Update on the situation of chikungunya fever
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First described during an outbreak in Tanzania in 1952, chikungunya fever (CF) is an acute viral disease caused by the chikungunya virus. Chikungunya virus is a mosquito-borne RNA alphavirus that can be transmitted to human by the bites of infected female Aedes mosquitoes. CF is characterised by an abrupt onset of fever frequently accompanied by joint pain, which is often very debilitating and lasts for a few days or up to a few weeks. Other common symptoms include muscle pain, headache, nausea, fatigue and skin rash. Most patients recover fully. In some cases, joint pain may persist for several months or even years.

Global situation
Since its first identification in 1952, CF has been reported in over 60 countries in Africa, the Americas, Asia and Europe (Figure 1). Among these countries, the habitat suitability for the existence and development of Aedes aegypti and/or Aedes albopictus varied. Among these countries considered to be suitable for only Aedes albopictus (a mosquito commonly found in Hong Kong), only France had reported autochthonous transmission of CF. The following section reviews the global situation of CF in the past five years.

In Africa, human infections have been at relatively low levels for a number of years but outbreaks were occasionally reported. In 2015, Senegal reported an active circulation of chikungunya virus in the region of Kédougou, which resulted in ten confirmed CF cases. In 2016, Kenya reported a large outbreak in Mandera East sub-county with more than 1 700 suspected cases. In early 2018, Kenya reported another CF outbreak in Mombasa County which affected 453 cases (including 32 confirmed and 421 suspected cases) as of February 3, 2018. According to the World Health Organization, this was the first time that active circulation of CF was laboratory confirmed in Mombasa County, which is a popular tourist destination.

In the Americas, the first outbreak of CF with local transmission was recorded in December 2013, when France reported two laboratory-confirmed autochthonous cases in the French part of the Caribbean island of St. Martin. Since then, local transmission has been confirmed in over 43 countries and territories in the Americas. The number of confirmed and suspected cases in the Americas in 2017 had decreased by 18.1% and 82.3% respectively when compared to the same period in 2016. In 2017, more than 123 000 confirmed and 61 000 suspected autochthonous transmission cases were reported as of December 22, 2017, with the majority of both the confirmed and suspected cases (98.9% and 81.5% respectively) reported by Brazil.

In Asia, endemic or epidemic CF has been reported in several countries including Cambodia, India, Indonesia, Laos, Malaysia, Maldives, Myanmar, Pakistan, the Philippines, Thailand and Vietnam. In December 2016, Pakistan reported its first CF outbreak which occurred in Karachi city in the Sindh province. Between December 19, 2016 and April 14, 2017, a total of 1 419 suspected CF cases were reported in various districts in Karachi. In addition, the first outbreak in Balochistan province in Pakistan was confirmed in April 2017. As of April 19, 2017, the number of suspected CF cases reported in Balochistan was 1 962.

In Europe, outbreaks of CF have been reported in several continental countries. In France, two outbreaks with locally-acquired infection were reported in 2014 and 2017 respectively, with each outbreak affecting four confirmed cases. In Italy, an outbreak was reported in June 2017. As of September 26, 2017, 183 CF cases had been notified to the Lazio Region of Italy (109 of which were confirmed and 74 were suspected cases) and three confirmed cases had been notified from other areas with a travel history to the affected part of the Lazio Region.
Local situation

In Hong Kong, CF has been listed as a notifiable infectious disease under the Prevention and Control of Disease Ordinance (Cap 599) since March 6, 2009. In the past five years (from 2013 to 2017), the Centre for Health Protection of the Department of Health recorded a total of 17 confirmed sporadic cases, ranging from one to eight cases per year (Figure 2). The cases involved eight males and nine females, with ages ranging from 25 to 77 years (median: 50 years). The majority of the cases presented with fever (100%), joint pain (88.2%) and rash (58.8%). Sixteen cases (94.1%) were diagnosed by detection of chikungunya virus genomic sequences in clinical specimen by polymerase chain reaction and one case (5.9%) was diagnosed by four-fold or greater rise in antibody titres to chikungunya virus antigen in paired serum samples. All cases were imported infections. Among the 17 cases, the patients had travelled to countries and areas affected by CF including India (7), Indonesia (5) and the Philippines (2). The remaining three patients had travelled to multiple countries during the incubation period. No locally acquired cases were recorded.

Prevention

At present, there is no effective vaccine against CF. The best way to prevent CF is to prevent mosquito bites when travelling to endemic areas. Members of the public are advised to wear loose, light-coloured and long-sleeved clothes and long trousers, use insect repellents containing DEET over the exposed parts of the body and clothes, use mosquito screens or nets when the room is not air-conditioned and place mosquito coils or electric mosquito mat/liquid near possible entrance, such as windows, to prevent mosquito bites. For details about the use of insect repellents, please refer to ‘Tips for using insect repellents’ at the following link: http://www.chp.gov.hk/en/view_content/38927.html.

