## Abstract

**Background:** Myocardial infarction is a type of cardiovascular disease and is the leading cause of death worldwide. Apo B gene has been reported to be a strong candidate gene for dyslipidemia which led to MI. two SNPs of this gene including XbaI and rs6725189 have been reported to be associated with MI in diabetic patients of different populations. But the studies on the Pakistani population were limited. This study aims to find the association of these SNPs with the development of MI in diabetics patients in Pakistan.

**Methodology:** Using PCR, RFLP, and DNA sequencing methods, a total of 150 subjects, including 100 MI patients having diabetes and 50 healthy subjects were genotyped for two SNPs. Genotypes were then analyzed using SHEsis software for allelic frequency, genotype frequency, and haplotype analysis.

**Results:** Analysis of the genotype and allele frequencies distribution revealed a significant positive association of XbaI polymorphism of Apo B with increased levels of LDL-C. Haplotype analysis further supported the findings by showing that carriers of haplotype T-G had significantly higher frequency (0.400; p=0.011) in patients. Significance was also observed with regard to X-X-genotype. While no significant association was found regarding AceI polymorphism and myocardial infarction ($p > 0.05$).

**Conclusion:** XbaI SNP in the ApoB gene is strongly associated with MI in diabetic patients as it also further causes glycation of apolipoprotein and LDL cholesterol which deposit in the heart arteries and lead to MI.



**Key Words:** Cardiovascular diseases, myocardial infarction, SNPs, ApoB, polymorphism, genetic association.