The Incidence of Urinary Tract Infection in Patients with a Chronic Indwelling Urethral Foley Catheter

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ABSTRACT

Objective: To analyze the incidence of urinary tract infection (UTI) in patients with a chronic indwelling urethral Foley catheter in a chronic ward of a local hospital. Materials and Methods: Patients admitted to the chronic ward were retrospectively included. A period of one month's observation and review of the charts were performed, and incidence of UTI was analyzed. Results: A total of 78 patients were included. The mean age of the patients was 75.9 years (range 33-91 years). Twenty three patients (29%) had an indwelling urethral Foley catheter. Sixteen of the 23 patients were older than 71 years of age. The length of hospital stay ranged from 20 to 61 days (mean 45.6 days). The overall incidence of UTI was 32% (25/78); 13 (52%) of the patients with UTI had an indwelling Foley catheter, comprising 57% of the patients with chronic indwelling Foley catheters. Conclusions: A chronic indwelling Foley catheter in patients in a chronic ward attributed to a high incidence of UTI that deserves active management.

INTRODUCTION

Urethral Foley catheterization may cause many clinical problems. The literature reports that bacteriuria occurs within 30 days with closed systems [1]. In the United States, about 1.5 million infections occur in long-term care facilities. Most sites of infection are the urinary tract and are associated with the presence of an indwelling urethral Foley catheter [2].

MATERIALS AND METHODS

Between January and February 2000, the patients admitted to a chronic ward of a local hospital in Chia-yi were enrolled for observation of the incidence of urinary tract infection (UTI). The clinical data were collected by chart review. UTI was defined as urine cultures with positive laboratory reports and untimicrobials use prescribed by physicians. An elevated leukocyte count in urinalysis solely would not be considered as UTI.

RESULTS

A total of 78 patients were included for study in this clinical observation. Their age ranged from 33 to 91 years (mean 75.9 years). More than 90% of the patients were older than 60 years and 16 were older than 71 years. Twenty nine percent (23/78) had an indwelling urethral Foley catheter. The incidence of indwelling urethral Foley catheter was 50% in patients >90 years old, 33.3% in patients between 80 and 89 years old, and 32.7% in patients between 70 and 79 years old. The length of hospital stay ranged from 20 to 61 days. More than 60% of the patients stayed for longer than 30 days. When grouped into a period of 10 days, most of the patients(26/78) were at the 51 to 60 days period of hospital stay.

Twenty five (33%) patients had documented UTI. Among them, 52% (13/25) had an indwelling urethral Foley catheter. The incidence of UTI in patients with an indwelling urethral Foley catheter was 57%. No sepsis or mortality was noted during the period of observation.

DISCUSSION

The incidence of UTI has been reported to be 16% by Tambyah and Maki in a prospective study of 1,497 catheterized patients who were admitted to a university hospital. More than 90% of the infected patients were asymptomatic. About 52% of the infections were detected by urine cultures [3]. Our observation of the incidence of urethral Foley catheter associated UTI was similar to this study. Tambyah and Maki concluded that catheter associated UTI was a major reservoir of antibiotic-resistant organisms in the hospital. Most of the infections were asymptomatic and rarely caused bloodstream infection. Symptoms alone were not predictive for the diagnosis of catheter associated UTI [3].

UTI is the most frequent bacterial infection and the most common source of bacteremia in older adults [4]. Mouton et al proposed factors that made older adults vulnerable to UTI, including the use of urethral catheters and other neuropathic bladder problems with increased residual urine. The classic clinical symptoms and signs of UTI, such as dysuria, fever, urinary frequency and suprapubic discomfort or tenderness, might not be present in older adults [4].

Urethral Foley catheters are commonly used in admitted patients. Forty percent of nosocomial infection episodes occur in the urinary tract and greater than 80% of these infections are associated with an indwelling urethral Foley catheter [5]. If Foley catheters were cared for with proper sterile technique, a low incidence of catheter associated UTI might occur during the first 3 to 5 days [5]. In this short-term observation, the incidence of UTI was not as high as that reported in the literature, possibly due to careful Foley catheter management.

How to prevent Foley catheter associated UTI? There were some strong recommendations made by the Centers for Disease Control and Prevention of the United States in 1981. Those recommendations were: catheterizing only when necessary, educating personnel in correct techniques of catheter insertion and care, emphasizing hand-washing, inserting a catheter using aseptic technique and sterile equipment, securing the catheter properly, maintaining closed sterile drainage, ob-

taining urine specimens aseptically and maintaining unobstructed urine flow [6].

This observation has some limitations. A one month period of observation might not be "chronic" enough and urodynamic study was not available for all of the patients.

CONCLUSION

This clinical observation found a high incidence of chronic indwelling urethral Foley catheter related UTI in patients staying in a chronic ward. Careful management of the chronic indwelling Foley catheter is important in elderly patients.

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