Summary

Acute coronary syndrome is one of the most criticalclinical syndromes anditis a leading health problem around the world.This study was conducted on 68 patients with acute coronary syndrome(49 males and 19females) their age ranges between31- 81 years, seen in Al-Diwaniya Teaching Hospital for the period from November 2013 to April 2014. Other 20 healthy subjects (14 males and 6 females) were included as a control group. Blood samples were collected from both groups, genomic DNA was extracted from peripheral blood leukocytes for molecular study to reveal any association between *Interleukine-6and Tumor necrosis factor alpha*genepolymorphism and predisposition toacute coronary syndrome.

Polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) technique was used for this purpose and digestion of the amplified DNA products by restriction endonuclease (NlaIIIandBbsI) gave fragments with different molecular sizes which express certain genotype.

Optical density of IL-6and TNF-α in serum was detected by ELISA technique and from which IL-6 and TNF-α concentration were evaluated according to standard curve.

The current study showed that7.35 % of the patients were in the age group of 31-40 years,while 13.24%of the patients in age group of41-50 years and 79.41%of patients in age group more than 50 years. The results also revealed that 72.06% of the patients were males. The data showed that 60.29% of patients had hypertension ,50% of patients smoker, 33.82%had diabetes mellitus,16.18% hypercholeseroluemia,and 2.94% of patients with acute coronary syndrome had positive family history.

Summary

This study detected that the prevalence rate of single nucleotide polymorphism of *IL-6* gene 174G>C promoter regionwas significantly high among cases of acute coronary syndrome(P<0.001),as CC genotype and C allelic frequency were 20.59% and 35.29% respectively as compared to healthy control subjects were 0% and 12.5% respectively.

Regardingthe C863A single nucleotide promoter polymorphism within the*TNF-α*gene.The homozygous mutant genotype (A/A) is uncommon inthe controlpopulation 20% but has an increased frequency in patients with acute coronary syndrome35.29 %. This genotype confers an odds ratio of2.182. While the heterozygousgenotype C/A is found in 15% of the control subjects and35.29% of the patients and confers an OR of 3.091.These results associated with significant increases inserum concentration of TNF-*α* and IL-6in all patients when compared with control group.But there wasno association observed between the genotype variation and serum concentration of both IL6 and TNF-α in our studied populations.

In conclusion, AA genotype and A allele of *TNF-α* C 863 A gene polymorphism are mainly associated with development of disease whereas C allele might serve as protective factors for the disease.While CC genotype and C allele of IL-6 174G>C gene polymorphism are mainly associated with development of disease whereas GG genotype higher frequency in control group.