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Media Statement

MUTANT PROTEIN MAY SPARK SOME DIABETES CASES: WA RESEARCHER

A WA researcher suspects a mutant protein could be triggering type 1 diabetes in patients who display no signs of an autoimmune attack, the usual cause of the disease.

Associate Professor Gerard Hoyne, based at The University of Notre Dame Australia in Fremantle, has been awarded a \$75,000 grant from local funding group Diabetes Research WA to investigate if mutations in the Cdk4 gene could be to blame.

“Most people with type 1 diabetes develop the disease when their body’s own immune system mistakenly destroys insulin-producing beta cells in the pancreas but in some patients, that’s not the case,” said A/Prof Hoyne.

“These people show no evidence of autoimmune markers in the blood so what’s triggering their diabetes, and the death of their beta cells, is a mystery.

“This study will investigate if these people are affected by a mutation in the Cdk4 gene that, in mouse models, have been shown to be linked to the development of type 1 diabetes.”

A/Prof Hoyne said preliminary studies revealed the recessive gene mutation caused a protein error that led to a critical loss in insulin production due to the premature death of islet beta cells.

“This eventually leads to the mice developing diabetes so part of the project also aims to uncover why this protein, which is much longer than normal, doesn’t work correctly and how it shortens the lifespan of beta cells and affects insulin secretion,” he explained.

“We have known for some time that Cdk4 is a diabetes susceptibility gene but unravelling this part of the mystery could improve the treatment of type 1 diabetes in the future, in particular with regards to creating important islet cell transplant therapies.”

Diabetes Research WA executive director Sherl Westlund said the project, one of two funded in the charity’s 2015 round of project grants, was an example of the caliber of research being done in WA.

“We are thrilled to be able to fund science that has such enormous potential to improve the quality of life for people living with type 1 diabetes and hope the level of support for groundbreaking efforts such as this continues to build momentum,” she said.

A/Prof Hoyne is also an adjunct Senior Research Fellow at the Harry Perkins Institute for Medical Research within the Lung Institute of Western Australia through The University of Western Australia.

The study also has the support of Professor Tim Jones and Associate Professor Elizabeth Davis, clinical endocrinologists at Princess Margaret Hospital and Assistant Professor Vance Matthews at the Harry Perkins Institute of Medical Research.

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