

A landmark study and a kit to predict heart-attack risk

TAN WEIZHEN

weizhen@mediacorp.com.sg

SINGAPORE — Hundreds of Singaporeans will be screened in a landmark study, aimed at developing a simple blood test that can predict if a person is at risk of a heart attack or stroke.

The study, which is being carried out for the first time, will be conducted by a team of scientists from Singapore and the Netherlands. They had discovered that more than 10 types of unique proteins, or biomarkers, are present in the blood of people who recently had a stroke or heart attack.

According to the team — a collaborative effort between Nanyang Technological University (NTU), National University Hospital (NUH) and the Interuniversity Cardiology Institute of the Netherlands (ICIN) — blood and tissue samples have been collected from about 800 heart patients here in the past two years. This will be increased to more than 2,000 samples in the next few years.

The scientists hope that by collecting such samples in Singapore, the best biomarkers to detect the diseases can be discovered, leading to a more predictive diagnostic test kit tailored to the population here. It also represents a unique opportunity to compare results among the different races in Singapore, the scientists said.

The result of the comparison could lead to the test kit, being, for example, tailored



Assistant Professor Sze Siu Kwan from the Division of Structural Biology & Biochemistry at NTU's School of Biological Sciences with auto-sampler tubes in the laboratory, which are part of NTU's first heart attack/stroke research project involving a multi-racial population. PHOTO BY SYAFIQAH HAMID

to diagnose patients by race. The patient can key in his age and race, and the relevant biomarkers could be used to do a better job of diagnosis.

Describing the need for such a test kit, NUH Professor Lee Chuen Neng said: "The current practice detects these conditions based on symptoms. But it is very dangerous (especially since) some high risk patients don't have symptoms." He added that conditions, or lifestyle habits — which may lead to a heart attack or stroke — such as age, high

cholesterol, diabetes or smoking, are still not strong enough as predictive indicators.

The samples will be collected from heart patients in their 60s and 70s — with their permission, said Prof Lee. He added that the larger the sample size, the higher their chances are of developing a highly predictive test kit.

Prof Newman Sze, NTU's lead scientist, estimates that the blood test kit can be developed for use during health screenings at local polyclinics and hospitals in four to five years' time.