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Authors: Resal Raj, Jasvinder Singh Bhatti, Sanjay Kumar Bhadada, Pramod W. Ramteke

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Association of polymorphisms of Peroxisome Proliferator Activated Receptors in early and late onset of Type 2 Diabetes Mellitus

Resal Raj[1], Jasvinder Singh Bhatti[2], Sanjay Kumar Bhadada[3] Pramod W. Ramteke[4]

Institutions

[1]Department of Computational Biology& Bioinformatics, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad.
[2]Department of Biotechnology &Bioinformatics, SGGS College, Sector L26 Chandigarh.
[3]Department of Endocrinology, PGIMER, Chandigarh.
[4]Department of Biological Sciences, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Deemed to be University, Allahabad.

Corresponding Author
Dr. Resal Raj
Department of Computational Biology& Bioinformatics,
Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad, UP
Email: resalraj@yahoo.com
Phone: +919915804438

Abstract

Objective: Genetic variation of disease susceptible genes is different in different ethnic groups and there is an evidence of association of polymorphisms of Peroxisome Proliferator Activated Receptors (PPARs) in Type 2 Diabetes Mellitus (T2DM). This research analyses the association of PPARs in early and late onset of T2DM in North Indian Population (NIP). **Methods:** Total of 703 subjects were recruited from north of India and subjects were further divided into subjects of early onset (less than 25 years of onset, 26 T2DM and 26 controls) and late onset (more than 25 years of onset, 326 T2DM and 325 controls). **Result:** The onset of T2DM begins from 15 years and continues further to maximum T2DM subjects to the age of 50 (76% of T2DM). High BMI and WHR, high blood pressure leading to early onset of hypertension, early mortality due to T2DM (7% of T2DM is above 75 years and 3% of T2DM has 20 years duration of onset) and high hyperglycemic NIP were the few outcomes of this research. **Conclusion—**There is a strong association of PPAR γ, PPAR α and PPAR δ genes on the susceptibility of T2DM in late onset but not with the early onset of T2DM subjects in North Indian Population. Dual association of PPAR γ was observed with its genotype G/G (Ala/Ala) favoring protection against T2DM and genotype C/C (Pro/Pro) favoring susceptibility to T2DM. Association of intron7 polymorphism of PPAR α and +T294C polymorphism of PPAR δ on the susceptibility to T2DM requires further analysis.

Key words: Genotype, Susceptible genes, PPARs, Early onset,