

Communicable Diseases

WATCH

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FEATURE IN FOCUS

Update on food poisoning related to wild mushrooms in Hong Kong

Reported by Dr Hyeon LEUNG, Medical and Health Officer, Enteric and Vector-borne Disease Office, Surveillance and Epidemiology Branch, CHP.

Facts on wild mushroom poisoning

Mushroom poisoning is a type of food poisoning that is caused by the consumption of toxin-containing mushrooms. Mushroom toxins are produced naturally by the fungi themselves and can cause poisoning in humans. Most toxin-producing mushrooms cannot be rendered non-toxic by usual food processing methods such as soaking, peeling, cooking or freezing¹⁻³. Wild mushroom poisoning is caused by consumption of wild toxic mushroom species that have been mistaken as edible ones.

The symptoms of mushroom poisoning are usually acute and the clinical presentations depend on the type and amount of toxins consumed¹. The commonest toxins found in wild mushrooms are a group of gastrointestinal toxins causing symptoms including epigastric pain, vomiting and diarrhoea. Another type of mushroom toxin, muscarine, affects the smooth muscles and sweat glands in humans and can cause profuse sweating, increased salivation, tearing, gastrointestinal symptoms and difficulty in breathing². Other mushroom toxins, including psilocybin, may cause illusion and hallucination^{2,4}. Amatoxins are potent toxins produced by mushrooms such as the *Amanita* species. Patients who have consumed amatoxin-containing mushrooms may first develop gastrointestinal symptoms such as abdominal pain, vomiting and diarrhoea, and may then be followed by symptoms of liver damage such as yellow discolouration of the skin, tea-coloured urine, malaise and loss of appetite. Severe cases may result in liver failure and even death².

There is no specific treatment for mushroom poisoning and the mainstay of management is supportive. Patients with liver failure may require liver transplantation.

In Hong Kong, food poisoning is a notifiable disease under the Prevention and Control of Disease Ordinance (Cap 599) and food poisoning cases related to wild mushrooms are recorded from time to time. From 2010 to 2019 (as of May 31, 2019), the Centre for Health Protection (CHP) of the Department of Health recorded a total of 30 food poisoning cases related to wild mushrooms, affecting a total of 46 persons. Each case affected one to three persons (median: one person) (Figure 1). From 2010 to 2018, the annual number of cases ranged from one to five (median: three cases) and the annual number of persons affected ranged from two to seven (median: four persons). Higher numbers of cases were recorded from April to June (Figure 2).

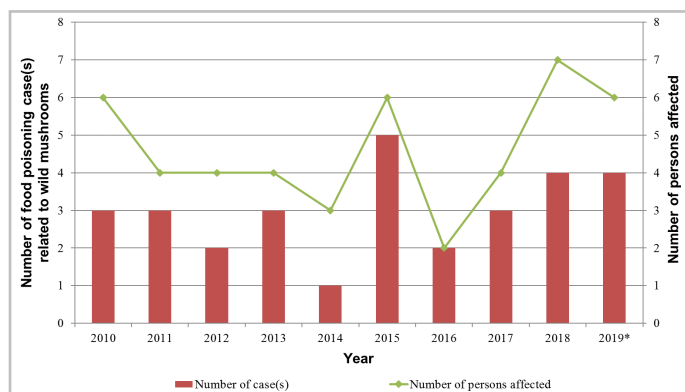


Figure 1 - Annual number of food poisoning cases related to wild mushrooms recorded by CHP and the number of persons affected from 2010 to 2019 (*Provisional figures as of May 31, 2019).

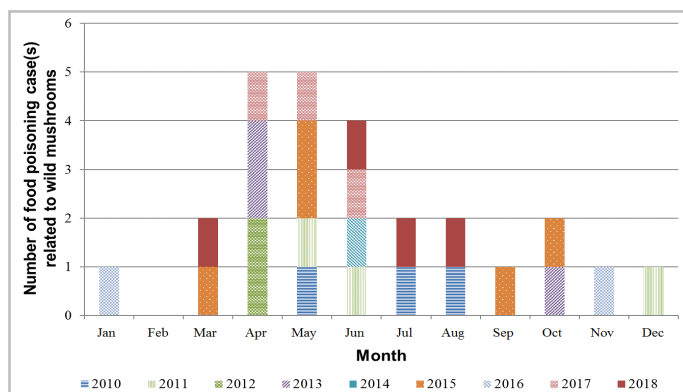


Figure 2 - Cumulative monthly number of food poisoning cases related to wild mushrooms in Hong Kong from 2010 to 2018.

