

Genitourinary Tract Disease -UTI

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INTRODUCTION

Urinary tract infection (UTI) is the most common genitourinary tract disease and the second most common bacterial infection following respiratory tract infections, in childhood. Gram negative bacteria are the most common cause of urinary tract infection that may affect the upper or lower urinary tract. Urinary tract infection occurs in 3-5% girls and 1% boys [2]. Studies have shown that the prevalence of UTI is greater than that of bacterial meningitis, bacterial pneumonia, middle ear infection and bacteremia. During infancy, 5% of febrile girls and 20% of uncircumcised febrile boys are presented with UTI. Additionally, 80-90% of UTI are characterized by Escherichia Coli infection. Vitamin D plays an important role in regulating inflammation, chemokine production and has been long known for its antimicrobial properties. Vitamin D receptors are widely expressed in immune cells such as B and T lymphocytes, monocytes, and dendritic cells where, it exerts immune modulatory effects. Circulating vitamin D has a direct effect on macrophages, enhancing its oxidative ability, including the synthesis and production of cytokines, phosphatase, and hydrogen peroxide. Vitamin D also accelerates neutrophil motility and phagocytic activity. During bacterial infections, macrophages convert 25-hydroxyvitamin D (25OHD) into circulating vitamin D₃ [1, 25(OH)2D₃], where it modulates the gene expression of antimicrobial peptides. These peptides play a key role in the body's defense against the microbial pathogens. It enhances both the immune response and the clearance of bacteria. Several studies have revealed a link between vitamin D deficiency and urinary tract infections.

SYMPTOMS

Urinary tract infections don't always cause signs and symptoms, but Once they do they'll include:

- A strong, persistent urge to urinate
- A burning sensation when urinating
- Passing frequent, small amounts of urine
- Urine that appears cloudy

- Urine that appears red, bright pink or cola-coloured – a symbol of blood within the urine
- Strong-smelling urine
- Pelvic pain, in women – especially within the center of the pelvis and round the area of the pubis [3].

TREATMENT

The prime step in the treatment of bacterial UTI is treating patients with an effective antibiotic. However, the selection of the appropriate antibiotic is a big concern when treatment is to be given in primary health care (PHC) before isolating the causative agent and performing the test of sensitivity. Wide-spectrum antibiotics are commonly indicated to treat UTIs when, instead, a narrow-spectrum antibiotic could be sufficient for an efficient treatment. In this scenario, after “blanket” use of antibiotics, resistance to antibiotics has emerged as a serious concern within the world in recent years [4]

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