Summary

Infertility defined as the inability of a couple to conceive after a period of one year of intercourse without use of contraceptive. It is a worldwide problem that characterized by multifactorial etiology. Genetic, physiology, infectious, environmental factors and autoimmunity are reported as far as predisposal or even causative agents of this condition. The study of human leukocyte antigen (HLA) association, inflammation and autoimmunity were our aims. Investigate a group of 50 infertile male patients compared to 25 fertile individuals as control group. The patients group were regularly attending Al-Sadder medical city for infertile and In *vitro* fertilization (IVF) center at Al Najaf province during the period Dec. 2014 – April 2015. Based on the clinical history and seminal fluid exam, the patient group were further subgroup into Azosperm (25) and oligosperm (25). Blood sample have withdrawn from each member of the study groups. Genomic DNA extracted and processed for MR SPOT analysis to determine HLA-DQB1 genotype as a candidate genetic predisposing factor in addition the sera of patients were a subject of auto immunity investigation represented by antisperm antibody and antinuclear antibody using Enzyme Linked ImmunoSorbant Assay (ELISA) and Indirect ImmunofluorescenceAssay Test (IFAT), respectively. The ELISA also used to evaluate the interleukin 6 as a pro inflammatory mediator.

The study results showed that there is a significant difference in ASA rate in the seminal plasma for oligospermia and izospermiapatients (16% and 24% respectively), while the non-existent range of control and this can confirm why the immune infertility in these patients and that maybe the lead ASA an important role.

Through the study of interleukin-6 ratio it was clear with little variation in sperm and stateless patients where the proportions (10.92), (12.67), respectively, and this is what is likely to be caused by an increase inthe proportion of infertility. The study also showed no significant difference (P>0.05)on the role of auto-antibodies (ANA) in patients with infertility compared with the control group, and this result has revealed that there is no relationship between (ANA) and infertility patients.

As for the genetic study has appeared allele * 0303 of HLA-DQB1 a clear difference between patients Azospermia and control, and have gained these differences are significant moral (probability = 0.018), while showed recurrence alleles (DQB1 * 0305 and DQB1 * 0501) an increase in patients with oligospermia compared with the control, but the difference was significant for DQB1 * 0501 (0.049 probability). But in patients with DQB1 * 0305 allele duplicates high compared to control andthatthe difference significant (probability = 0.044).

The study conclude that the (ASA, IL-6) and the presence in the semen are signs of increase of patients with infertility, as well as the presence of alleles DQB1 *0303 and DQB1 *0305 increases the probability of nonproduction of sperm and decrease it in the count respectively.