The 46 patients involved 17 (37.0%) males and 29 (63.0%) females, with ages ranging from nine to 86 years (median: 48.5 years). The latency period, i.e. the time from ingestion of the incriminating mushrooms to onset of symptoms, ranged from 0.5 to 19 hours (median: two hours). The commonest presenting symptoms were gastrointestinal symptoms including diarrhoea (40, 87.0%), vomiting (40, 87.0%), abdominal pain (37, 80.4%) and nausea (19, 41.3%). Other manifestations included dizziness (11, 23.9%), deranged liver function or acute liver failure (8, 17.4%), sweating (8, 17.4%), palpitation (6, 13.0%), weakness (6, 13.0%), acute kidney

injury or failure (5, 10.9%), numbness (3, 6.5%), headache (2, 4.3%), hypotension (2, 4.3%), difficulty in urination (2, 4.3%), blurred vision (1, 2.2%), chest discomfort (1, 2.2%), chills and rigors (1, 2.2%), fever (1, 2.2%), increased salivation (1, 2.2%) and muscle cramping (1, 2.2%).

Among the 46 patients, 44 (95.7%) sought medical attention and 29 (63.0%) required hospitalisation. Seven (15.2%) patients required admission to intensive care units and two (4.3%) required liver transplantation. One death affecting a 57-year-old man with underlying illness was recorded in 2018, giving a case fatality rate of 2.2%. The patient consumed wild mushrooms picked from the countryside at Sha Lo Tung in Tai Po and developed epigastric pain, vomiting and diarrhoea about 19 hours later. He was found to have deranged liver function and his urine specimen was tested positive for amatoxins and phallotoxins. He subsequently developed fulminant hepatic failure and died.

Among the 30 cases, the incriminating types of mushrooms or mushroom toxins were identified in 20 (66.7%) either by morphological identification of the mushroom remnants by mycologist or by detection of toxins in food remnants or clinical specimens. The two commonest types of mushrooms identified were *Chlorophyllum molybdites* (8, 40.0%) which contains gastrointestinal toxins, and amatoxin-containing mushrooms (5, 25.0%). The other mushroom species identified (7, 35.0%) contained gastrointestinal toxins, muscarine or both.

The incriminating mushrooms were picked in Hong Kong in the majority of cases (29, 96.7%) while that in the remaining case (3.3%) was picked in Mainland China. Among the 29 local cases, the incriminating mushrooms were most commonly picked from the countryside/hillside (48.3%) and roadside (34.5%), followed by parks (13.8%) and residential areas (6.9%) (Table 1). The geographical distribution of sites of mushroom picking is shown on Figure 3.

The identification of toxic mushrooms requires the expertise of mycologists. There is no reliable method for the general public to distinguish toxic mushrooms from non-toxic ones². In fact, the vast majority (about 90%) of the wild mushrooms in Hong Kong are inedible or poisonous². To prevent wild mushroom poisoning, members of the public should not pick wild mushrooms for consumption in any circumstance. If mushroom poisoning is suspected, patients should seek immediate medical attention and bring along any available remnant for identification.

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Update on Human Metapneumovirus Infection in Hong Kong

Reported by Ms Chloe POON, Scientific Officer, Respiratory Disease Office, Surveillance and Epidemiology Branch, CHP.

This article provides an update on the local situation of Human Metapneumovirus (HMPV) infection recorded by the Centre for Health protection (CHP) of the Department of Health in 2018 and the first five months of 2019.

In 2018, CHP recorded a total of 44 institutional outbreaks related to HMPV, including two outbreaks with both HMPV and other respiratory viruses (parainfluenza virus and rhinovirus/enterovirus respectively) identified. This was higher than the range of six to ten outbreaks recorded per year during 2013-2017 (Figure 1). In 2019 (as of May 31), 25 outbreaks have been recorded so far. One reason for the increase in detection of HMPV outbreaks was due to the enhancement of laboratory testing of respiratory specimens for HMPV by molecular test in the Public Health Laboratory Services Branch (PHLSB) of CHP.

