Invasive Group A Streptococcus Infection in British Columbia

The purpose of this report is to summarize information on the occurrence of invasive group A streptococcal disease in British Columbia for 2001 and 2002, to-date. The implications of apparent increases in the rate of disease are discussed.

Descriptive Epidemiology Summary for 2001 and 2002 (to 14 January 2002)

- Ninety-seven laboratory-confirmed cases of invasive group A streptococcal (iGAS) infection were reported in British Columbia during 2001.
- This is an 82% increase above the historic average number of reported cases reported since 1998 (the first complete year of routine provincial surveillance of iGAS) and represents a crude incidence rate of 2.5 per 100,000 population per year.
- Almost two thirds of iGAS cases (62 of 96 with age reported) in 2001 occurred in adults 20 to 64 years of age. However, the highest rates of iGAS were reported in seniors 65 years and older (3.5 per 100,000), and preschool children 0-4 years of age (2.8 per 100,000).
- Four further cases of iGAS have been reported in 2002 up to 14 January 2002, and with enhanced surveillance, public health may be notified of previously unreported cases.

- Eighty-one per cent of reported cases for 2001 were from 7 of the 15 health service delivery areas across the province: Vancouver (21 cases); South Fraser and Capital (16 cases each); Simon Fraser (14 cases); Thompson (7 cases); and Northern Interior (6 cases).
- A significant change in geographic distribution of reported cases of iGAS in 2001 compared with the previous 3 years, was the relative decrease in proportion of total cases reported from South Fraser, falling from a historic 32%, to 16%. The highest regional crude incidence rates during 2001 occurred in: Capital and Thompson (each 5.1 per 100,000); Northern Interior (4.5 per 100,000); South Fraser Valley (2.9 per 100,000); Vancouver (2.8 per 100,000) and Simon Fraser (2.7 per 100,000)

- Eight deaths associated with iGAS infection were reported in 2001, resulting in a case fatality rate of 8.2%. Seven of 8 deaths involved males, with an age range of 31 to 90 years old (mean 57 years old). Three of the deaths were associated with necrotizing fasciitis (NF, or flesh-eating disease), 2 with pneumonia, 2 with septicemia and one other.
- The case fatality rate for necrotizing fasciitis (NF) in 2001 was actually lower than in some previous years in BC: 30% in 1998; 15% in 1999; and, 22% in 2000.

- Twenty-one cases of NF were reported in 2001, comprising 22% of all iGAS cases. The proportion of all iGAS represented by NF in 2001 was the same as the historic average proportion since 1998.
- The crude incidence rate for NF in 2001 was 5.4 per million, which is 86% above the average rate of 2.9 per million over the previous 3 years. Since 1998, a trend of increasing incidence rate of reported NF has been observed in BC, rising from a baseline rate of 1.0 per million in 1998. Three deaths associated with NF in 2001 correspond to a case fatality rate for NF of 14%. 

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• The overall increase in provincial incidence of NF is largely attributed to a substantial increase in cases of iGAS from Vancouver Island, particularly during late 2001.

• From September 2001 to 14 January 2002, there have been 20 cases of iGAS reported from Vancouver Island, reflecting a notable temporal clustering of cases from this area.

• From November to present, cases of iGAS reported from Vancouver Island have comprised over half of all cases province-wide during this period. Eight of 21 (38%) of cases of NF in BC during 2001 were reported from Vancouver Island between September to December 2001, representing a rate of NF from Vancouver Island of 11.3 per million over this time, almost 3 times higher than the crude incidence rate for the rest of the province in 2001 (3.9 per million).

• Serotype M1 was the most common serotype of group A streptococcus associated with iGAS in BC during 2001. Where serotype data are available, the M1 serotype was identified in 37% (18 of 49) of iGAS cases and 42% (5 of 12) of NF cases. This is consistent with other jurisdictions where increased incidence of iGAS is reported. Notably, several other serotypes are observed to be in simultaneous circulation.

What Explains the Increase in Cases on Vancouver Island

• While greater diligence in reporting cases may contribute, the most likely explanation is that there is widespread circulation of group A streptococci in the population at this time.

• Group A streptococci are passed from person to person through close contact and respiratory secretions. This bacteria colonizes the throat, nose or skin of most people at one time or another. Over time, increases and decreases in the rate of colonization will occur naturally. Family physicians on Vancouver Island have been commenting on a recent increase in minor group A streptococcal infections (e.g. strep throat), which likely indicates increased circulation of this organism. This also increases the likelihood that a few people may get more severe, invasive group A streptococcal infections.

General Information About Prevention and Control of iGAS Infection

Group A streptococcus (GAS) is often found in the nose and throats of healthy people. It is normally passed from person to person through close personal contact with an infected person, such as through kissing, sharing forks or spoons or cigarettes. Therefore, reducing exposure to other people’s saliva may reduce your risk of GAS infection. Those at highest risk are:

♦ persons living in the same household;
♦ people who share the same sleeping arrangements; or
♦ people who have direct contact with the mouth or nose secretions of the case.

Certain health conditions and behaviours also carry a higher risk of getting the disease. Illicit injection drug use is the most important risk factor. Other risk factors include skin wounds (burn, trauma, surgery), immunosuppression due to disease (e.g. HIV/AIDS), other chronic disease (e.g. chronic heart, lung or liver disease, alcoholism), chicken pox, and recent close contact with a person who had iGAS.
Vaccines are under development that may someday protect people against iGAS infections. At present however, no such vaccine is available. At present, public health contacts close contacts of all cases of NF and other severe forms of iGAS and recommends antibiotics (for example, persons living in the same household).

Since this severe form of streptococcal infection can progress rapidly, the best approach is to seek medical attention soon. Important clues of a more severe streptococcal infection for which a physician should be seen immediately, are:

♦ a skin infection which seems excessively painful, is accompanied by a fever or where the redness appears to be persistently spreading.

It also makes good sense to always take good care of minor cuts, to reduce the chance of infection getting into the tissues under the skin.

Antibiotics are an important part of the treatment for these infections. However, antibiotics on their own are not usually enough for severe group A strep infections. This is because necrotizing fasciitis cuts off the blood supply to body tissue, and the antibiotics must be carried by blood to the infected site in order to work. Surgery, combined with antibiotics is the usual treatment. However, researchers are investigating other methods that can be used to supplement antibiotics and surgery.

If you have questions, please contact your local public health office. Additional general information about iGAS and necrotizing fasciitis is also available at:

http://www.healthservices.gov.bc.ca/hlthfile/hfile60.html
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_g.htm
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_t.htm
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_a.htm

BCCDC contact number for further information is 604-660-6061.
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