Physicians' and Nurse Practitioners' Update

17 January 2024

From the Office of the Chief Medical Health Officer

Increase in invasive group A streptococcal infections in children

Background: BC is experiencing higher levels of invasive group A streptococcal infections (iGAS) caused by *Streptococcus pyogenes*, particularly among children. While much less common than other causes of seasonal illness in children, there have been 60 cases of iGAS reported in 2023 in individuals <20 years of age across the province, three times higher than that in 2022. The proportion with severe disease in <20 years is also higher at 38% compared to 25% overall. Forty-six of these cases were in children <10 years, including 5 deaths. Case notifications have also increased for individuals in their 30s and in those >60 years old. The overall case fatality rate is 7%, with a rate of 11% in those <10 years old and 10% among those >60 years old. These infections tend to be more common in the winter months, in association with viral respiratory infections.

While circulating strains of GAS bacteria vary from year to year, there has also been an increase in emm type 1 (associated with severe disease) from 0.9% of isolates in 2022 to 8% in 2023.

Clinical Presentation: Infection by *S. pyogenes* typically causes mild illness such as tonsillitis, pharyngitis, impetigo, erysipelas, scarlet fever and cellulitis. More severe complications include sepsis, pneumonia, necrotizing fasciitis and Strep Toxic Shock Syndrome. Other complications include acute rheumatic fever and post-streptococcal glomerulonephritis. Risk factors for severe disease include age <5 or >60 years, immune comprising conditions or medications, cancer, heart and lung disease, diabetes, substance use disorder, varicella infection and neurodevelopmental disorders.

Pediatricians at BC Childrens Hospital have advised of an increase in presentations among children who may have seen multiple health care providers. **Though it can be difficult to differentiate between viral illness and early signs of bacterial illness, and some severe cases can progress rapidly, please remain alert for signs of sepsis and possible iGAS infection, when assessing patients with acute respiratory illness or skin and soft tissue infections.** Complications can be reduced by early diagnosis and treatment. Please watch for the following presentations in children:

- A prolonged fever of $\geq$ 5 days in a child of any age, or fever of any duration in a child <3 months
- Fever with diffuse sandpaper rash, or rash that appears like sunburn or strawberry tongue
- Respiratory distress: nasal flaring, shortness of breath
- Very sleepy or having difficulty waking up
- Child becomes very sick, very quickly

Testing via throat swabs for sore throat and non-severe symptoms are not required for all cases presenting to primary care but may be considered where there is diagnostic uncertainty. The Child Health BC Pediatric Sepsis Tools provide advice on recognition and management of pediatric sepsis in the urgent & emergent settings: www.childhealthbc.ca/clinician-resources/pediatric-sepsis-0.

Prevention: There is no vaccine available against group A streptococcus. General measures include handwashing, staying up to date with routine and seasonal immunizations including varicella, influenza and COVID-19. It's not too late for your patients to be immunized with the current influenza or COVID-19 vaccines. Individuals with surface wounds should keep these clean and watch for signs of infection.

Public health investigates all cases of severe iGAS to identify household and other close contacts for whom chemoprophylaxis is recommended. This helps to decrease the risk of secondary cases as well as reduce the risk of GAS transmission to others.

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