poorer patient outcomes.<sup>1,4,6</sup>

### Limitations of Current Evidence:

- A recent Cochrane Review of 46 randomized clinical trials (RCTs), largely in healthy outpatients with mild illness, concluded that early oseltamivir treatment of uncomplicated influenza-like illness decreased the duration of influenza symptoms by 17 hours in adults and 29 hours in children.<sup>7</sup>
- No RCTs are available for NI treatment of hospitalized influenza patients. However, evidence from observational studies of hospitalized seasonal and pandemic 2009 H1N1 influenza patients have consistently reported that NI treatment of influenza in hospitalized patients reduces severe outcomes, including ICU admission and death, especially when treatment is started within two days of illness onset. These studies have also shown that later initiation of NI treatment may still provide some clinical benefit.<sup>1,4,6-11</sup>
- It is unlikely that any RCTs will be performed in high risk groups due to ethical concerns, since observational data suggest a benefit when NI treatment is used in patients in an acute care setting and this benefit can be extrapolated to other high risk groups.<sup>6,11</sup>

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## Useful Online Resources:

**Canadian Flu Watch** <http://healthycanadians.gc.ca/publications/diseases-conditions-maladies-affections/fluwatch-2015-2016-49-surveillance-influenza/index-eng.php/>

**AHS Respiratory Virus Surveillance Update** <http://www.albertahealthservices.ca/services/Page13524.aspx>

**Bugs & Drugs** <http://bugsanddrugs.albertahealthservices.ca/>

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