



The cancer research team includes (from left) Professor Jimmy So of the Yong Loo Lin School of Medicine at NUS; Dr Yeoh Khay Guan, dean of the medical school and co-lead investigator of the study; and Professor Patrick Tan of the Duke-NUS Medical School, another co-lead investigator. ST PHOTO: JONATHAN CHOO

New way to better predict stomach cancer

Gracia Lee

Singapore researchers, in a groundbreaking study, have found a new way to better predict and prevent stomach cancer, which claims up to 500 lives here yearly.

A research team led by the National University Health System (NUHS) and Duke-NUS Medical School found that DNA sequencing was more effective in detecting the *Helicobacter pylori* (HP) bacteria, a key trigger for stomach cancer, than current diagnostic tests.

The bacteria can cause long-term irritation and inflammation of the stomach lining, which in turn can

lead to intestinal metaplasia (IM), a condition in which cells in the lining of the stomach transform after they are injured. People with IM cells are six times more likely to develop stomach cancer.

Stomach cancer in its early stages can be cured. But because its symptoms often show up late, most cases are discovered only at an advanced stage, said Dr Yeoh Khay Guan, dean of the National University of Singapore's Yong Loo Lin School of Medicine and co-lead investigator of the study, at a media briefing last Friday.

As a result, only 27 per cent of stomach cancer patients survive five years after being diagnosed, ac-

cording to statistics from the Singapore Cancer Registry.

While blood or breath tests are now used to detect the HP bacteria, the researchers found that genome sequencing provides better accuracy and sensitivity.

Said co-lead investigator Patrick Tan, who is also a professor at Duke-NUS Medical School: "By knowing which patients are at an extremely high risk of stomach cancer, we will be able to monitor them more closely and, perhaps, intercept the cancer before it develops."

Prof Tan said the study – conducted from 2004 to 2016 – was also the first to comprehensively map out the genetic changes in IM among people who do not suffer from stomach cancer. About 10 per cent of IM cells studied were found to have an extra gene, MYC, which causes a rapid growth of the IM cells.

"While IM cells are not cancer-

ous, they show signs of DNA damage and mutation that can possibly develop into stomach cancer," said Prof Tan.

Dr Yeoh, who is also deputy chief executive of NUHS, said the new findings "help us understand why some people have a higher risk of progression to stomach cancer, and identify those who may benefit from closer follow-up to prevent cancer or to detect it early so that it can be cured".

The study, which was published in cancer research journal *Cancer Cell*, was based on some 3,000 participants under the Gastric Cancer Epidemiology Programme, and with the support of patients and doctors from National University Hospital, Tan Tock Seng Hospital, Singapore General Hospital and Changi General Hospital.

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