

Association of TNF- α , IL6 and IL-10 gene Polymorphisms with Type 2 Diabetes Mellitus in Relation to Insulin Secretion and Action in Bangladeshi Population

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Abstract

Type2 diabetes mellitus is a metabolic, pro-inflammatory disorder characterized by chronic hyperglycemia and increased levels of circulating cytokines suggesting a causal role of inflammation in its etiology. Polymorphism of cytokine genes including tumour necrosis factor alpha (TNF- α), interleukin-6(IL-6) and interleukin 10(IL-10) were studied in 350T2DM patients as well as in 350 normal healthy controls. Genomic DNA was isolated from both T2DM patients and controls followed by quantification and genotyping by polymerase chain reaction-restriction fragment length polymorphism using suitable primers. Double and triple combinations of genotypes were analyzed by chi square test. Gene -gene interaction and linkage disequilibrium tests were performed using SHEsis software. Individually IL-6A/G &IL-10C/A had showed significant association with lower risk whereas only TNF- α G/A homozygous mutant variant showed higher risk of association with T2DM. In double combinations of TNF- α AA, IL-6AA genotypes increased the risk of DM 2.16 times(1.25 to 3.747) and IL-6 GG &IL-10 AA genotypes increased the risk of DM up to 3.16 times and in triple combinations TNF-alpha AA, IL-6 GG, IL-10 AA genotypes increased the risk of T2DM up to 1.75 times((0.064 to 0.457). My results suggest that individual having a GAC haplotype showed significantly increased the risk of T2DM up to 2.018 times (1.582 to 2.576)



Biography:

Roksana Yaesmin is a professor of Biochemistry in Ibrahim Medical College, BIRDEM &PhD student in the Dept of Biochemistry and Molecular Biology, University of Dhaka researcher in Biochemistry and molecular biology in the University of Dhaka. She has already completed my sample collection as well as some biochemical parameters. Till now she had completed all DNA separation and some portion of gene polymorphism.

Speaker Publications:

- 1 "To study rheumatoid factor and lipid profile in type 2 male diabetes mellitus patients in Bangladesh", Roksana Yeasmin, 2019,Biojournal of Science and Technology,Vol:6, 2018.
- 2."Rheumatoid Factor in Type 2 Male Diabetes Mellitus Patients in a Tertiary Care Hospital of Bangladesh", Roksana Yeasmin, Journal of Current and Advance Medical Research, July 2017, Vol. 4, No. 2, pp. 58-62.
- 3."Status of some Trace Elements in Type-2 Diabetic Patients and its Relationship with Lipid Profile", Roksana Yaesmin, J. Bangladesh Acad. Sci., Vol. 40, No. 1, 79-85, 2016.
- 4."Gender Variation of Lipid Profiles of Type-2 Diabetes Mellitus Patients attended at a Specialized Diabetic Hospital in Dhaka", Journal of Current and Advance Medical Research July 2015 | Volume 2 | Number 2.
5. "Assessment of overweight, obesity and metabolic variables among students of a private medical college in Dhaka city", Yeasmin, Roksana, Bangladesh Journal of Medical Science. 14. 10.3329/bjms.v14i1.21559.

[23rd Asia Pacific Pharma Congress](#) ; July 22-23, 2020, Melbourne, Australia

Abstract Citation:

Roksana Yeasmin Association of TNF- α , IL6 and IL-10 gene Polymorphisms with Type 2 Diabetes Mellitus in Relation to Insulin Secretion and Action in Bangladeshi Population, 23rd Asia Pacific Pharma Congress, July 22-23, 2020, Melbourne, Australia.