Catheter-Associated Urinary Tract Infection Prevention in the Oncology Population: An Evidence-Based Approach

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Urinary catheters have been attributed to almost half of all healthcare-associated infections (HAIs) (Centers for Disease Control and Prevention [CDC], 2010). A urinary tract infection (UTI) is an infection of the kidney, ureter, bladder, or urethra (Balentine, 2013). UTIs account for 40% of all HAIs (Klevens et al, 2008). Among UTIs acquired in the hospital, about 80% are associated with an indwelling urinary catheter (Saint & Chenoweth, 2003). An estimated 12%–25% of hospitalized patients receive this type of catheter at some point during their hospital stay (Saint et al., 2000). A direct positive relationship has been established between length of catheterization and the risk of developing a UTI. Therefore, catheters should only be used for appropriate indications and should be removed as soon as they are no longer needed (Lo et al., 2008).

Starting in 2008, the Centers for Medicare and Medicaid Services (2007) listed catheter-associated UTIs (CAUTIs) as a preventable hospital-acquired complication. As part of the 2013 National Patient Safety Goals, the Joint Commission stated that organizations were to implement an evidence-based practice to prevent CAUTIs (Joint Commission, 2012). In March 2012, a task force at Memorial Sloan-Kettering Cancer Center (MSKCC) assembled to address that issue. The task force included clinical nurse specialists, infection control nurses, and front-line inpatient RNs to establish a program for the prevention of CAUTIs, tailoring it to the specific needs of the oncology population. The task force met on a monthly basis, with a roll-out date of October 2012 for the revised evidence-based policies and education initiative.

Background and Significance

A literature review including the search terms CAUTI, indwelling Foley catheter, and healthcare-associated infections, was conducted through PubMed, Cochrane, and CINAHL® to include research studies and guidelines from 2000 to present. The literature contained limited prospective studies on infections and indwelling catheters, but did reference the guidelines set forth by the CDC, the Society for Healthcare Epidemiology of America (SHEA), and the Institute for Healthcare Improvement ([IHI], 2011).

In a retrospective cohort study conducted by Wald, Ma, Bratzler, and Kramer (2008), Medicare inpatients (N = 35,904) undergoing major surgery (e.g., coronary bypass and other open-chest cardiac operations, vascular surgery, general abdominal colorectal surgery, hip or knee total joint arthroscopy) were analyzed from 2,965 acute care hospitals in the United States. The results of the study suggested an association between duration of catheterization and the development of a UTI. In the study, patients undergoing major operations with post-operative catheterizations for longer than two days were more likely to experience adverse outcomes (Wald et al., 2008).

- Perioperative use for a surgical procedure
- Surgical procedures within 24–48 hours
- Surgery of the pelvic structures in the immediate postoperative period
- Urine output monitoring in patients who are critically ill and/or hemodynamically unstable
- Management of acute urinary retention (as evidenced by bladder scan) and urinary obstruction
- Assistance in stage III or IV pressure ulcer healing if patient is incontinent
- Improving comfort when the patient’s terminal condition has become advanced, progressive, and incurable
- If patient is experiencing sedation, paralysis, or a decreased level of consciousness
- If patient requires prolonged immobilization
- When long-term catheterization (more than 28 days) has already been initiated

FIGURE 1. Criteria for Urinary Catheter Insertion and Continued Need

Note. Based on information from Gould et al., 2010.