Clinical Practice Guidelines

Care of the Patient with an Indwelling Catheter
Introduction

Nurses have long provided care to the catheterized patient. Much of this care has been based on individual company policy, anecdotal data, or insurance-allowable time frames. To provide the best care possible for each patient, the care must be grounded in scientific-based research.

The Guideline for Prevention of Catheter-Associated Urinary Tract Infections (CAUTI) is a governmental policy that can be found at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3362394/. It provides a rating of recommendations for infection prevention based on an extensive review of scientific literature. Recommendations are also found in all CAUTI guidelines. Below is the summary:

Category I: Strongly Recommended for Adoption
1. Educate staff on proper catheter insertion/care.
2. Utilize catheter only when necessary.
3. Utilize strict hand washing principles.
4. Utilize sterile technique with catheter insertion.
5. Secure catheter properly.
6. Maintain closed sterile system.
7. Obtain urine samples aseptically.
8. Maintain free flow to urine (no obstruction).

Category II. Moderately Recommended for Adoption
1. Re-educate staff periodically.
2. Use smallest french size catheter.
3. Avoid irrigation unless needed to relieve/prevent obstruction.
4. Do not perform daily meatal care as described in texts.
5. Do not change catheters at arbitrary fixed intervals.

Category III. Weakly Recommended for Adoption
1. Consider alternatives to indwelling urethral catheters.
2. Replace the collecting system when sterile closed drainage has been contaminated.
3. Separate infected from uninfected catheterized patients.
4. Avoid routine bacteriologic monitoring.

Education of Patients and Families on the Care of Indwelling Catheters

- A review of recently published literature, shows these recommendations remain acceptable. Hand washing is the most important step in prevention of infection. Health care personnel should use good hand washing principles
before and after direct patient care. Patient education is very important and should be reinforced at each encounter.

- Daily meatal care with an antiseptic is not necessary. The perianal area and the urethral meatus should be cleaned with soap and water or a perineal cleanser routinely, avoiding frequent and vigorous cleansing of the area.
- Adequate fluid intake is necessary. 30 ml/kg of body weight is currently recommended as adequate intake. This should allow for a daily urinary output of 1,500-2,000 ml (1-4 ml/kg/24 hour), unless individual patient health care concerns dictate otherwise. This output serves to keep urine dilute and will help decrease catheter encrustations.
- Maintain a closed system whenever possible. If the patient changes from a leg bag to a larger overnight bag, careful hand washing must be done, and cleaning the contact ports with an antiseptic such as alcohol is advised.
- There is no good research to support disinfection of the urinary drainage bag. CAUTI guidelines support the use of a closed system and discourages disconnecting the catheter from the drainage bag.
- The bag should be emptied when 1/2 to 2/3 full or every 3 to 6 hours. This helps to prevent trauma/traction on the urethra related to the weight of the bag.

**Nursing Considerations**

- Hand washing remains the primary infection control practice.
- No evidence supports rigid timing of catheter changing. Currently, the mainstay of practice is to change chronic catheters every 4 weeks; however, the catheter should be changed as needed. The frequency of catheter exchange should be based on clinical symptoms: catheter encrustations, leakage, bleeding, catheter-associated UTIs, etc. This should be individually tailored and may be necessary every 3 to 6 weeks.
- The size of the catheter should be as small as possible. This reduces urethral trauma, and allows for adequate drainage of the peri-urethral glands.
- Use sterile water for balloon inflation per manufacturer-suggested guidelines. Typically a 5 ml balloon is inflated with 10 ml water to allow symmetrical filling of the catheter balloon (this allows better drainage of the bladder). Do not use saline which can crystallize and make it difficult to remove. Do not use air which can allow it to “float” in the bladder and result in inadequate drainage. Silicone catheters may lose fluid in the balloon over time due to permeability; therefore, assessing balloon volume is recommended every 2 weeks and as clinically indicated. Add sterile water as needed.
- Secure the catheter to either the patient’s thigh or the abdomen. This helps to decrease the risk of bleeding, trauma, meatal necrosis, and bladder spasms from pressure and traction.
- No evidence supports the common practice of advising patients to take supplemental vitamin C, cranberry pills, or cranberry juice. The need for adequate hydration with resultant adequate urinary output helps to decrease the encrustations of the catheters, stone development, and catheter-associated UTIs.
- The routine collection of urine cultures is not recommended. If the patient has a catheter-associated UTI, the old catheter should be removed and the specimen should be collected using sterile technique when the new catheter is placed.
• Bacterial colonization of the urethra and the bladder is inevitable. This will result in expected “urine dip” reactivity for nitrite and possibly leukocyte reactivity. Treatment of a “UTI” is not indicated based on the “urine dip-stick” reactivity. Current studies state that unless there are >10 WBCs/HPF or the patient is having clinical symptoms of a catheter-associated UTI, they should not be treated.
• Routine irrigation of long-term catheters is not indicated.

References
Geng V. Evidence-based Guidelines for Best Practice in Urological Health Care Catheterisation Indwelling catheters in adults Urethral and Suprapubic. EAU guidelines office; 2012.


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