O3_A2_A_Scientific Evidence

PERFORMING URETHROVESICAL CATHETERIZATION (FOLEY PROBE) IN FEMALE PATIENTS

Q1	**When is urinary catheterization necessary in patients hospitalized in a palliative settings/facility? Catheter indications**
Patients	Patients elderly and/or frail and/or end of life indications in a palliative facility Frail, aged, end of life adults Children in a palliative facility
Intervention	**Urinary catheterization**
Comparator	Conservative care of any kind or Other alternative methods of urinary drainage Avoid use of urinary catheters
Outcome	Core outcome measures: Catheter-associated urinary tract infection; Urinary tract infection; Mortality (any cause); Quality of life.
Methodology	Systematic reviews Randomized controlled trials Cohort studies Registry studies
Extra	Planned subgroup analysis E.g. 1. Diabetes status

Studies:
Three international consensus based on literature review by experts are included [1-3].

Indications [1,2]:

- Urine output measurement in critically ill patients.
- During/ following surgery to assess fluid status.
- Management of urinary retention with or without bladder outlet obstruction.
- Patients with neurogenic bladder, immobilized or who will undergo intravesical pharmacologic therapy (eg, bladder cancer).
- Management of open wounds located in the sacral or perineal regions in patients who are incontinent.
- Improved patient comfort for end of life care.
- Management of patients with urinary incontinence following failure of conservative, behavioral, pharmacologic and surgical therapy.

Conclusions:
We endorse the recommendations of these consensuses.

References:

1. Meedings J, Saint S, Fowler KE et al. The Ann Arbor Criteria for Appropriate Urinary Catheter Use in Hospitalized Medical Patients: Results Obtained by Using the RAND/UCLA Appropriateness Method. Ann Intern Med 2015; 162:S1.
2. Abrams P, Andersson KE, Birder L et al. Fourth International Consultation on Incontinence Recommendations of the International Scientific Committee: Evaluation and treatment of urinary incontinence, pelvic organ prolapse, and fecal incontinence. Neurourol Urodyn 2010; 29:213

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3. Gould CV, Umscheid CA, Agarwal RK, et al. Guideline for the prevention of catheter-associated urinary tract infections 2008. Department of Health and Human Services. Centers for Disease Control and Prevention.

Q2	**What type of catheter is needed for urinary catheterization in patients hospitalized in a palliative settings/facility? Catheter selection**
Patients	Patients elderly and/or frail and/or end of life indications in a palliative facility Frail, aged, end of life adults
Intervention	
Comparator	Indwelling urethral catheter Intermittent urethral catheter Suprapubic catheter Condom
Outcome	Core outcome measures: Catheter-associated urinary tract infection; Quality of life.
Methodology	Systematic reviews Randomized controlled trials Cohort studies Registry studies
Extra	Planned subgroup analysis E.g. 1. Diabetes status

Studies:

- One Cochrane review comparing the types of indwelling urinary catheterization for short-term (up to 14 days) use [1].
- Three expert consensus recommendations based on literature review of clinical trials [2,3]

Indications:

-The choice of catheter is made according to the problem it's addressing (urinary retention, urine volume measurements, comfort for end-of-life care, perioperative setting etc.).

-The choices are divided into internal (indwelling urethral catheter, intermittent urethral catheter), external (condom) and suprapubic catheter.

Indication	**Indwelling**	**Intermittent**	**Suprapubic**	**Condom**
Urinary retention (acute/chronic)	Yes[1-3]	Yes[2,3]	Yes[2,3]	No[3]
Incontinence	No[2,3]*	No[2,3]*	No[2,3]	Yes[3]
Urine volume measurements	Yes[1-3]	No[3]	No[2,3]	No[3]
Perioperative use	Yes[1,2]	Yes[2,3]	Yes[2,3]	No[2,3]
Provide comfort	Yes[1-3]	Unknown[3]	Yes[3]	Yes[3]
Assist healing of wounds	Yes[1-3]	Yes[2,3]	Yes[2]	Yes[3]
Neurogenic bladder**	Yes[2,3]	Yes[2,3]	Yes[2,3]	Yes[2,3]

*Catheter use must not substitute appropriate nursing care, especially if skin alterations are associated, except for stage III-IV open pressure ulcer, when indwelling, intermittent catheters or condom may be used [3,4].