Table 1 - The sites of mushroom picking in food poisoning cases related to wild mushrooms from 2010 to 2019 (as of May 31, 2019) (*One case picked from a park and a residential area).

Sites of mushroom picking	Number of cases (%)
Countryside/hillside	14 (48.3%)
Roadside	10 (34.5%)
Parks	4 (13.8%)*
Residential areas	2 (6.9%)*



Figure 3 - Geographical distribution of the sites of mushroom picking in food poisoning cases related to wild mushrooms from 2010 to 2019 (as of May 31, 2019).

Note: One patient picked the incriminated mushroom from Sheung Shui but was unable to recall the exact location of picking.

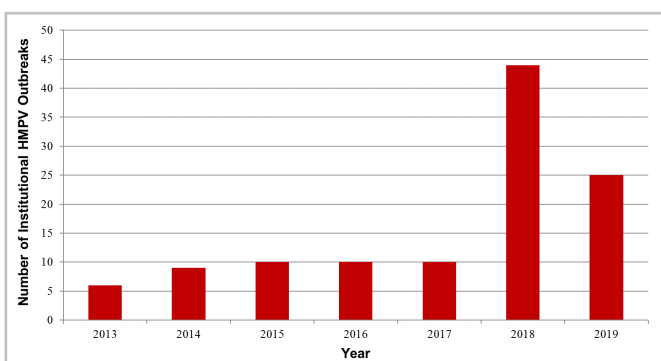


Figure 1 - Annual number of institutional HMPV outbreaks, 2013 to 2019 (as of May 31, 2019).

Of the 69 outbreaks recorded since 2018 (as of May 31, 2019), 40 outbreaks (58.0%) occurred in residential care homes for the elderly, nine (13.0%) in hospitals, nine (13.0%) in residential care homes for the disabled, seven (10.1%) in kindergartens/child care centres and four (5.8%) in other institutions.

The duration of outbreaks, which was defined as the interval between the onset dates of the first and last cases of an outbreak, ranged from one to 39 days (median: 11 days). The number of persons affected in each outbreak ranged from three to 34 (median: eight). The attack rate ranged from 2% to 46% (median: 8%). Ninety percent of the affected persons were residents or students of the institutions, while the remaining 10% involved staff working in the institutions. Among the 615 affected persons, 301 (48.9%) required hospitalisation, 58 (9.5%) developed complications (57 with pneumonia and one with bronchitis) and 12 (2.0%) passed away.

Regarding the seasonality, among the respiratory specimens¹ received by PHLSB in 2018, the weekly percentage positive for HMPV started to increase since March and reached the peak around May to June, and then returned to a low level in September (Figure 2). In 2019, the positive percentage started to increase from a low level since mid-February and reached the peak in April. The laboratory surveillance data largely corresponded with the trend of monthly number of institutional outbreaks caused by HMPV from 2013 to 2018, with more outbreaks occurring between April and May (Figure 3).

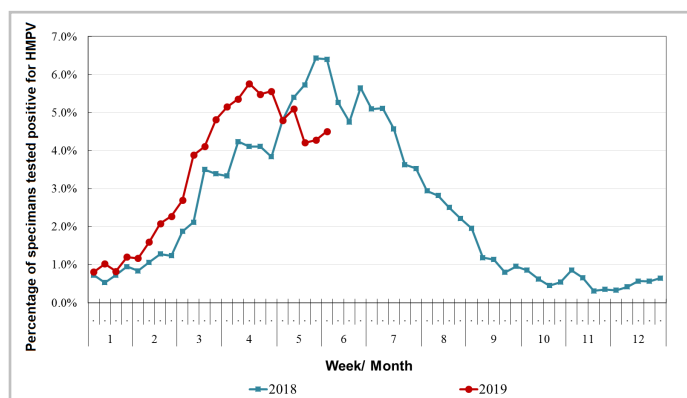


Figure 2 - Weekly percentage of respiratory specimens tested positive for HMPV since 2018 (as of June 1, 2019).