If falling sick upon return from endemic areas, travellers should seek medical advice immediately and inform the doctor of their travel history for prompt medical management, epidemiological investigation and control actions.

Moreover, one of the vectors for CF, *Aedes albopictus*, is present in Hong Kong and could transmit not only CF, but also dengue fever and Zika virus infection. Mosquito prevention and control is important to prevent these mosquito-borne diseases. The public should prevent accumulation of stagnant water, and control vectors and reservoir of the diseases by:

- Changing the water in vases once a week;
- Covering water containers tightly;
- Ensuring air-conditioner drip trays are free of stagnant water;
- Putting all used cans and bottles into covered dustbins; and
- Storing food and dispose of garbage properly.

References

Management of scabies outbreak in institutional settings

Reported by Dr Ambrose WONG, Senior Medical and Health Officer, Field Epidemiology Training Programme, and Ms Chloe POON, Scientific Officer, Respiratory Disease Office, Surveillance and Epidemiology Branch, CHP.

Scabies is a skin infestation caused by a mite called Sarcoptes scabiei, which is a parasite that burrows into, resides and reproduces in human skin. It can affect people of all ages, but people with weakened immunity or the elderly are more likely to have heavy infestation. Scabies can spread rapidly in crowded conditions, hence, outbreaks of scabies have been reported in hospitals, child-care facilities, hostels and elderly homes. Diagnosis of scabies usually is made clinically based upon the appearance and distribution of the rash and the presence of burrows. The diagnosis of scabies could be confirmed by obtaining a skin scraping to examine under a microscope for the presence of mite or mite eggs. Effective treatment for scabies includes topical or oral anti-scabies agents and topical and/or oral drugs to control itchiness.

The Centre for Health Protection (CHP) of the Department of Health encourages institutions to report suspected outbreak of scabies to CHP for investigation and recommendation of appropriate control measures. Upon notification of a suspected scabies outbreak, CHP will carry out investigation which aims to confirm the occurrence of an outbreak, identify the affected and exposed persons, and implement measures for prevention and control.

An outbreak of scabies is defined as two or more cases which are considered to be epidemiologically linked in time and place by CHP.

From January 2017 to February 2018, CHP recorded 58 reports of scabies outbreaks in institutions, affecting a total of 194 persons. The monthly number of reported outbreaks ranged from zero to nine (median: four) (Figure 1). The majority (56, 96.6%) of the outbreaks occurred in residential care homes for the elderly and the remaining two outbreaks occurred in residential care homes for the disabled. Most of the scabies outbreaks (91.4%) were reported by the affected institutions and the remaining were reported by healthcare professionals providing care for the affected persons. Forty outbreaks (69.0%) had laboratory confirmation by microscopy of tissue scraping collected from the affected persons. The number of persons affected in each outbreak ranged from two to 18 with a median of three persons. The male-to-female ratio of the affected persons was 1 to 2. Among the affected persons, 98.5% involved residents while the remaining 1.5% involved staffs working in the institutions.

Upon notification of a suspected outbreak, CHP will collect epidemiological information regarding demographics and clinical history of the affected persons, number of persons exposed including both the staff and residents of the concerned institution and potential risk factors (e.g. sharing of personal items) which may contribute to the outbreak, for formulation of appropriate control and prevention actions.

Staff and residents of the concerned institution should maintain good personal and environmental hygiene including having a bath every day, changing of clean clothes every day, and avoid sharing of clothing and personal items with others. Clothing and bed-linen of the affected person should be washed separately from those of other residents and must be washed in hot water (60°C or above for not less than 10 minutes) to get rid of the mites and their eggs. Non-washable personal items such as shoes should be placed in a plastic bag and seal up for at least 14 days before they can be used and cleaned as usual.

Topical use of 5% permethrin is effective medication to kill the mites. During institutional outbreak, it can be offered to all exposed persons including both staff and residents as preemptive treatment. Clear instructions will be given to the affected institutions on how to apply the medication correctly which include:

❖ After taking a bath, scrub and dry the body thoroughly;
❖ With the help of another person, use latex gloves to thoroughly massage the lotion onto the skin of the whole body down to the soles, then put back the same clothes; and
❖ Leave for eight to 14 hours, take a warm water bath to wash away the medication, then put on clean clothes and change bed linen.

To prevent scabies infestation, members of the public and residents/staff of institutions could adopt the following measures:

❖ Keep good personal hygiene, perform hand hygiene frequently and daily bathing;
❖ Regularly change into clean clothing, towels and bed linen;
❖ Avoid sharing clothing and personal items with others; and
❖ Perform skin inspection for institutionalised residents regularly for early identification of infestation.
A sporadic case of psittacosis
On February 23, 2018, the Centre for Health Protection (CHP) recorded one sporadic case of psittacosis affecting a 68-year-old male with underlying illnesses. He had presented with fever, cough with sputum and shortness of breath since March 3 and was admitted to a public hospital on March 7. The clinical diagnosis was pneumonia. He was treated with antibiotics. He remained stable and was discharged home on March 26. His nasopharyngeal aspirate (NPA) collected on March 7 was tested positive for *Chlamydia psittaci* DNA by PCR. He had no travel history and did not report any contact history of birds or their excreta during the incubation period. His home contacts were asymptomatic.

