Summary

Irritable Bowel Syndrome (IBS) is a chronic and debilitating functional gastrointestinal disorder, resulting from interactions between genetic and environmental factors, in which immunological mediators and cells play an important role.

This study was conducted on 65 patients with IBS (27 males and 38 females) their age ranges between 19-78 years, attended to Al-Diwaniya Teaching Hospital for the period from the first of December 2014 to the end of March 2015. Other 45 healthy subjects (16 males and 29 females) were included as a control group. Blood samples were collected from both groups, genomic DNA was extracted from blood leukocytes for further molecular study to reveal any association between *tumor necrosis factor-α-G308A and serotonin transporter* gene polymorphisms and predisposition to IBS. Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP) technique was used for *tumor necrosis factor-α* and digestion of the amplified DNA products by restriction endonuclease (NCOI enzyme) and gave fragments with different molecular sizes which express certain genotypes.

The current study showed that 33.85% of the patients were in the age group 29-38 years and 23.07% of the patients had age group 19-28 years. The results also revealed that 58.5% of the patients were females. The data showed that 43% of patients had diarrhea predominant IBS, 31% of patients constipation predominant IBS, 26% had mixed bowel pattern of IBS, 67.7% of IBS patients have positive family history.

This study detected that *serotonin transporter gene* polymorphism was significantly among IBS patients ($P<0.05$), S/S (deletion/deletion) genotype was ($P=0.03$), L/L (insertion /insertion) genotype was ($p=0.034$) and S/L(deletion/insertion)genotype not significantly in IBS patients ($P=0.697$). The

S/S (deletion/deletion) genotype was significantly higher in female patients (P=0.022), S/L (deletion /insertion) genotype expression was significantly higher in male patients (P =0.021). Allele (S) expression was not significantly higher in female patients (P=0.06), while allele (L) expression was not significantly higher in male patients (P =0.06).

Regarding the prevalence rate of single nucleotide polymorphism *Tumor necrosis factor-α* G308A was not significant among IBS patients. The homozygous mutant genotype AA (P>0.999), heterozygous genotype GA (P=0.397) and mutant allele A (P=0.344), association between *Tumor necrosis factor-α* genotypes and alleles expression and gender was not significant.