



Research Highlight

INTERLEUKIN: A RELIABLE MARKER FOR THE DIAGNOSIS OF UTI

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Urinary Tract Infection (UTI) is generally caused by the intrusion of pathogenic micro-organisms in the urinary tract system. UTI is comparatively common infection in children that can cause several severe complications including renal scarring, hypertension as well as chronic renal failure¹.

It is reported that approximately 8% of girls and 2% of boys are more likely to suffer with UTI in their childhood². *Escherichia coli* is a uropathogenic organism which plays a key role in causing UTI. *E. coli* stimulates the epithelial cells of urinary tract and secretion of Interleukin (IL-8)³.

Symptoms of this disease in infancy are frequently unclear like refusing of feeding, jaundice as well as failure of weight gain⁴. Generally, the identification of urinary tract infection depends on urine culture results, occurrence of leukocytes and bacteria in the urine. Moreover, getting a urine sample without any contamination is often difficult. Therefore, an alternative and efficient procedure is required to diagnose this infectious ailment.

Interleukin 8 (IL-8) which belongs to the

cytokine family, possesses a key role in chemotaxis and the activation of leukocytes and leads towards inflammation at the site of the infection⁵. Accordingly, it remains stable in the urine and can be employed to diagnose UTI without depending on the terms of sampling and transferring of samples⁶.

Therefore, a study was conducted in order to investigate the role of IL-8 in the diagnosis as well as differentiation between pyelonephritis and cystitis. This experiment was performed among 86 children with the age of one month to 14 years having symptoms of suspected urinary tract infections. Among these children 16 boys and 70 girls were involved⁷.

During this experiment, dysuria was found to be the most general symptom in the 2 groups. In cases very suspicious UTI, the existence of IL-8 assists to decide about treatment of UTI. Additionally, IL-8 can be a reliable marker to distinguish the involvement of upper urinary tract and lower urinary tract. Moreover, measurement of cytokines requires only few hours and it is simple and non-invasive as well.

Key words:

Urinary tract infection chronic renal failure

jaundice cytokines dysuria

inflammation antibiotic resistance

Considering the results, the mean IL-8/Cr to identify pyelonephritis in level 7 has the sensitivity of 66% and the specificity of 72% and even the increased IL-8 after the initial experimental treatment can be a sign for the continued inflammation or antibiotic resistance. In a nutshell, serum IL-8 is a reliable tool which helps in the diagnosis of UTI. Hence, scientists suggested thorough investigation in order to understand the detailed mechanism involved in this process.

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