

Evaluation and Management of Urinary Tract Infections as a Medical Emergency

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One of the most commonly nephrology emergency department (ED) procedures is the Urinary Tract Infection (UTI) Assessment and Management in pregnant women and people with immunodeficiency, UTI involves 150 million people in a year [1]. Although seen in both sexes, it is more likely to occur in female [2] and includes a range of diseases such as uncomplicated cystitis, pyelonephritis, or even septic shock. Evaluation and management of urinary tract infections in the emergency department depends on the severity of the disease, the hemodynamic status of the patient and the underlying diseases. Although definitive diagnosis cannot be made for these patients, but dysuria, urinary frequency, urinary urgency, if patient does not have vaginal discharge can indicate the severity and urinary tract infection that helps diagnose these patients.

Many of these patients are treated as outpatients, but millions of antibiotic prescriptions are being prescribed annually for therapies that increase antibiotic resistance among urinary bacteria, making treatment decisions more complicated. The treatment of this spectrum has not significantly improved in recent years and does not prevent relapse of the disease, such as acute cystitis, and it seems that more innovative approaches, such as the development of antiviral treatments, are necessary for this group.

Due to the wide range of organisms that can cause UTI and the unavoidable nature of some risk factors, such as urinary catheters, new interventions do not reduce the destructive effect of this infection on human health.

In recent decades, UTI diagnosis is focused on urine specimens with a sensitivity of 50 - 80% [3]. Massive mass spectroscopy, bacterial genome sequencing, and other tools are better for a more accurate diagnosis of UTIs at the right time, it may depend on a combination of The safety indicators and host metabolism and the diagnosis of the uropathogens and their components (DNA, protein, etc.) [4]. On the other hand, the rapid identification of the bacterial molecule (especially *E. coli*) at the substrain level and also predict the antibiotic resistance, may result in a more appropriate selection of antibiotics for treatment [5,6].

Diagnosis and treatment of urinary tract infection is very important, and it should have more satisfactory results, and even reduce the overall use of antibiotics. To meet this goal, there is a need for new approaches based on basic biological research.

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