監測及流行病學處

衞生防護中心
Centre for Health Protection
保障市民健康
Protecting Hong Kong's health

Surveillance And Epidemiology Branch

本署檔號 Our Ref. : (10) in DH SEB CD/8/50/1

22 June 2011

Dear Doctor,

Update on Scarlet Fever in Hong Kong

Further to our letters sent on 9 June and 13 June 2011, I would like to provide an additional update on scarlet fever (SF) in Hong Kong. The activity of SF currently remains at a high level. This year, up to 21 June, 466 cases have been reported, which exceeded the annual number of cases recorded in the past 10 years. SF incidence was on the rise during the past four weeks, and it is probable that sustained high SF activity will continue throughout the summer. Majority of the cases (92%) were children under 10 years old, with peak incidence occurred in children aged 4 - 7 years.

In order to assist you in understanding the clinical progression of severe SF infections, we provide clinical case summaries of two fatal SF cases/streptococcal toxic shock syndrome (TSS) in the appendix to this letter.

Group A Streptococcus (GAS) can present with a spectrum of clinical illness, including SF. GAS is transmitted mainly through the respiratory route or direct contact with infected respiratory secretions. The incubation period ranges from 1 to 3 days. The most common GAS infection is acute pharyngitis/tonsillitis. It may be complicated with localised extension of infection leading to otitis media, sinusitis, peritonsillar and retropharyngeal abscesses, suppurative cervical adenitis, mastoiditis, etc., usually in patients who are untreated. SF occurs most often in association with pharyngitis and, rarely, with pyoderma or an infected wound. SF classically presents with fever, sore throat, red and swollen tongue (known as strawberry tongue) and erythematous rash characterized by a 'sandpaper' texture. The rash subsides after one week and is followed by skin peeling over palms and soles. GAS also commonly causes skin infections, such as pyoderma or impetigo. Other GAS infections include erysipelas, perianal cellulitis, vaginitis, septicaemia, pneumonia, endocarditis, pericarditis, septic arthritis, necrotizing fasciitis, osteomyelitis, myositis and puerperal sepsis.

Invasive GAS infections can be severe and can be associated with TSS. A focus of local infection may be absent. TSS is caused by toxin-producing GAS strains and typically manifests as an acute illness characterized by fever, generalized rash, shock and signs of multiorgan failure. It is important to note that streptococcal TSS may or may not be accompanied by SF. Serious nonsuppurative complications of GAS infections include acute rheumatic fever and acute glomerulonephritis.

Latest results from laboratory surveillance showed that the most prevalent *emm* type of GAS (gene of M protein) so far in 2011 was *emm* type 12 (about 50%), but no *emm* type was clearly dominant in 2010. Furthermore, according to genetic studies by the University of Hong Kong (HKU) on one GAS isolate, one unique gene fragment was inserted into the genome of the bacterium, which might contribute to increased transmissibility of this strain.

Early use of appropriate antibiotics in patients with GAS infection or SF prevents clinical complications and shortens the period of infectivity to less than 48 hours. According to local surveillance of antibiotic resistance, around 50-60% of GAS isolated in 2011 are **resistant to erythromycin (which also predicts resistance to azithromycin and clarithromycin)** while all GAS isolates are **sensitive to penicillin**. Hence, antibiotics belonging to the macrolide group (e.g., erythromycin) should not be used for treatment of patient presenting with symptoms and signs of GAS infection or SF while penicillin or a first generation cephalosporin should be given as early as possible. Children suspected to have GAS infection should be monitored closely for the development of more serious complications such as SF or TSS.

We would like to seek your assistance in providing the following health advice to your patients:

- Sick people should seek prompt medical consultation and early and appropriate antibiotic treatment is effective against SF;
- Children suffering from fever, sore throat or skin rash should refrain from school and consult a doctor. They should not attend school until they fully recover or as instructed by the doctor;
- Maintain good personal and environmental hygiene;
- Keep hands clean and wash hands properly;
- Wash hands when they are dirtied by respiratory secretions, e.g., after sneezing;
- Cover nose and mouth while sneezing or coughing and dispose of nasal and mouth discharge properly; and

- Keep good ventilation.

Since 21 June 2011, the CHP has provided a daily update on the latest situation of SF on the CHP website (http://res.chp.gov.hk/seb/files/scarlet_fever_daily_update.pdf). SF is a notifiable disease, please report cases to our Central Notification Office (Tel: 2477-2772; Fax: 2477-2770; CENO On-line: http://www.chp.gov.hk/ceno) for prompt epidemiological investigations and control measures.

Yours faithfully,

(Dr. Christine Wong)
for Controller, Centre for Health Protection
Department of Health

Appendix

Fatal case (1)

A 7-year-old girl with good past health presented with fever, sore throat, vomiting and itchy skin rash since 20/5/2011. She was seen by a general practitioner on 22/5/2011 with complaints of runny nose, cough, vomiting and abdominal pain. Positive physical findings include fever of 103F and mildly congested throat. No antibiotics were prescribed. She was seen again on 26/5/2011, when she complained of body ache, cough and runny nose and abdominal pain. Physical findings included fever of 102.7F, red and swollen right eye. The throat congestion had improved. On 27/5/2011, the patient's condition deteriorated and blisters were found on lower limbs. She was referred by her family doctor to Accident and Emergency Department (AED) of Queen Mary Hospital on 27/5/2011 for tachycardia and hypotension. She was admitted to Paediatric ICU for management of shock. She was initially given cefotaxime and vancomycin, with rifampicin and IVIG added after consultation of microbiologist. Her condition further deteriorated and was certified dead on 28/5/2011. Blood culture and culture of lower limb blister fluid were both tested positive for *Streptococcus pyogenes* (Group A) by Queen Mary Hospital. EMM typing of the isolate by the Public Health Laboratory Centre showed Type 12.

Fatal case (2)

A 5-year-old boy with good past health presented with fever since 15/6/2011. He attended a general practitioner on 16/6/2011 with clinical presentations including fever, cough, headache, sputum, sore throat and pustules. No sandpaper rash or strawberry tongue was noted. The clinical diagnosis was chickenpox. Panadol, ponstan, antihistamines and topical antibiotic were prescribed. No oral antibiotics were prescribed. He attended AED of Prince of Wales Hospital on 19/6/2011 for sudden deterioration in condition. He was transferred to PMH PICU for further management on the same day. He was lethargic on admission. Sand-paper like rash was noted on physical examination. The clinical diagnosis was chickenpox complicated by scarlet fever and toxic shock syndrome. Pus swab showed heavy growth of *Streptococcus pyogenes* (Group A). Blood culture revealed *Streptococcus pyogenes* (Group A). He was put on intravenous antibiotics (Cefotaxime, Benzylpenicillin, Clindamycin, Vancomycin and Acyclovir) and inotropic support for septic shock. His condition further deteriorated and was certified death on 21/6/2011.