

H1N1 2009 Influenza Virus: Management in an Outpatient Setting



Alice H. M. Wong, MD, MPH, FRCPC

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Since the onset of the first wave of the pandemic (H1N1) 2009 influenza virus, considerable efforts have been made to develop plans for management of patients in an acute care setting. However, the majority of patients will not become ill enough to require hospitalization. Care of an infectious influenza patient in an ambulatory setting presents some unique challenges.

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Clinical presentation

Seasonal influenza generally has a short incubation period of 24 to 48 hours. Recent data suggests that the H1N1 2009 influenza virus may be associated with a longer incubation period of

Mario's case

A 50-year-old man with chronic renal failure and diabetes presents to the clinic with a 2-day history of cough and fever. He was vaccinated a week ago with the H1N1 vaccine.

Should this patient receive an antiviral medication? Should he be hospitalized?

seven days. The period of infectivity may also be longer. Symptoms may include:

- fever,
- headache,
- rhinitis,
- pharyngitis,
- cough,
- mild conjunctivitis,
- arthralgias and myalgias.

Additionally, the patient may present with an exacerbation of their underlying illness such as COPD or asthma. Illness is usually self-limited.

Laboratory diagnosis

As the first cases of pandemic influenza appear it is important to obtain laboratory confirmation. A nasopharyngeal swab should be sent for

Table 1

Aerosol-generating procedures

- Aerosolized or nebulized medication
- Chest physiotherapy
- Tracheostomy care
- Diagnostic sputum induction
- Bronchoscopy procedure
- Non-invasive positive pressure ventilation (Bi-level positive airway pressure, continuous positive airway pressure)
- Endotracheal intubation
- Open respiratory/airway suctioning
- Autopsy of lung tissue

Table 2

Removal of personal protective equipment

1. Gloves
2. Gown
3. Mask (remove via the straps without touching the outside)
4. Goggles
5. Clean hands

Frequently Asked Questions

Does a procedural or surgical mask offer adequate protection?

A recent study showed that for routine care not involving aerosol-generating procedures, there was no difference in influenza acquisition in nurses wearing procedural/surgical masks vs. N95 respirators.

examining room. A separate waiting area for patients with respiratory illnesses is ideal. By alerting patients with posters placed at the entrance of the clinic and providing masks and hand hygiene agents for symptomatic patients, transmission can be prevented.

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a direct fluorescent antibody (DFA), culture and/or polymerase chain reaction (PCR) test. The PCR is the most sensitive test.

Infection prevention and control

Transmission occurs via respiratory droplets and direct or indirect contact. In an office setting, care must be taken to separate patients presenting with cough and fever by at least two metres from other patients. If this is not feasible, the patient should be placed directly into an

Before entering the room, the healthcare worker should clean their hands, don gloves, a procedure mask and eye protection. A gown should be worn if there is a risk of contamination of clothing or skin. An N95 respirator is only recommended if there is risk of aerosol generation or during an aerosol-generating procedure (Table 1). The patient may remove their mask on leaving the clinic. When removing personal protective equipment, the most contaminated article should be removed first (Table 2). Surfaces that the patient has come in contact

Mario's case cont'd

Examination

- Respiratory rate: 20 breaths per minute
- BP: 130/70
- He is breathing comfortably. His chest is clear. His oxygen saturation is 95% on room air
- This patient should receive an antiviral as he has multiple comorbidities and he presents within 48 hours of onset of symptoms
- He is not hypoxemic and has no signs of pneumonia which would both be indications for admission
- He should be treated for 5 days with oseltamivir or zanamivir
- There is a need to adjust the dose when the creatinine clearance is < 30 ml/min

with and any examination equipment should be wiped down once the patient has left the room.

Treatment issues

Healthy individuals presenting with mild disease do not require antiviral therapy. Antivirals should be used if a patient presents within 48 hours and:

- is pregnant,
- has mild disease but complex/unstable comorbidities and
- moderate to severe disease.

Patients with moderate/severe disease or individuals meeting the criteria for severe respiratory

Dr. Wong is an Assistant Professor, Infectious Diseases and Critical Care Medicine, University of Saskatchewan, Saskatoon, Saskatchewan.

Take-home message

- The incubation and infectivity of the H1N1 influenza virus may be longer than seasonal influenza
- Contact and droplet precautions are essential to prevent disease transmission
- Antivirals should be started early in patients with a higher risk of developing severe disease

Frequently Asked Questions

Should my patient be tested for H1N1?

Early on in a pandemic, it is important to confirm the diagnosis; however, once disease is widespread in the community, there is no need for routine testing unless it would influence clinical decision-making.

illness—sudden onset of fever, cough, difficulty breathing, patchy lung infiltrates or acute respiratory distress syndrome (ARDS)—should receive antivirals even if they present > 48 hours after onset of illness.

Patients who initially improve but then return with worsening symptoms must be carefully evaluated for the development of secondary complications such as pneumonia or ARDS.



Resources

1. Public Health Agency of Canada. Guidance for Ambulatory Care of Influenza-Like Illness in the Context of H1N1 Influenza Virus. <http://www.phac-aspc.gc.ca/alert-alerite/h1n1/guidance-orientation-amb-07-16-eng.php>. Accessed: January 7, 2010.
2. Loeb M, Dafoe N, Mahony J, et al: Surgical Mask vs N95 Respirator For Preventing Influenza Among Health Care Workers: A Randomized Trial. *JAMA* 2009; 302(17):1865-71.
3. Kumar A, Zarychanski R, Pinto R, et al: Critically Ill Patients With 2009 Influenza A(H1N1) Infection in Canada. *JAMA* 2009; 302(17):1872-9.