

Pharmacy & Therapeutics Update (TMC, FMC, MPH) Drug Information for Health Care Professionals



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2009—Year of the Bug (Flu)

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As of July, 2009, an estimated 5.7 million Americans had been infected with novel H1N1 Influenza. More recent CDC numbers showed 42% of test samples were positive for this virus, putting the infection rate above the epidemic threshold. The following is an update on the diagnosis and treatment of influenza as of early November.

All subtyped samples have been Novel H1N1 strain. No seasonal flu strains have been seen as of 10/24/09.

Rapid influenza tests have a low sensitivity for H1N1 (10-70%) and cannot reliably rule out this infection

Treatment:

All hospitalized patients should be treated with a neuraminidase inhibitor (e.g. oseltamivir) as this has been shown to:

- Shorten viral shedding time
- Improve clinical outcomes, including survival

Currently without seasonal strains circulating, rimantadine or amantadine are not necessary for treatment.

With a modest effect on symptoms in mild-moderate influenza, some experts still suggest withholding treatment for low risk patients.

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Formulary Changes—October P&T Decisions

The latest uroselective alpha adrenergic antagonist, **silodosin (Rapaflo)**, was reviewed by the P & T Committee in October. Silodosin is approved for the treatment of the signs and symptoms of benign prostatic hypertrophy, and has an efficacy and safety profile similar to tamsulosin (Flomax). Both of these agents act specifically on alpha receptors in the genitourinary system. Alfuzosin (Uroxatral), while not specific to alpha receptors in the genitourinary system, concentrates in the prostate and is therefore considered functionally uroselective. Tamsulosin has been chosen as Forsyth Medical Center's uroselective alpha adrenergic agent for use in patients with benign prostatic hypertrophy, and therapeutic interchanges have been approved for both alfuzosin (April 2008) and silodosin.

Paliperidone (9-hydroxyrisperidone) is the major active metabolite of risperidone. Paliperidone binds to the central dopamine D₂ receptors and serotonin 5-HT_{2A} receptors. **Paliperidone palmitate (Invega Sustenna)** is indicated for the treatment of acute and chronic schizophrenia in adult patients. Formulary inclusion was denied due to the fact there has been no proven improved efficacy of this agent over available therapies with decreased cost.

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Heparin—Many Changes on the Horizon

On December 15, 2009 many variables associated with heparin utilization at FMC, TMC and MPH will change. First, the concentration of IV heparin that is dispensed from the pharmacy will change from 50 units/ml to 100 units/ml. This change will align the entire Novant system with regards to IV heparin and allow the nursing staff to once again utilize the drug library in the IV pumps. Secondly, the manner in which we monitor heparin therapy will shift to anti-Xa levels (or heparin levels). The Heparin Order Set will be edited to reflect this conversion. The pharmacy will also be calling nurses of patients receiving IV heparin through the end of the year with every new order and dose modification to ensure both the safe and effective use of this dangerous medication.

2009—Year of the Bug (flu) (continued)*Charles Hartis, PharmD**cehartis@novanthealth.org*

Efficacy of Antiviral agents against flu:	n	Reduction in Duration of Symptoms (median)
Healthy adults		
Oseltamivir	1410	0.55 days (p<0.03 vs placebo)
Zanamivir	2701	0.57 days (p<0.03 vs placebo)
High-risk patients		
Oseltamivir	1412	0.74 days (p<0.03 vs placebo)
Zanamivir	1252	0.98 days (p<0.03 vs placebo)

Dosing:	Treatment	Prophylaxis (x 10 days)
Oseltamivir		
Adult (mild-moderate)	75mg PO BID x 5 days	75mg PO Daily
Adult (severe- ICU)	150mg PO/PT BID x 10 days	N/A
Pediatric		
<15 kg	30mg PO BID x 5 days	30mg PO Daily
15-23 kg	45mg PO BID	45mg PO Daily
24-40 kg	60mg PO BID	60mg PO Daily
>40 kg	75mg PO BID	75 mg PO Daily
Zanamivir		
Adult	10mg (2 inhalations) BID x 5 days	10mg (2 inh) Daily
Pediatric	>7 yrs: Adult dose	>5 yrs: Adult dose

Options for Severely Ill Patients:

Critically ill patients and those without enteral access may require alternative options for treatment. If a severely ill patient appears to be failing high-dose (150mg BID) oseltamivir, have no enteral access, or require pressors, they are good candidates for IV therapy as outlined below. The following medications can be obtained on a per-patient basis (see below). To order one of these alternate medications, contact a clinical pharmacist.

Medication/Indication	Dosing/Route	Comments
Peramivir	600mg IV Daily x 5-10 days	Available directly from CDC on a per-patient basis without investigational status Does not require positive flu test.
Zanamivir	600mg IV BID x 5-10 days 25mg via nebulizer QID	Compassionate-use investigational status for both IV and compounded nebulizer products. Require an emergency IND for use Company requires positive flu test (rapid or PCR)