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No association between FTO rs8050136 polymorphism and response to sitagliptin

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Statement of the Problem: Although sitagliptin is known as an effective oral *antidiabetic agent*, some patients do not respond to it and fail to achieve a desirable glucose level. The rate of response to the sitagliptin is determined by many factors. Genetic play a potential role in response to medication such as sitagliptin. Genome wide association studies for type 2 diabetes mellitus (T2DM) have detected strong association between common variants in the fat mass and obesity associated gene (FTO) FTO gene involved in the Wnt signaling pathway. Variations in this gene may affect Wnt signaling pathway and response to incretin based therapy such as sitagliptin. Until now there is no study on rs8050136 and response to *sitagliptin*. The purpose of this study was to investigate the association of FTO rs8050136 polymorphism with response to sitagliptin.

Methodology & Theoretical Orientation: One hundred and thirteen type 2 diabetes patients with uncontrolled glucose level were enrolled for six months to sitagliptin in addition to their previous medication (metformin and sulphonylurea). Response to sitagliptin was defined as HbA1c reduction of more than 0.5% from baseline following sitagliptin therapy. Genotyping of the polymorphism was preformed using mini-sequencing method.

Findings: After six months of sitagliptin therapy, half of the patients responded to sitagliptin. No significant association was observed between FTO rs8050136 polymorphism and response to sitagliptin.

Conclusion & Significance: We found no association between FTO rs8050136 polymorphism and response to sitagliptin. Our negative result could be due to the sample size. Only one SNP in FTO gene has been studied in this research. Study on other SNP in FTO gene with response to sitagliptin is needed to check the association of this gene with sitagliptin.

Biography

Fatemeh Hayati has completed her Master's in Human Genetics from Universiti Sains Malaysia. Currently, she is pursuing her PhD in Human Genetics in Universiti Sains Malaysia.

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