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Journal of the Medical Association of Thailand, Vol 96, No 1

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Epidemiology of Urinary Tract Infection among Spinal Cord Injured Patients in Rehabilitation Ward at Siriraj Hospital

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Abstract

Background and Objective: A prophylactic antibiotic in retrograde investigations (Ix) such as an urodynamic study was suggested by the European Association of Urology in order to prevent urinary tract infection (UTI) in the neurogenic bladder. However, finding an appropriate antibiotic is questionable since bacterial types and their sensitivities are variable in different settings. Therefore, the present study was aimed to find out the epidemiology of UTI in spinal cord injured (SCI) patients within the rehabilitation ward at Siriraj Hospital.

Material and Method: A retrospective chart review of 100 SCI patients admitted to the rehabilitation ward between 2006 and 2010 was done. Symptomatic UTI events, urine cultures, and sensitivities (C/S) were reviewed. Demographic data and possible UTI-associated factors were collected and examined the association with the occurrence of UTI.

Results: There were 64 males and 36 females with a mean age of 42.9 (SD 15.8) years. Most of them (77%) were injured at cervical and thoracic spinal cords. Forty-five patients had 57 UTI episodes. *Escherichia coli* was the most common isolated pathogen (50%), followed by *Pseudomonas aeruginosa* (17.3%), and *Enterococcus faecalis* (7.7%). The top three most sensitive antibiotics were imipenem, amikacin, and piperacillin/tazobactam. Unfortunately, gentamicin, ceftriaxone, and ciprofloxacin, which were frequently used as a prophylactic antibiotic, had the efficacy for only 51.9%, 38.5%, and 28.8% of pathogens respectively. The mean length of stay of patients with UTI was far greater than non-UTI patients, 45.5 (SD 24.4) versus 30.4 (SD 14.8) days ($p = 0.001$). Vesicoureteric reflux (VUR) (OR 21.2, 95% CI 2.1 to 214.2) and increased intravesical pressure at storage phase (OR 1.1, 95% CI 1.004-1.113) were significant risk factors for post investigation UTI.

Conclusion: UTI was commonly observed in SCI patients within the rehabilitation ward. The most common uropathogen was *Escherichia coli*. Therefore, a prophylactic antibiotic such as amikacin should be prescribed in patients with VUR and increased intravesical pressure at storage phase.

Keywords: Urinary tract infection, Spinal cord injury, Epidemiology, Rehabilitation, Antibiotic, Vesicoureteric reflux

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