

Cell discovery may help diabetes sufferers

NUS scientists hope to curb risks caused by clogged blood vessels

By **FENG ZENGKUN**

DIABETIC patients sometimes have blood vessels that are so clogged and thickened that their feet are deprived of oxygen, rot and need to be amputated.

People with high blood pressure can also have obstructed blood vessels, increasing their chances of a stroke.

But a new discovery by scientists at the National University of Singapore (NUS) could offer hope to some of these patients.

They have discovered that a type of blood cell called a monocyte can be manipulated into a

cell type that helps the body to form and maintain new blood vessels that carry oxygen.

If injected into patients, such manipulated cells could help them to create new blood vessels to reduce their risk of health problems.

The scientists' work was published recently in the scientific journal *Molecular Therapy*, the official journal of the American Society for Gene and Cell Therapy.

Associate Professor Michael Raghunath from the NUS Yong Loo Lin School of Medicine's Department of Biochemistry said the blood cells can be cul-

tured from a patient's own blood. This will eliminate the risk of toxic side effects from drugs, and the body also will not reject its own cells, compared to transfusions or synthetic drugs.

"We're not genetically modifying the cells in any way, so it's still the patient's own blood," said Prof Raghunath, who is also a senior member of the NUS Department of Biomedical Engineering.

He said the cells could help sufferers of critical limb ischemia, a condition in which arteries in the lower part of the body harden and narrow over time due to the build-up of fatty deposits.

This severe blockage significantly reduces blood flow and can be caused by ageing, smok-

ing, diabetes, obesity, high cholesterol or blood pressure, a sedentary lifestyle or hereditary factors.

But Prof Raghunath said that the cells are not a cure-all as the new blood vessels could become damaged again if patients do not take care of themselves.

The scientists plan to seek permission from the Health Sciences Authority to carry out safety trials of the cells on people soon.

The research was funded by the Singapore-MIT Alliance for Research Technology's Innovation Centre, and it was a collaboration with the Agency for Science, Technology and Research's Singapore Biomaging Consortium.

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