

URINARY TRACT INFECTIONS (UTIS) IN PATIENTS WITH ACUTE SPINAL CORD INJURY (SCI) IN SPINAL UNIT. CLINICAL AND URODYNAMIC CORRELATIONS

Aims of Study

Spinal Cord Injury (SCI) patients have a predisposition for urinary tract infections (UTIs) that represent an important cause of morbidity both in acute inpatient and long-term outpatient context. The aim of this study is to evaluate the incidence and characteristics of UTIs in an acute SCI population in our Spinal Unit and to identify possible clinical and urodynamic correlations that may address improvement of bladder management.

Methods

A retrospective survey was carried out on consecutive acute SCI patients admitted to our division within two years (March 2001-2003), provided a period of stay of at least two weeks. All the UTIs episodes that met the following criteria were enrolled: clinical symptoms of UTI with positive chemical, microscopic and microbiological urine findings. Asymptomatic bacteriuria was excluded even if treated with antibiotics in prevision of invasive diagnostic procedures. According to the frequency of infections we identified a higher frequency(HF) and a lower frequency(LF) group characterized respectively by a period between two infections longer or shorter than 39 days (the median interval in our sample). For each group the following variables were analysed: age, gender, neurological level and severity of the lesion according to ASIA, time between diagnosis and admission (TBDA), time with an indwelling urethral catheter (TIUC), pathogens and their pattern of antibiotic resistance, bladder management, bladder function by urodynamic examination, bladder balance and urological complications.

Results

We recorded 82 UTIs in 29 patients (25 male and 4 female). In 4 patients no UTI was documented. The incidence was 2.8 UTIs/patient/year. The mean age was similar between the two groups (44 vs. 46 years), as well as sex ratio (11/12 vs 11/13). The mean number of infections in patients of the HF group was 4.5/patient (median 3), while in the LF group it was 2.0/patient (median 2). The 80% of patients with A grade of AIS were in the HF group as well as those with cervical lesion (78.5%). The average period between diagnosis of SCI and admission to our Spinal Unit was longer in HF group (53 vs 24; median 41 vs 11 days; $p=0.07$) as well as the mean TIUC (42 vs 32; median 25 vs 10 days; $p=0.08$) but this correlation was more evident for TBDA shorter than 40 days. Multiresistant germs were significantly more frequent in the HF group ($p<0.005$). No correlation with frequency of infections was found for the bladder balance, bladder management and urodynamic pattern, excepted for bladder areflexia that was associated with HF in 77% of cases. Complications were recorded in 50% of patients in HF group versus 7.7% in LF ($p< 0.001$). The main recorded complications were bladder stones, diverticulum, pressure sores and hydronephrosis. In 2 patients more than one complication occurred.

Conclusions

Despite improved methods of treatment, urinary tract infections still represent an important source of morbidity in Spinal Cord Injured patients. The identification of risk factors for urinary infection in Spinal Unit acute setting can help to reduce the incidence of UTIs and associated morbidity. Our study suggests that in SCI patients receiving a standard bladder management completeness of spinal cord lesion, longer TBDA, longer TIUC and occurrence of complications seems to be correlated to higher frequency of UTIs.