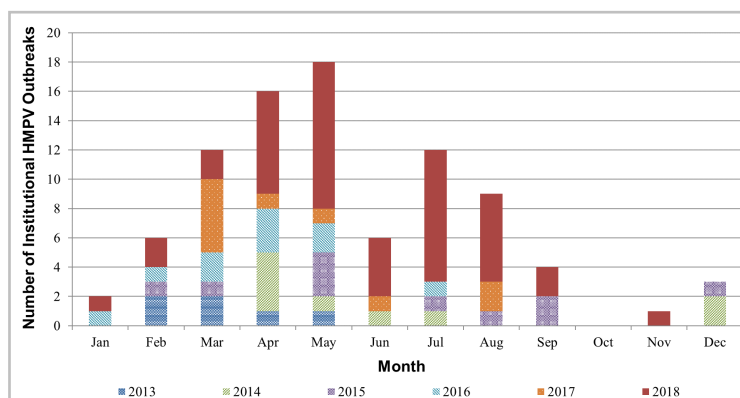


Figure 3 - Monthly number of institutional HMPV outbreaks, 2013 to 2018.

There is no specific treatment for HMPV infection and there is currently no vaccine available. To prevent HMPV infection, members of the public are advised to:

Maintain good personal hygiene

- ◆ Perform hand hygiene frequently, especially before touching the mouth, nose or eyes, after touching public installations such as handrails or door knobs or when hands are contaminated by respiratory secretion after coughing or sneezing. Wash hands with liquid soap and water for at least 20 seconds, then dry with a disposable paper towel or hand dryer. When hands are not visibly soiled, clean them with 70 to 80% alcohol-based handrub as an effective alternative.
- ◆ Cover nose and mouth with tissue paper when sneezing or coughing. Dispose the soiled tissues into a lidded rubbish bin, then wash hands thoroughly.
- ◆ Avoid sharing cups and eating utensils with others.
- ◆ When having respiratory symptoms, wear a surgical mask, avoid going to crowded places and seek medical advice promptly.
- ◆ Exclude infected persons from providing care to children, elderly and immunocompromised people.

Maintain good environmental hygiene

- ◆ Regularly clean and disinfect frequently touched surfaces such as furniture, toys and commonly shared items with 1:99 diluted household bleach (mixing one part of 5.25% bleach with 99 parts of water), leave for 15 to 30 minutes, and then rinse with water and keep dry. For metallic surface, disinfect with 70% alcohol.
- ◆ Use absorbent disposable towels to wipe away obvious contaminants such as respiratory secretions, and then disinfect the surface and neighbouring areas with 1:49 diluted household bleach (mixing one part of 5.25% bleach with 49 parts of water), leave for 15 to 30 minutes and then rinse with water and keep dry. For metallic surface, disinfect with 70% alcohol.
- ◆ Maintain good indoor ventilation. Avoid going to crowded or poorly ventilated public places.

¹Majority of the respiratory specimens were sent from public hospitals.

Facts on HMPV

Human metapneumovirus (HMPV) is a virus that can cause upper and lower respiratory infections in people of all ages, especially young children, elderly and immunocompromised people. HMPV has been reported worldwide since it was first reported in 2001.

HMPV can be transmitted by direct or indirect contact. It is most likely spread from an infected person to others through: secretions from coughing and sneezing, close personal contact (such as touching or shaking hands), and touching the mouth, nose or eyes after touching contaminated articles. The incubation period is usually three to six days.

The clinical presentations of HMPV are similar to other viruses that cause upper and lower respiratory infections. In children, HMPV causes symptoms such as fever, cough, nasal congestion, difficulty in breathing or shortness of breath. Some children may also present with otitis media, diarrhoea, vomiting, rash, and febrile convulsion. In adults, HMPV usually causes mild disease characterised by cough, hoarseness, runny nose and sputum production. HMPV infection may progress to bronchiolitis or pneumonia.

