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New test for severe chikungunya cases

By Liaw Wy-Cin

SCIENTISTS in Singapore have found a way to help doctors sieve out severe cases of a debilitating mosquito-borne disease from mild ones.

If further studies confirm these early findings, doctors could more accurately pinpoint patients with severe cases of chikungunya fever, in about five years' time.

Currently, doctors look for signs such as low blood pressure, confusion and the inability to move arms and legs as indications of a severe case of the mosquito-spread virus.

But there is currently no definitive laboratory test that confirms the severity of infection.

While studying the symptoms and blood samples of 10 chikungunya patients, scientists at the Singapore Immunology Network (SIgN) and doctors from Tan Tock Seng Hospital found that the behaviour of three tiny substances in the body was closely linked to patients with severe cases of chikungunya.

These three substances belong to a group that sends signals to cells about how to behave and defend the body in an infection, for example.

The levels of two of the substances were found to be about three times higher in patients with severe cases of chikungunya, compared with levels in those who had a milder form of the disease, said Dr Lisa Ng, who led the SIgN team, a research consortium under the Agency for Science, Technology and Research.

But the behaviour of the third substance was the reverse - its level was found to be about three times lower in patients with severe chikungunya, compared with levels in those with the milder form of the disease.

This substance is found in blood platelets, whose numbers fall in the course of the disease.

The head of the infectious diseases division at the National University of Singapore and National University Hospital, Associate Professor Paul Tambyah, hailed the study as the first to look at how the body's immune system responds to the disease.

He said: 'It is a small study but it does provide important preliminary information which could lead to much larger studies to validate the findings.'

The researchers are now working on studying samples gathered from some 100 patients during the outbreak in August last year.

Associate Professor Leo Yee Sin, clinical director of Tan Tock Seng Hospital's Communicable Disease Centre, said: 'We hope this gives us higher confidence to validate what we have found and to understand the disease better.

'If we can get something into the clinic in five years, that would be very, very good.'

More cases of mosquito-borne diseases

DENGUE and chikungunya are caused by different mosquito-carrying viruses although they give rise to similar symptoms such as sudden high fever, headache, fatigue, nausea, vomiting, muscle pain, rash and joint pain.

While dengue is endemic in Singapore, with regular outbreaks for many years now, chikungunya appeared only from 2006. But the number of people affected has been increasing markedly, statistics show.

Mosquito-borne disease cases in Singapore:

First eight weeks of 2009

Chikungunya: 211

Dengue fever: 1,102

First eight weeks of 2008

Chikungunya: 14

Dengue fever: 850