

## ABSTRACT

Type 2 Diabetes Mellitus is characterized by insulin insensitivity as a result of insulin resistance, declining insulin production and eventually pancreatic beta cell failure. This results in the decrease glucose transport to various bodily organs including liver, muscle cells, fat cells etc. Many modifiable risk factors including hypertension, hyperglycemia results in the onset of disease and it is a heterogenous group of disorder characterize by genetic and environmental factors. In the current study *IGF-1* gene with its SNPs rs5742632 and rs6214 has been studied in Pakistani population. A total of 100 subjects, 50 patients and 50 healthy were participated in this research. Incidence of diabetes was higher in elder age group and obesity is also a major risk factor. The mean age of patient female was 53 years and control female was 50.8 years and patient male was 52.5 years and control male was 48.8 years. The mean BMI of patient female was 30 kg/m<sup>2</sup> and control female was 29.2 kg/m<sup>2</sup> and mean BMI of patient male was 29.5 kg/m<sup>2</sup> and control male was 29.15 kg/m<sup>2</sup>. Allelic and genotyping frequencies show the significant association of gene with the disease as the value of p is less than 0.05. Similarly haplotype and linkage disequilibrium also results in the significant association of the disease. There is a need for further studies so that genetic markers are studied and these genetic markers are very useful for genetic testing. Population based screening is essential for early detection of disease.