**There are no trials comparing the methods between them.

However, Gould et al [2] suggests using alternative methods to indwelling catheter whenever possible:

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1. Consider using external catheters as an alternative to indwelling urethral catheters in patients without urinary retention or bladder outlet obstruction. (Category II)
2. Consider alternatives to chronic indwelling catheters, such as intermittent catheterization, in spinal cord injury patients. (Category II)
3. Intermittent catheterization is preferable to indwelling urethral or suprapubic catheters in patients with bladder emptying dysfunction. (Category II)
4. The benefit of using a urethral stent as an alternative to an indwelling catheter in patients with bladder outlet obstruction is unknown. (No recommendation/unresolved issue)
5. The benefits of suprapubic catheters as an alternative to indwelling urethral catheters for long-term use is unknown. (No recommendation/unresolved issue)

Conclusions:
We endorse the recommendations of the consensus.

References:
1. Lam, T. B. L., Omar, M. I. mran, Fisher, E., Gillies, K. & MacLennan, S. Types of indwelling urethral catheters for short-term catheterisation in hospitalised adults. *Cochrane database Syst. Rev.* **9,** CD004013 (2014).
2. Gould CV, Umscheid CA, Agarwal RK, et al. Guideline for the prevention of catheter-associated urinary tract infections 2008. Department of Health and Human Services. Centers for Disease Control and Prevention.
3. Meedings J, Saint S, Fowler KE et al. The Ann Arbor Criteria for Appropriate Urinary Catheter Use in Hospitalized Medical Patients: Results Obtained by Using the RAND/UCLA Appropriateness Method. Ann Intern Med 2015; 162:S1.
4. Abrams P, Andersson KE, Birder L, Brubaker L, Cardozo L, Chapple C, et al. Fourth International Consultation on Incontinence Recommendations of the International Scientific Committee: Evaluation and Treatment of Urinary Incontinence, Pelvic Organ Prolapse, and Fecal Incontinence. Neurourol Urodyn. 2010;29:213–40.

Q3	**What type of technique should be used for urinary catheterization in patients hospitalized in a palliative settings/facility in order to decrease the infections rate associated? Catheter insertion**
Patients	Patients elderly and/or frail and/or end of life indications in a palliative facility Frail, aged, end of life adults
Intervention	
Comparator	Appropriate hand hygiene Choice of catheter Aseptic techniques/sterile equipment Barrier precautions Antiseptic meatal cleaning
Outcome	Core outcome measures: Catheter-associated urinary tract infection; Quality of life.
Methodology	Systematic reviews Randomized controlled trials Cohort studies Registry studies
Extra	Planned subgroup analysis E.g. 1. Diabetes status

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Studies:

- A Cochrane review on different types of indwelling catheters regarding UTI [1].
- Two international expert consensus recommendations based on literature review of clinical trials [2,3].

Recommendations:

A. Perform hand hygiene immediately before and after insertion or any manipulation of the catheter device or site. (Category IB)

B. Insert urinary catheters using aseptic technique and sterile equipment. (Category IB)

1. Use sterile gloves, drape, sponges, an appropriate antiseptic or sterile solution for periurethral cleaning, and a single-use packet of lubricant jelly for insertion. (Category IB)

2. Routine use of antiseptic lubricants is not necessary. (Category II)

3. Further research is needed on the use of antiseptic solutions vs. sterile water or saline for periurethral cleaning prior to catheter insertion. (No recommendation/unresolved issue)

4. A Cochrane review on various methods to prevent urinary infection found no evidence, which supports the use of antiseptic-coated silver alloy-coated catheters in reducing symptomatic CAUTI. There was some evidence, which suggested that nitrofurazone (antimicrobial-impregnated) catheters reduced symptomatic CAUTI, but the margin of benefit was small and such catheters were more uncomfortable for patients [1].

