# Basic Science Oral Presentation

## OP_B001

### DECREASED PTX3 DNA METHYLATION LEVELS ARE ASSOCIATED WITH DIABETIC NEPHROPATHY IN MALE PATIENTS

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**INTRODUCTION**
Inflammation is an established mechanism of diabetic nephropathy (DN). Pentraxin 3 (PTX3) has been suggested to play an important role in inflammation. Epigenetic mechanisms, as well as transcription and translation, have an impact on gene expression. Hypermethylation of gene promoter regions may result in transcriptional silencing. The epigenetic regulation of PTX3 gene expression in relation to diabetic nephropathy (DN) has not been studied. We aimed to determine the DNA methylation levels of the PTX3 gene in the Malay population with T2D and DN.

**METHODOLOGY**
We performed a case-control study involving a total of 27 non-diabetic control (NDC) subjects, 109 subjects with T2D and 43 subjects with DN. Epigenetic analysis of five CpG sites in the PTX3 gene promoter was performed using bisulfite pyrosequencing technology. Plasma PTX3 levels were measured using an enzyme-linked immunosorbent assay.

**RESULT**
DNA methylation levels of the PTX3 gene were gradually decreased in patients with T2D and DN, both in males and females compared to their NDC counterparts. Total mean values of the PTX3 DNA methylation levels were significantly decreased in male patients with DN (5.53%) and T2D (6.41%) compared to NDC subjects (7.00%) ($p$=0.001). Lower levels of DNA methylation at the PTX3 gene promoter were associated with higher levels of PTX3 protein in patients with DN and T2D compared to NDC subjects. However, no significant difference was observed.

**CONCLUSION**
Our results showed that hypomethylation of PTX3 gene was associated with T2D and DN in Malay males. The result was supported by the association of the DNA methylation and plasma levels of the PTX3 gene among patients with T2D and DN.