Asian lung cancer tumours may be tougher to treat: Study

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Asians with lung cancer have tumours that are genetically more complex than previously thought and this could make these patients more challenging to treat, a study by the Genome Institute of Singapore (GIS) and the National Cancer Centre Singapore has found.

The study, which was published in scientific journal Nature Communications on Jan 15, used genome sequencing to analyse 79 tumour sections from 16 lung tumours of patients from Asian countries, including Singapore.

This was one of the largest cohorts examined using this method, said the researchers at a media conference on Monday.

The study began in 2013 and was funded by the National Medical Research Council.

Dr Tam Wai Leong, a principal investigator at GIS who contributed to the study, said: "We like to think that tumours contain cancer cells that are all the same. But surprisingly enough, cancer cells within a tumour may bear different genetic mutations to varying extents."

The study revealed that cancer cells in lung tumours of Asian patients appeared to have more varied genetic mutations than lung tumours of Caucasian patients.

"Additional genetic mutations can make Asian lung tumours harder to treat, as they tend to adapt and resist the drugs that are administered," said Dr Tam.

All the tumours studied had mutations of the epidermal growth factor receptor (EGFR) gene. The mutations occur in more than 50 per cent of tumours in Singaporean lung cancer patients. They cause cancer cells to grow uncontrollably and form tumours. They mainly affect non-smokers and are more common in women.

In the cancer's advanced stages, drugs targeting the EGFR gene mutation are only initially effective in controlling the disease, with the majority of patients developing a resistance to the medication within 10 to 12 months.

Lung cancer is the deadliest cancer in the world and claims twice as many lives as any other cancer, according to the World Health Organisation. In Singapore, it is the leading cause of cancer death and kills more than 1,100 people each year.

Dr Choo Bok Ai, senior consultant at the department of radiation oncology at the National University Cancer Institute, said the study provides an understanding of the complexity of cancers, which will help in treatment in the future. He was not involved in the study.

"We can now focus on multi-agent treatment rather than single-agent ones, as the cancer may not be driven by a single mutation," added Dr Choo who is also an assistant professor in medicine at Yong Loo Lin School of Medicine at National University of Singapore.