ASEAN CENTER OF MILITARY MEDICINE

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ACMM Featured: Japan Finds COVID variants in Domestic Cases

The health ministry said Monday that a mutated strain of COVID-19 first detected in Britain has been confirmed in three people in Japan with no history of visiting the U.K. The three people, who live in Shizuoka Prefecture, have not had any contact with others who have a history of visiting the U.K., the ministry said.

Infection routes are unknown for two of them, and they are believed to have been infected with the strain through community spread. The ministry said that two of the patients, a woman in her 20s and a man in his 60s, developed symptoms early this month. The other patient, a woman in her 40s, had close contact with the woman in her 20s. All three are undergoing care at home and have not had interactions with the public at large. The ministry also said that a man in his 20s in Tokyo, who entered Japan from Britain on Dec. 31, tested positive for a coronavirus variant.

Japan had confirmed 45 new variant cases as of Sunday, and infection routes had been traced in all cases. Experts have said the new variant could be up to 70% more contagious.

Japan earlier this month expanded a state of emergency declared in the Tokyo area to seven more prefectures to curb COVID-19 cases. The country has recorded about 335,000 cases of infection so far, including 4,500 deaths.

ACMM Perspective:

Since the first outbreak of COVID-19 in December 2019 there was spreading of the virus across the globe and in the fall of 2020 several new variants SAR-CoV-2 has been reported.

There were 3 main variants reported by the CDC. First major variant was reported in United Kingdom, a new variant called B.1.1.7 has emerged with an unusually large number of mutations. This variant spreads more easily and quickly than other variants. Currently, there is no evidence that it causes more severe illness or increased risk of death. This variant was first detected in September 2020 and numerous countries around the world have been detected including the United States and Canada. Currently there is no evidence to suggest that the variant has any impact on the severity of disease or vaccine efficacy. Second major variants called B.1.351 has emerged independently of the variant detected in the UK. This variant, originally detected in early October, shares some mutations with the variant detected in the UK. There have been cases caused by this variant outside of South Africa, but it has not been detected in the US. There is some evidence to indicate that one of the spike protein mutations, E484K, may affect neutralization by some polyclonal and monoclonal antibodies. The third major variants called P.1 emerged and was identified in four travelers from Brazil, who were tested during routine screening at Haneda airport outside Tokyo, Japan. This variant contains a set of additional mutations (lineage contains 17 unique amino acid changes and 3 deletions.) that may affect its ability to be recognized by antibodies and this may affect the ability antibodies generated through a previous natural infection or through vaccination to neutralize the virus.

Some potential consequences which may affects the global population from the viral variants are the following:

- The ability to spread more quickly in people: In the lab, 614G variants propagate more quickly in human respiratory epithelial cells, outcompeting 614D viruses. There also is epidemiologic evidence that the 614G variant spreads more quickly than viruses without the mutation.
- The ability to cause either milder or more severe disease in people.

- Ability to evade detection by specific diagnostic tests.
- Decreased susceptibility to therapeutic agents such as monoclonal antibodies.
- Ability to evade natural or vaccine-induced immunity.

Currently, there is no evidence that these variants cause more severe illness or increased risk of death. However, an increase in the number of cases will put more strain on health care resources, lead to more hospitalizations, and potentially more deaths. Moreover, that will increase compliance with public health mitigation strategies, such as vaccination, physical distancing, masks covering in public, hand hygiene, and quarantine, will be essential to limiting the spread of SARS-CoV-2 and protecting public health.

Source

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