

NUS medicine researchers develop oral-anti-diabetic drug

Friday, Oct 21, 2016

SINGAPORE - NUS Yong Loo Lin School of Medicine has announced the successful completion of the phase I clinical trial of an oral anti-diabetic drug developed locally after 20 years of research.

The drug molecule known as DAA-I acts on the angiotensin AT receptor and produces biological responses that improve the action of insulin, leading to increased uptake of glucose into insulin-sensitive cells. It also reduces the damaging chronic inflammation that accompanies diabetes and attenuates pancreatic beta cell death.

In normal individuals, insulin that is released from the pancreas after a meal binds to insulin-sensitive cells and activates the insulin pathway, which allows glucose to be transported from the blood into the cell for energy usage or storage. In diabetes, this pathway is faulty and becomes resistant to insulin as switches in the insulin pathway have malfunctioned.

DAA-I rectifies all the four switches found to be malfunctioning in diabetes, said Associate Professor Sim Meng Kwoon, retired faculty member of the Department of Pharmacology at NUS Medicine and one of the lead investigators who carried out the study.

The Phase I trial was led by clinical principal investigator, Professor Lee Kok Onn from NUS Medicine's Division of Endocrinology, and involved 18 healthy individuals aged 24 to 47 years old.

The clinical trial established that DAA-I was well tolerated by human subjects, paving the way for further clinical trials.

Diabetes is one of the most prevalent chronic diseases in Singapore, with one in nine Singaporeans suffering from diabetes. The number of diabetic people in Singapore is expected to grow from 400,000 in 2013 to 600,000 by 2030.

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