

Spotlight on Health

Seasonal Influenza

Seasonal influenza is an acute respiratory infection caused by influenza viruses. In temperate climates, seasonal epidemics occur mainly during the winter (October through March, though can extend into May). In tropical regions, influenza outbreaks occur irregularly throughout the year.¹ Influenza illness can range from mild to severe. Worldwide, annual epidemics result in about 3 to 5 million cases of severe illness and 250,000 to 500,000 deaths each year.¹ Deaths are most common in individuals ≥ 65 years of age, young children, and people with certain health conditions.²

Healthcare providers can take steps to reduce the number of individuals infected during a seasonal epidemic. These steps can also potentially reduce severity in patients with influenza. Tactics include promoting vaccination and identifying influenza infection early. Educating patients on how to avoid contracting influenza, and to recognize an influenza infection is also important.

This newsletter discusses the influenza viruses, diagnosis and management, prevention, and laboratory methods for rapid diagnosis.

The Influenza Viruses

Of the 4 types of influenza viruses (A, B, C, and D), types A and B are responsible for human infections during the epidemic season. Influenza A is subtyped according to the hemagglutinin (H) and neuraminidase (N) proteins expressed on the virus surface (hence the nomenclature to describe individual seasonal viruses such as H3N2).³ Influenza B viruses are classified into lineages and strains.³ Antigenic characteristics of the viruses can change from year to year; this is why a strain-adapted vaccination is recommended every year. Experts attempt to predict the viruses for the upcoming season, and vaccines are produced based on those predictions. Even if the predictions are not entirely accurate, the vaccine still offers some protection.^{1,3}

Diagnosis and Management

Some symptoms of influenza are somewhat different than those of the common cold (Sidebar), but in general it can be difficult to tell the difference between them based on symptoms alone. Children, more often than adults, are likely to have nausea, vomiting, and diarrhea. Some influenza virus types and subtypes may cause photophobia and ocular pain.⁴

In healthy individuals influenza is self-limited, treatment is supportive, and no antiviral medications are necessary.³ Severe disease mostly affects individuals more than 65 years old, young children and those with certain comorbidities. In these patient groups, symptoms can progress to shortness of breath, tachycardia and hypotension, and the need for respiratory support within 2 days.⁴ Bacterial coinfection should be considered in cases of suspected or confirmed influenza that present with severe disease, worsen or do not improve, or have acute onset of high fever or respiratory distress after a period of improvement.³



Symptoms Suggestive of Influenza

- A temperature over 102°F
- Cold sweats and shivering
- A cough
- A severe headache
- Muscle aches, especially in the back, arms, and legs
- Loss of appetite
- Extreme fatigue

Antiviral medications are generally reserved for high-risk groups that include, but are not limited to, children younger than 2 years, adults 65 years and older, individuals with chronic diseases or are morbidly obese, and residents of nursing homes and chronic care facilities.⁵ Some antiviral medications are only effective against certain influenza viruses; thus, it is important to know the influenza virus being treated.

Prevention

Unless contraindicated, all persons 6 months of age and older should get vaccinated annually in September, or as soon as the vaccine is available.³ Certain groups, like people with a severe allergy to chicken eggs, should not get the vaccine.³ Common-sense measures can also help prevent spreading the influenza virus; patients should be instructed to avoid contact with people who are sick and have influenza-like symptoms, to wash their hands frequently, and to avoid touching their eyes, nose, and mouth.

How the Laboratory Can Help

Differentiating influenza from the common cold and other infections that cause influenza-like symptoms, such as respiratory syncytial virus (RSV), is important for diagnosis and treatment. Antibiotics are not useful for treating the flu and other viral respiratory infections. This is especially important in light of the Antibiotic Stewardship Initiative, which seeks a 50% reduction in antibiotic use by the year 2020 with the goal of reducing antibiotic resistance.⁶

The Quest Diagnostics Influenza A and B and RSV RNA, Qualitative, Real-Time RT-PCR assay (test code 91989) is performed with a nasopharyngeal swab, and can detect and discriminate between influenza A, B, and RSV.⁷ Distinguishing between influenza viruses and RSV from the common cold is important as they can be associated with much more severe illness, particularly in infants, older adults, and other high-risk groups, and help guide antiviral therapy. Quest Diagnostics also offers additional respiratory virus molecular panels (test codes 95512 and 91233) that can detect other viral pathogens such as adenovirus and human metapneumovirus.

References

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