Heart-failure test kit to be adapted to identify severe dengue cases

A team from NTU discovered two compounds in blood that could identify patients at risk of severe dengue. PHOTO: NTU

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The kits, which are commercially available, can be modified to take advantage of a recent finding by a team from Nanyang Technological University (NTU) and the National Centre for Infectious Diseases (NCID), who identified two compounds in the blood of dengue patients that could determine if a patient is at risk of severe dengue.

Called sST2 and suPAR, the compounds are also present in heart failure patients, causing inflammation and fluid overload in the body.

“What we found was that these two proteins can be identified early in dengue infection, and they are actually quite useful in identifying patients who may progress to experience severe dengue,” said Dr Andrew Teo, lead author of the study and a dean’s postdoctoral fellow at NTU’s Lee Kong Chian School of Medicine.

During a dengue infection, the body’s immune response is triggered, elevating the levels of the two compounds. The team found that most severe dengue cases tended to have higher levels than non-severe cases.

Dr Chia Po Ying, a consultant at NCID who led the clinical recruitment for the study, said: “Heart failure is a complication of severe dengue. So when we were looking at these components, we found that even in early dengue infection, these two proteins were higher than usual. That was why we pivoted to look at this in terms of potential biomarkers for dengue.”

(/news/singapore/dengue-cases-53-cent-between-july-and-september-one-death-reported)

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Describing the heart failure test kit as similar to the antigen rapid test (ART) kit, Associate Professor Yeo Tsin Wen, an infectious diseases specialist at the Lee Kong Chian School of Medicine, said: “The test would be easy, and an inexpensive point-of-care tool to help doctors avoid unnecessary hospitalisation of patients suffering from mild dengue, relieving the healthcare burden and costs during dengue outbreaks.”

Dr Teo added: “The turnaround time for the kit is between 10 and 15 minutes, and this is actually quite a game-changer.”