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Keeping an eye on stroke prevention

Study shows state of blood vessels at the back of the eye may hint at possible stroke

■ BY LIAW WY-CIN

BLOOD vessels at the back of the eye may offer a good guide to predicting those more prone to suffering a type of stroke more common among Asians.

This might also help doctors come up with a way to treat and prevent it.

In a study of about 1,300 stroke patients in Singapore and Australia, researchers from these countries and the United Kingdom found that those who had small blood vessel stroke also had narrowed or damaged blood vessels in the retina.

Such retinal imaging may provide a sneak peek at what is happening in the blood vessels in the brain, doctors said.

The latest finding shores up growing data that abnormal retinal blood vessels are indicators of diseases such as kidney failure, diabetes and heart and blood vessel diseases.

Small blood vessel stroke is more common among Asians than among other ethnicities, say doctors.

The results of the study, led by Professor Wong Tien Yin, director of the Singapore Eye Research Institute, suggest that the causes of small and large blood vessel strokes are different, and further research could reveal if they should have different treatments, said eye and neurology researchers on the project.

National Neuroscience Institute (NNI) neurologist, Dr Deidre De Silva, said the findings of the study gave insight into small blood vessel stroke, whose cause is still not known.

"There are many similarities between eye blood vessels and small brain blood vessels," she said. "Hence, changes in the eye blood vessels may provide clues to what is happening in the small brain blood vessels, which are too small to be seen with current imaging techniques."

The most common type of stroke in Singapore is caused by blockage of the blood supply to the brain, and this can happen in small or large blood vessels, said Dr De Silva, who is from NNI's Singapore General Hospital campus. She collaborated on the study.

Small blood vessel stroke victims tend to do better than those who suffer large blood vessel strokes.

Worldwide, just 35 per cent of those with large blood vessel stroke are independent six months after the stroke, compared with 62 per cent for small

blood vessel stroke victims, said Dr De Silva.

The study involved about 700 patients from Singapore and was conducted from 2005 to last year. The findings were published online in prestigious medical journal *Lancet Neurology* and presented at the European Stroke Conference in Sweden yesterday.

Doctors interviewed here see promise in the study findings.

National University Hospital neurologist Vijay Sharma said: "Currently, a significant proportion of strokes is not explainable by traditional risk factors like high blood pressure, diabetes, high cholesterol and smoking.

"The concept of retinal photography appears promising and could explain the underlying stroke mechanism."

Associate Professor Lim Tock Han, an eye specialist from Tan Tock Seng Hospital, said there are not many non-invasive ways of studying small blood vessels.

He said: "These retinal blood vessels, if subsequently proven that they indeed mirror small blood vessels of the brain, could be studied - in a non-invasive way - to see how they might respond to drugs aimed at reducing stroke risk.

"The development and testing of such drugs could help anchor Singapore as a biomedical research hub."

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