**Workshop on Application of Molecular Diagnostics on Clinical Microbiology on March 20 and 21, 2018**
A one-and-a-half day "Workshop on Application of Molecular Diagnostics on Clinical Microbiology" was conducted on March 20 and 21, 2018, which consisted of didactic lectures from overseas industry forerunners and local academics as well as round-table discussions on the way forward for Hong Kong. The workshop started with the sharing of novel and emerging technologies in molecular microbiology diagnostic principles and practice. The applications in areas such as point of care testing for HIV and Hepatitis, utilisation of genome sequencing in TB outbreak investigation and future development bioinformatics in the area of geo-positioning to facilitate country-wide or even global disease control were discussed. There were fruitful experiences sharing and exchange by overseas and local experts in particular on the practical utilisation of different methods in genome sequencing and ways to focus on base-pairs of concern in order to reduce the processing time. Audiences were enlightened on the importance of the further developments in the field. All the information has been uploaded onto the HONG KONG Training Portal on Infection Control and Infectious Diseases (http://icidportal.ha.org.hk/sites/en/Lists/Training%20Calendar/DispForm.aspx?ID=130&Source=http%3A%2F%2Ficidportal%2Eorg%2Ehk%2Fsites%2Fore%2FLists%2FTraining%2520Calendar%2Fcalendar%2Easpx%3FCalendarDate%3D10%252F3%252F2018).

**CA-MRSA cases in February 2018**
In February 2018, CHP recorded a total of 101 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 61 males and 40 females with ages ranging from eight months to 81 years (median: 40 years). Among them, there were 69 Chinese, 6 Filipinos, 5 Pakistani, 2 Caucasian, 2 Indonesian, 1 Indian, 1 Japanese, 1 Korean, 1 Malaysian, 1 Sri Lankan and 12 of unknown ethnicity. Ninety-nine cases presented with uncomplicated skin and soft tissue infections while the remaining two cases had severe CA-MRSA infections. The first severe case affected an eight-year-old girl with good past health. She had left ankle sprain in late January and developed pain, swelling and redness over left shin since February 6. She was admitted to a public hospital on February 10. X-ray of her left ankle revealed left ankle fracture. She was treated with antibiotics, incision and drainage of deep abscess, partial ostectomy of left tibia and excisional debridement of necrotic bone tissue. Pus from the deep abscess and necrotic bone tissue of her left leg collected on February 12 and February 14 respectively were both cultured positive for CA-MRSA. Her diagnosis was left tibia osteomyelitis. She remained in a stable condition and was discharged on March 9.

The second severe case affected a ten-year-old boy with good past health. He presented with fever, productive cough and abdominal pain since February 15. He was admitted to a private hospital on February 18 for further management. His chest X-ray taken on the day of admission showed pneumonic changes. His sputum collected on the same day was cultured positive for CA-MRSA. He was diagnosed with CA-MRSA associated pneumonia and was treated with antibiotics. He remained in a stable condition and was discharged on March 2.

Among the 101 cases, three cases involved healthcare workers were recorded, including two nurses and a prosthetist-orthotist working in different hospitals. Investigation did not reveal any cases epidemiologically linked to these three patients. Besides, two household clusters, with each affecting two persons, were identified.

**Scarlet fever update (February 1, 2018 – February 28, 2018)**
Scarlet fever activity in February decreased as compared with that in January. CHP recorded 179 cases of scarlet fever in February as compared with 409 cases in January. The cases recorded in February included 100 males and 79 females aged between 13 months and 53 years (median: six years). Among them, there were two cases requiring admission to intensive care unit. The first case affected a 15-year-old girl with good past health. She presented with fever, productive cough, sore throat, vomiting, diarrhoea and rash on January 22, and was admitted to a public hospital on January 30. She was diagnosed to have scarlet fever and influenza B co-infection. She was complicated with pneumonia and toxic shock syndrome. She was treated with antibiotics and Tamiflu. She recovered and was discharged on February 7. The second case affected an eight-year-old boy with underlying medical disease. He had presented with fever, sore throat, rash over body and painful erythematous swellings over left lower limb since January 23 and was admitted to a public hospital on January 25. He was diagnosed to have left lower limb cellulitis, surgical scarlet fever and septic shock. He was treated with antibiotics and discharged on February 28. No fatal cases were reported in February. There were seven institutional clusters occurring in four kindergartens/child care centres, two primary schools and a special school, affecting a total of 15 children.