

SUMMARY

Urinary tract infection (UTIs) are considered to be the most common infections in humans.

The current study was conducted at the Labs of Collage of Education for pure science and AL-Imam AL-Hussain teaching hospital in Thi- Qar province, during the period from February 2014 to March 2015.

The study aimed to isolation and identification of bacterial isolates from urine samples of patients with urinary tract infection, from EDTA blood investigation the frequencies of Toll-like Receptor -4 Gene in single nucleotide polymorphism (Thr399Ile) by Restriction Fragment Length Polymorphism - Polymerase Chain Reaction and measuring the levels of interleukins (IL-6 and IL-10) in the serum patients with Urinary Tract Infection by using a technique Enzyme-Linked Immune Sorbent Assay (ELISA).

one hundred fifty four patient suspected with UTI and 25 apparently healthy individuals, 4 ml Venous blood was withdrawn from every one divided into two parts, 2 ml of blood with EDTA, remaining part was centrifuge to isolate of serum and urine were collected from every one for diagnostic of bacteria.

From total of 154 mid-stream urine sample only 49 samples was showed positive result of Gram negative bacteria which is considered the study group.

The study included 17 males and 32 females and their age range between 2-75 years compared to a group of apparently healthy control N= 25 individuals 10 males and 15 females and their age range between 19-73 years.

Urine samples were cultured on the culture media and the results were as follows:

26 (53.06 %) isolate of *Escherichiacoli*, 9 (18.37 %) *pseudomonasaeruginosa*, 7 (14.29 %) *klebsiellapneumonia*, 4 (8.16 %) *proteus*, 3 (6.12 %) *klebsiellaoxytoca*, (33) gram positive and 72 no growth.

SUMMARY

DNA was isolated from EDTA blood and Restriction Fragment Length Polymorphism - Polymerase Chain Reaction was performed by using specific primers for the gene TLR-4, the results showed the presence of heterozygous in one sample from study group at site 399 (C / T) after using restriction enzyme *Hinf*I.

In conclusion, Single Nucleotide Polymorphism Thr399Ile in the third exon for TLR-4 gene may be considered as a risk factor that increases susceptibility to Urinary Tract Infection when compared with control in population of Thi-Qar province, statistical analysis showed a significant increase ($P \leq 0.01$) in the levels of interleukins (IL-6 with mean 138.56 ± 25.59 and IL-10 with mean 33.25 ± 2.53) in all serum patients compared to the control group (IL-6 with mean 44.96 ± 6.39 and IL-10 with mean 15.25 ± 4.18) and the results of the bacterial isolates have been shown *Escherichia coli* was most common causative agent in UTI.