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Abstract (publication only)

Management of urinary tract infection among patients with neurological bladder

A. Dinh*, A. Toumi, A. Descatha, J. Salomon, E. Ronco, C. Blanc, P. Denys, L. Bernard (Garches, FR)

Objectives: Urinary tract infections (UTI) among patients with neurological bladder continues to be an important cause of morbidity, including hospitalization. Optimal diagnosis and management are not well determined. We aimed to better describe them and analyze the outcome depending on the antimicrobial therapy.

Methods: The prospective study included all disabled patients with neurological bladder admitted in a French university reference center between 2006 and 2012 who developed febrile ($>38.0^{\circ}\text{C}$) UTI and receiving adapted antibiotic treatment. Clinical signs, results of urine bacterial analysis and culture, biological parameters, antimicrobial treatment and outcome at month 1 after the end of antibiotic therapy were analyzed.

Results: 112 febrile UTI occurred among 94 patients with neurological bladder. In this specific population, we recruited 85 spinal cord injured patients (65 paraplegic and 20 tetraplegic), 16 patients with multiple sclerosis and 11 with severe brain injury. The median temperature was 38.8°C , median leucocytosis and C-reactive-protein were retrospectively 12 590/ml and 121 mg/L. Febrile UTI corresponded to 73 acute pyelonephritis, 26 acute prostatitis and 13 epididymitis. The most common bacteria isolated in the urines before initiation of therapy were *Escherichia coli* (39 %), *Pseudomonas aeruginosa* (13.5 %), *Klebsiella* spp. (10 %) and *Proteus* spp. (5.6 %). Blood cultures were positive in 17 cases (15%). Antimicrobial therapy was a combination of two antibiotics at the beginning in 69 cases (62 %) and a monotherapy in 43 (38 %). Median treatment duration was 20 days. Most common antibiotic prescribed were third generation cephalosporin (73.2 %), aminoglycosid (50.0 %) and fluoroquinolones (35.7 %). The outcome was favourable in 41% of case with monotherapy and 59% with initial antibiotic association ($p>0.05$, Fisher's exact test). Depending on treatment duration, favourable outcome occurred in 71.4% with a treatment of 10 days or less, 54.2% if the treatment was 10 to 15 days and 57,6% if the treatment duration was more than 15 days ($p>0,05$, Fisher's exact test)

Conclusion: Despite many limitations, long duration antibiotic treatment and initial association of two antibiotics were not found to improve the 1 month outcome of febrile UTI in patients with neurological bladder. UTI among patients with neurological bladder does not seem to need a stronger management when antimicrobial therapy is adapted to urine bacterial ecology