Influenza

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Influenza is caused by infection with influenza A and B viruses. Each year, new variants result from antigen shift. Influenza A changes more often and more quickly than influenza B.

The virus is spread by droplet; it can survive for 48 hours outside the body. The incubation period is 1 to 4 days (average 2 days). People are most infectious from 1 day before to 5 days after symptom onset. The attack rates are higher in institutions.

- Twenty percent of the population is exposed to influenza annually, but only 10% get ill.
- The incidence of influenza is highest in the winter.
- The virus is spread by coughing and sneezing.
- Serious illness can occur in very young children, people older than 65 years of age, and people with pre-existing heart or lung diseases.

Clinical course and diagnosis

There is no diagnostic test to validate influenza. In order to diagnose influenza, FPs rely on clinical judgement.

- Influenza diagnosis is clinical (eg, headache, fever, malaise, myalgia, cough, sore throat, and runny nose).
- Most useful symptoms are sudden onset, fever at onset, headache at onset, and cough (positive predictive value = 75%).
- Polymerase chain reaction tests provide results within 30 minutes (85% to 95% sensitive).
- Acute illness lasts for about 3 days, but cough and malaise can persist for weeks.

Treatment

There is no role for antibiotics in the treatment of influenza. Amantadine and rimantadine (M2 blockers) inhibit influenza A. Neurologic and gastrointestinal side effects occur; however, they are usually mild and cease when the drug is stopped.

Zanamivir and oseltamivir (neuraminidase inhibitors) inhibit both influenza A and B. Nasal zanamivir can cause bronchospasm; it has been superseded by oral oseltamivir. Nausea and vomiting have been reported in about 10% of patients taking oseltamivir. Administered within 2 days of illness onset, these drugs reduce the duration of uncomplicated influenza by about 1 day, and the patient is less infectious.

- Amantadine and rimantadine are effective against influenza A virus. They can cause transient neurologic (number needed to harm [NNH] = 45) and gastrointestinal (NNH = 27) side effects.
- Zanamivir and oseltamivir work against both influenza A and B. They can cause bronchospasm (NNH = 13) and intestinal upset (NNH = 10).
- Drugs must be started within 1 to 2 days of the onset of illness.
- They reduce illness duration by 1 day and time off work by half a day.
- They have a modest preventive effect on serious complications.

Prevention

Vaccination is the main mode of influenza prevention. Its effectiveness depends on the amount of viral antigenic shift that has occurred since the last influenza season, the recipient's age, and the recipient's immunocompetence. The optimal time for vaccination is during October and November, but vaccination can continue for as long as the vaccine is available.

People older than 65 years of age and individuals of any age who have medical conditions that put them at risk of the complications of influenza are the primary targets. Although the vaccine's effectiveness is lower (30% to 60%) in older and sicker people, it is still worthwhile, as it reduces hospitalization, pneumonia, and mortality during an influenza epidemic (number needed to treat = 2). Vaccination is one of the most effective interventions in modern medicine.

The evidence for universal vaccination (as recommended in Ontario) to increase mass immunity is not certain. There is evidence that FPs should be vaccinated so fewer patients will be infected.

The highest rates of infection with influenza occur in very young children; vaccination of healthy children aged 6 to 23 months is encouraged. Some authorities suggest that all children should be vaccinated in order to lower the spread of influenza to the elderly and vulnerable.

The most common side effect of vaccination is soreness at the vaccination site; fever, malaise, and myalgia can occur. Reactions begin 6 to 12 hours after vaccination and can persist for 1 to 2 days.

- Vaccines contain 2 influenza A viruses and 1 influenza B virus.
- Serious side effects are very rare.
- Vaccines are 70% to 90% effective in healthy adults and 30% to 70% effective in older and ill people.
- Vaccination is recommended for people aged 65 years or older; children aged 6 to 23 months; people with chronic cardiac, pulmonary, and metabolic conditions; and health care workers in long-term care institutions.
- Vaccination of healthy adults is not yet recommended.
- Vaccination has been associated with decreases in the following: serious illness, hospitalization, deaths, visits to doctors, and time off work.
- Vaccination should take place in the late autumn, but high-risk individuals can be vaccinated even after an influenza epidemic has started.

Other preventive measures

Amantadine and rimantadine are 70% to 90% effective in preventing influenza A. Oseltamivir is 75% effective for influenza A and B. To be maximally effective, the drugs must be taken each day for the influenza season. Isolation, the use of masks, and hand washing have been shown to reduce infection rates.

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Competing interests
None declared

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