NEWS IN BRIEF

Celebration Ceremony for the Infection Prevention Programme in Residential Care Homes for the Elderly 2016-2018 and Kicking Off Ceremony of the Outbreak Prevention Programme 2019-2021

The Infection Control Branch (ICB) of the Centre for Health Protection (CHP) of the Department of Health organised a ceremony to celebrate the completion of the Infection Prevention Programme in Residential Care Homes for the Elderly (RCHEs) 2016-2018 and to announce the coming Outbreak Prevention Programme 2019-2021 on May 31, 2019.

The Infection Prevention Programme in RCHEs 2016-2018 aimed to understand the infection control practice in RCHEs and help RCHEs to improve their infection control practice if there were gaps detected during the programme. We noticed improvements in practice of hand hygiene, care of residents who were carriers of multidrug resistant organisms and care of residents with nasogastric tube after the programme.

The coming Outbreak Prevention Programme in RCHEs 2019-2021 will commence soon. The programme aims to empower the infection control officer of RCHEs for promoting hand hygiene not only among staff but also among residents of RCHEs. It also aims to empower the infection control officer for better control of outbreaks in RCHEs.

One hundred and seventy-nine representatives from 150 RCHEs joined the ceremony. Key findings of the Infection Prevention Programme have been shared with the audience. We emphasised the importance of hand hygiene to prevent the spread of communicable diseases and highlighted bring home message on how to properly perform hand hygiene. "Don't Pass on the Bugs. Wash or Rub with 7 steps for 20 seconds is a Must".

To engage RCHEs staff for hand hygiene, we also had games booths to facilitate their understanding and performance of hand hygiene. Staff from different RCHEs and colleagues of ICB had good exchange of ideas and experience on better infection control practice in RCHEs.



Photo 1 - The audience and ICB team.



Photo 2 - Dr Andrew TY Wong (right) presented certificates to participating RCHEs.



Photo 3 - Exchange of experience between RCHE staff and ICB colleagues.



Photo 4 - Game booth to engage participants for proper hand hygiene.

Two possible cases of sporadic Creutzfeldt-Jakob disease

On June 5 and 8, 2019, CHP recorded two possible cases of sporadic Creutzfeldt-Jakob disease (CJD).

The first case affected a 59-year-old woman with underlying medical illnesses. She presented with progressive memory loss, dizziness and unsteady gait since April 2019. She was admitted to a public hospital on June 3 and was found to have progressive dementia, gait disturbance and cerebellar and pyramidal signs. Findings of brain magnetic resonance imaging (MRI) were compatible with CJD.

The second case affected a 70-year-old woman with underlying medical illnesses. She presented with dizziness and blurred vision since early May 2019. She was admitted to a private hospital on May 15 and was found to have progressive dementia, visual dysfunction, gait disturbance, dysphasia and cerebellar and pyramidal signs. Findings of brain MRI were compatible with CJD.

Both cases had no known family history of CJD. No risk factors for either iatrogenic or variant CJD were identified. They were classified as possible cases of sporadic CJD.

A sporadic case of psittacosis

On June 10, 2019, CHP recorded a case of psittacosis affecting an 80-year-old man with underlying illnesses. He had presented with fever, cough, malaise and loss of appetite since May 25 and was admitted to a public hospital on June 2. His chest X-ray showed right lower zone consolidation. The clinical diagnosis was pneumonia with respiratory failure and he required intensive care. His condition improved with antibiotic treatment. His nasopharyngeal aspirate collected on June 3 was tested positive for *Chlamydophila psittaci* DNA. He lived in Dongguan during the incubation period and returned to Hong Kong for treatment after onset of symptoms. According to his relative, he did not have any exposure history with birds or their excreta during the incubation period. His home contact remained asymptomatic.

A sporadic case of necrotizing fasciitis due to *Vibrio vulnificus* infection

On June 11 2019, CHP recorded a sporadic case of necrotising fasciitis due to *Vibrio vulnificus* infection affecting a 99-year-old man with pre-existing medical conditions. He presented with fever and right calf swelling on June 8 and was admitted to a private hospital on the same day. The diagnosis was necrotising fasciitis requiring intensive care. He was treated with antibiotics and surgical debridement. Blood collected on June 8 was tested positive for *Vibrio vulnificus*. His current condition was stable. He did not recall history of injury or wound. He had no travel history during incubation period and his home contacts were asymptomatic.