

Coronavirus: Reinfection

Covid-19 reinfection cases rare, experts say

They are not a cause for worry unless many more cases surface, as reports of twice-infected HK man spark fears

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News that a 33-year-old man in Hong Kong was reinfected with Covid-19 has sparked fears that people can get the disease more than once. But infectious diseases experts said such cases are rare and not a cause for worry, unless many more cases surface.

Most people develop a robust immune response after a Covid-19 infection, but for reasons that are currently unknown, the man in Hong Kong had failed to mount an antibody response to the first infection in late March.

He was hospitalised and discharged on April 14 after two negative swabs from his nasopharynx and throat. Then he tested positive for Covid-19 on a saliva test on Aug 15, after returning from a trip to Spain via Britain.

University of Hong Kong (HKU) researchers said they have found the world's first documented case of reinfection, after they sequenced the virus from the man's infections and found that he had a different strain from the one in March.

Professor Paul Tambyah, a senior infectious diseases consultant at the National University Hospital, said: "The likely reason he was reinfected with a different strain is that he had no detectable antibodies after the first infection – possibly because it was so mild (he was asymptomatic by the time he was hospitalised), but also possibly because of some un-

common specific immune defect."

This appears to be a rare case, "just like we occasionally get people who have two episodes of chicken pox or even measles", he added.

Globally, there are more than 23 million Covid-19 cases.

Before the Hong Kong case, there have been only some anecdotal reports of reinfections.

Interestingly, the Hong Kong man had no symptoms the second time around, while during his first infection, the symptoms were mild.

Prof Tambyah said the first infection seems to have protected the man from a serious infection during the second exposure.

It also primed him for a late antibody response when exposed to the virus again, even though it was a different strain.

Yale University immunologist Akiko Iwasaki said on Twitter that the man's immunity protected him from being sick with Covid-19, even if it was not enough to block reinfection. But what was encouraging is that while he had no detectable antibodies at the time of reinfection, he developed detectable antibodies after it, she added.

She further said that since reinfection can occur, herd immunity by natural infection is unlikely to eliminate the virus that causes Covid-19.

The only safe and effective way to achieve herd immunity is through vaccination.

The HKU researchers reportedly said the reinfection case would mean those who have been infected with Covid-19 should still be

offered vaccination, and comply with mask-wearing and social distancing restrictions.

Their study is reportedly due for publication in the American journal *Clinical Infectious Diseases*.

Said Associate Professor Hsu Li Yang, an infectious diseases specialist from the National University of Singapore's Saw Swee Hock School of Public Health: "This is a single case, but represents something we felt was plausible – that immunity post-infection may not be lifelong, just like for other human coronaviruses or influenza."

Vaccine-conferred immunity may not be lifelong as well, but it may perhaps be more like influenza vaccines in which repeated vaccinations are required, he added.

Still, Professor Ooi Eng Eong, deputy director of Duke-NUS Medical School's emerging infectious diseases programme, pointed out that the immune response to vaccination is different from that to a Sars-CoV-2 infection.

"The virus contains genetic elements that are able to suppress our immune response, whereas vaccines are designed to stimulate these responses," he said.

"The resultant immunity from vaccination and infection would likely be different."

There are still a lot of unknowns about the Hong Kong case.

For instance, it is not known if the reinfected man was able to mount a T-cell response to the initial infection, even if he did not have an antibody response, said Prof Tambyah.

T-cells, an essential part of the immune system, may offer long-lasting immunity against Covid-19.

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POSSIBLE MILD FIRST INFECTION

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PROFESSOR PAUL TAMBYAH, a senior infectious diseases consultant at the National University Hospital, noting that it could be "just like we occasionally get people who have two episodes of chicken pox or even measles".



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ASSOCIATE PROFESSOR HSU LI YANG, an infectious diseases specialist from National University of Singapore's Saw Swee Hock School of Public Health. He added that vaccine-conferred immunity may not be lifelong as well, but it may perhaps be more like influenza vaccines in which repeated vaccinations are required.



DIFFERENT IMMUNE RESPONSES

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