

本署檔號 Our Ref. : (3) in DH SEB CD/8/61/2

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Dear Doctor,

Alert on human infection with rat hepatitis E virus (HEV)

We would like to draw your attention to the recent cases of human infection with rat hepatitis E virus (HEV) recorded by the Centre for Health Protection (CHP) of the Department of Health, and alert you to the possibility of rat HEV infection among immunocompromised patients with deranged liver function without other known causes.

The usual HEV causing human infection belongs to *Orthohepevirus A* (HEV-A). Apart from HEV-A, the *Orthohepevirus* genus has three other species, namely, *Orthohepevirus B* that circulates in chickens, *Orthohepevirus C* (HEV-C) in rats and ferrets and *Orthohepevirus D* in bats. HEV-C is also known as rat HEV. Cases of human infection with rat HEV have been reported in Hong Kong and Canada¹ recently.

So far, five cases of human rat HEV infection have been identified in Hong Kong. The first case was reported by the Department of Microbiology of the University of Hong Kong (HKU) in September 2018, involving a 56-year-old man who had undergone liver transplant in May 2017 and was put on immunosuppressants. Upon retrospective testing of 73 archived blood samples, HKU identified another case of rat HEV infection involving a 70-year-old woman who was on immunosuppressant for treatment of underlying disease in November 2018.

Since November 2018, the Public Health Laboratory Services Branch (PHLSB) of CHP has enhanced the surveillance of both human and rat HEV. In



¹ Andonov A, Robbins M, Borlang J, *et al.* Rat hepatitis E virus linked to severe acute hepatitis in an immunocompetent patient. *J Infect Dis.* 2019 Jan 11. doi: 10.1093/infdis/jiz025.

May 2019, PHLSB detected three additional cases of human rat HEV infection involving three men aged 67, 74 and 81 years respectively. All three cases had major underlying illnesses (one with metastatic carcinoma, and two had renal transplants and were on immunosuppressants) and presented with liver function derangement without other obvious symptoms of acute hepatitis.

Among the five cases, all except the 67-year-old male patient were tested positive for anti-HEV IgM antibody. The 74-year-old patient was admitted to a public hospital due to underlying illnesses on 28 April 2019 and had passed away on 4 May due to an unrelated cause. The remaining four cases were in stable condition. CHP's epidemiological investigations revealed that the first two patients identified in 2018 resided in different areas of Wong Tai Sin and the three recently identified patients resided in three other districts. All five patients did not recall having direct contact with rodents or their excreta. One noticed suspected rodent excreta in his residence and another one recalled having seen rodents in a restaurant he frequently visited. However, based on the available epidemiological information, the source and the route of infection could not be determined. The exact mode of transmission of rat HEV to humans is unknown at the moment.

In view of the above findings, we would like to alert you to the possibility of rat HEV infection in immunocompromised patients (e.g. patients who had organ transplant and on immunosuppressant) with liver function derangement. Please contact PHLSB for enquiry on HEV testing.

Elderly with major underlying illnesses, transplant patients, pregnant women, as well as people with chronic liver diseases and G6PD deficiency, are prone to develop severe illness when having HEV infection. Please advise the above persons to especially observe personal hygiene, food hygiene and environmental hygiene to prevent HEV infection including rat HEV. Further information on HEV is available from the website of CHP (<https://www.chp.gov.hk/en/healthtopics/content/24/12257.html>).

Please draw the attention of the healthcare professionals and supporting staff in your institution/ working with you to the above. Thank you for your unfailing support in prevention and control of communicable diseases.

Yours faithfully,



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