Discoveries in cancer by scientists

Mutated gene that lessens drug effects and the solution found

By Salma Khalik
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Scientists here have found a mutation in a gene that makes some cancer drugs less effective, as well as a solution to tackle this problem.

This mutation appears in about 15 per cent of East Asians, and to a lesser extent in other Asians, but is completely absent in Caucasians and Africans.

A team of 55 researchers, led by Associate Professor Ong Sin Tiong of Duke-NUS Graduate Medical School, found that “targeted” drugs to combat specific types of lung and blood cancers do not work as well in patients with the mutated gene.

However, the shortcoming can be addressed by the addition of another drug that is currently not commercially available, but is used in clinical trials elsewhere.

The existing targeted drugs, which block the growth and spread of the cancer by interfering with the molecules that cause the tumour to grow, are not cheap.

The bill can come up to $2,000 to $3,000 a month for lung cancer patients, with the drug able to extend life by as much as 30 months.

For leukaemia, the cost is $4,000 to $5,000 a month, with patients living a good-quality life for as long as a decade.

However, in about 20 per cent of patients with these forms of cancers, the drug benefit is not as good as it is for the rest.

The team’s findings were published in Nature Medicine – considered one of the world’s top biomedical journals – this morning.

Professor Patrick Casey, senior vice-dean for research at Duke-NUS Graduate Medical School, called the discovery “spectacular”.

He said: “It’s very rare that a laboratory-based discovery has the potential to change the practice of medicine in the year that it is discovered.”

This is because the science to discover the mutation in patients, plus the drug to deal with that, already exists.

But before this discovery goes into clinical use, full-scale human trials are needed. The scientists hope to link up with a large pharmaceutical firm for funding.

Dr Charles Chua, a senior consultant in haematology at Singapore General Hospital, said there might be about five leukaemia patients here who have this mutation each year.

Dr Darren Lim, a senior medical oncologist at National Cancer Centre, estimates about 30 lung cancer patients might benefit from knowing they have the mutation. They could then go on to other forms of treatment.

In such lung cancer patients, the disease is “stopped” for about six months before it continues getting worse, compared to 12 months which most patients on such drugs enjoy.

Prof Casey said the discovery highlights the vibrancy of biomedical research here.

The team came not only from Duke-NUS but also from Genome Institute of Singapore (GIS) and several hospitals here and in Japan. It was the GIS that identified the slight mutation in the gene.

The multi-institute team, which has been working on this project since 2008, is funded by a $1.6 million grant from National Medical Research Council and Biomedical Research Council.

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