3.13 Respiratory Syncytial Virus

Case Definition

Confirmed Case

Clinical illness with laboratory confirmation of infection:

- Isolation of RSV from respiratory secretions in cell cultures

OR

- Identification of viral antigen in nasopharyngeal cells by FA, ELISA, or RIA

OR

- Fourfold or greater rise in RSV antibody titre between acute and convalescent sera

Probable Case

Clinical illness in a person who is epidemiologically linked to a confirmed case

Clinical Presentation

RSV infections often begin with upper respiratory tract disease, which progresses to lower respiratory tract disease in some cases. It can cause acute respiratory illness in people of any age. RSV is also the most common cause of bronchiolitis and pneumonia in young children. Other symptoms include coughing, fatigue, fever, headache, and runny nose. Very young infants with RSV may present with few symptoms, including poor appetite, apnea, and irritability.

Diagnosis

Antigen detection tests can be used to diagnose RSV. Cell cultures can **supplement** the diagnosis. Antigen detection tests are 80-90% sensitive, but may only be highly sensitive in detecting RSV in young children. As well, serologic tests are not generally used in diagnosis due to their lack of timeliness. RT-PCRs are now commercially available for diagnosis. RT-PCRs' sensitivity is greater than that of antigen detection tests, and can be used to diagnose RSV in all age groups.

Epidemiology

Occurrence

RSV infects almost all children before the age of three. RSV is seasonal, generally resulting in epidemics throughout winter and spring in Canada, particularly February and March. The appearance of RSV in Newfoundland and Labrador also follows seasonality, with cases appearing every year between January and May. The majority of them appear in March. It is quite common – there are between 90,000 and 100,000 hospitalizations and 4500 deaths per year in the United States due to RSV infections.

Reservoir

Humans are the only source of infection.

Transmission

Droplet and aerosol transmission via direct contact with contaminated secretions of the infected person or by contact with contaminated environmental surfaces.

Incubation Period

2-8 days; 4-6 days is the more common incubation period.

Period of Communicability

The period of viral shedding is usually 3-8 days. Immunosuppressed individuals may be able to spread the virus for three to four weeks after recovery.

Control Measures

Management of Cases

The primary therapy for RSV is supportive and should include hydration and careful assessment of respiratory state. Most previously healthy children do not require hospitalization. Those who require hospitalization are usually discharged in 3.5 days. Infants may need intravenous fluid to ensure hydration, as well as supplemental oxygen to reverse hypoxemia. Antibiotics are not required unless there is a secondary bacterial infection.

Management of Contacts

Spread among households and childcare contacts are common. Caretakers at home as well as in the school and daycare settings need to take precautions to ensure that other children are protected from RSV transmission as much as possible. Preventative measures include attention to hand and environmental hygiene, avoidance of kissing and hugging, and the sharing of utensils.

Management of Outbreaks

An outbreak management team should be established to address infection prevention and control measures.

Education and Preventive Measures

Education is the primary means of preventing acquisition and spread of RSV. Parents need to practice and teach their children hygiene tools, such as proper hand hygiene techniques, the importance of covering the mouth and nose when coughing and/or sneezing, sanitary disposal of mouth and nasal discharges, not sharing items that could contain mouth and/or nose discharge, and avoiding people who may be infected.

Palivizumab, a monoclonal antibody, is used in certain high risk infants to prevent RSV. It is delivered once/month intramuscularly that can reduce the risk of hospitalization among high-risk children by 45% - 55%.

A fact sheet is provided at
http://www.health.gov.nl.ca/health/publichealth/cdc/infectioncontrol/rsv_dec2012.pdf

Reporting Requirements and Procedures

- Physicians and laboratories report diseases in List C weekly to the Regional Medical Officer of Health (RMOH)
- The RMOH office reports to Provincial Public Health through an electronic reporting system
- If an outbreak has been identified an outbreak report is completed and sent to Provincial Public Health
- The RMOH office will notify local health professionals and others within the community who require disease information
- Provincial Disease Control
    - Reports aggregate data to other health regions