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The association of *WFS1* gene polymorphisms with the DPP-4 inhibitors treatment response in type 2 diabetes

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Objective: *WFS1* genes are highly expressed in pancreatic β -cell and potentially play a role in the DPP-4 inhibitor treatment response in type 2 diabetes. The objective of this study was to investigate the association of *WFS1* genes with the DPP-4 inhibitor treatment response.

Material & Methods: *WFS1* genes (*rs734312* and *rs10010131*) were genotyped in a case control study involving 662 type 2 diabetes (T2D) patients, using RT-PCR methods. Cases identified as DPP-4 inhibitor users (sitagliptin, vildagliptin or linagliptin). *A1c* was used to assess the treatment response of DPP-4 inhibitors. Haploview 4.2 was used in genotype and haplotype analysis. The associations of single nucleotide polymorphisms in *WFS1* genes were determined using binary logistic regression analysis (SPSS 20.0, Chicago IL).

Results: The results shown that the *WFS1 rs734312* [$p(\text{HW})=0.3411$] and *WFS1 rs10010131* [$p(\text{HW})=0.8238$] were consistent with the Hardy-Weinberg (HW) test. However, only *WFS1 rs734312* ($\chi^2=1.174$, $p=0.0496$) was statistically significant, and it predicted approximately 2.2% variants (Nagelkerke $r^2=0.022$) in the DPP-4 inhibitors treatment response. The logistic regression model shown that the *WFS1 rs734312* (genotype AG) was a significant predictor to the DPP-4 inhibitors treatment response [odds ratio (OR) 0.55; 95% confidence interval (CI) 0.37-0.84].

Conclusion: This concluded that *WFS1 rs734312* is associated with the DPP-4 inhibitors treatment response in T2D.

Biography

Jazlina Liza Jamaluddin is a final year PhD student at University of Malaya, Malaysia. She completed her Master's degree in Clinical Pharmacy from University of Science, Malaysia and first Pharmacy degree from University of Malaya. She is also a Clinical Pharmacist with 10 years of working experience in primary and tertiary healthcare in Malaysia. Her expertise includes personalised drug therapy, diabetes management, advance drug formulation, pain management and others. She has published 2 papers in ISI journals.

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