C. In the non-acute care setting, clean technique for intermittent catheterization is an acceptable and more practical alternative to sterile technique for patients requiring chronic intermittent catheterization. (Category IA) The optimal cleaning and storage methods for catheters is still unknown.

D. Secure indwelling catheters after insertion to prevent movement and urethral traction. (Category IB)

E. Use the smallest bore catheter possible to minimize bladder neck and urethral trauma. (Category II)

F. Intermittent catheterization should be performed at regular intervals (Category IB), using ultrasound to assess urine volume (Category II).

Conclusions:

We endorse the recommendations of the consensus.

References:

1. Lam, T. B. L., Omar, M. I. mran, Fisher, E., Gillies, K. & MacLennan, S. Types of indwelling urethral catheters for short-term catheterisation in hospitalised adults. *Cochrane database Syst. Rev.* **9,** CD004013 (2014).
2. Gould CV, Umscheid CA, Agarwal RK, et al. Guideline for the prevention of catheter-associated urinary tract infections 2008. Department of Health and Human Services. Centers for Disease Control and Prevention.
3. Lockwood, C. *et al.* Management of short-term indwelling urethral catheters to prevent urinary tract infections. *Best Pract. evidence-based Inf. sheets Heal. Prof.* **14,** 271–291 (2004).

Q4	**What type of techniques should be used for maintenance of urinary catheterization in patients hospitalized in a palliative settings/facility? Catheter maintenance**
Patients	Patients elderly and/or frail and/or end of life indications in a palliative facility Frail, aged, end of life adults
Intervention	
Comparator	Appropriate hand hygiene Secure catheter

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	Closed drainage system Obtain urine samples aseptically Replace system if breaks in asepsis Avoid irrigation to prevent infection
Outcome	Core outcome measures: Catheter-associated urinary tract infection; Quality of life.
Methodology	Systematic reviews Randomized controlled trials Cohort studies Registry studies
Extra	Planned subgroup analysis E.g. 1. Diabetes status

Studies:
- Two international consensus based on literature review by experts are included [1,2].

Recommendations:
A. Following aseptic insertion of the urinary catheter, maintain a closed drainage system (Category IB)

1. If breaks in aseptic technique, disconnection, or leakage occur, replace the catheter and collecting system using aseptic technique and sterile equipment. (Category IB)
2. Consider using urinary catheter systems with pre-connected, sealed catheter tubing junctions. (Category II)

B. Maintain unobstructed urine flow. (Category IB)

1. Keep the catheter and collecting tube free from kinking. (Category IB)
2. Keep the collecting bag below the level of the bladder at all times. Do not rest the bag on the floor. (Category IB)
3. Empty the collecting bag regularly using a separate, clean collecting container for each patient. (Category IB)

C. Use gloves and gown as appropriate, during any manipulation of the catheter or collecting system. (Category IB)
D. Complex urinary drainage systems are not necessary for routine use.(Category II)
E. Changing indwelling catheters or drainage bags should be done based on clinical indications. (Category II)
F. Do not use systemic antimicrobials routinely to prevent CAUTI, unless there is a clear indication for it. (Category IB)
G. Routine hygiene (not antiseptics) is enough to clean the periurethral area. (Category IB)
H. Unless obstruction is anticipated bladder irrigation is not recommended. (Category II)

1. If obstruction is anticipated, closed continuous irrigation is suggested to prevent obstruction. (Category II)

I. Routine irrigation of the bladder with antimicrobials or instillation of antiseptic or antimicrobial solutions into urinary drainage bags is not recommended. (Category II)
J. Clamping indwelling catheters prior to removal is not necessary. (Category II)

Conclusions:
We endorse the recommendations of the consensus.

References:

Erasmus+

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1. Gould CV, Umscheid CA, Agarwal RK, et al. Guideline for the prevention of catheter-associated urinary tract infections 2008. Department of Health and Human Services. Centers for Disease Control and Prevention.
2. Lockwood, C. *et al.* Management of short-term indwelling urethral catheters to prevent urinary tract infections. *Best Pract. evidence-based Inf. sheets Heal. Prof.* **14,** 271–291 (2004).

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