



Review

Local Anesthetic for Urinary Catheter Insertion: A Review of Clinical Effectiveness, Cost-Effectiveness, and Guidelines [Internet]

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Excerpt

Urethral catheterization is a common procedure used in the management and diagnosis of bladder dysfunction. A flexible plastic tube is inserted through the urethra to the bladder, which allows urine to drain freely or allows fluid to be added. Catheter material, duration of placement, diameter, or length can vary depending on the patient and medical purpose. Indwelling catheters remain in place for days to months after placement, and are commonly inserted by medical professionals. Intermittent (in-and-out) catheters are removed shortly after insertion and bladder clearing. They can be inserted multiple times each day in a non-medical setting by patients or caregivers, as well as medical professionals. A catheter may be used in a variety of contexts including patients recovering from surgery, or those with acute injuries or chronic illnesses that impair normal bladder function.

Catheterization is associated with pain and discomfort.¹ Specific information on the incidence of catheterization and related pain in Canada is limited. A report from England detected a catheterization prevalence of 0.141–0.146% in the community, which would represent approximately 50,000 individuals in Canada. This represents individuals with long-term indwelling catheters, and does not take into account individuals with catheters for short-term procedures. Another international study found catheter related bladder discomfort (CRBD) was experienced in 47% of patients who had catheters inserted during surgical recovery. Although some individuals do not experience significant pain associated with catheterization, and others note that the level of pain is typically low (e.g., below 30 mm on a visual analog scale [VAS] where 0 represents “no pain” and 100 represents “most possible pain”),² it is important to know the best way to manage catheterization pain for those who experience it.

When catheters are inserted, aqueous lubricants can be used to reduce the risk of pain and discomfort, urethral damage, and procedure-related infection according to national evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England. A lubricating gel containing local anesthetic, such as lidocaine, may provide additional pain reduction.³ There are several commercial products available, with concentrations of lidocaine ranging from 2 to 5% and the required time interval between instillation and catheterization (incubation times) varying from 5 to 25 minutes. In patients with an in-tact urethra, lidocaine hydrochloride gel is generally considered safe for use with few associated adverse effects.⁴ Manufacturers of several commercial brands warn that individuals with urethral lesions or injury are at risk for potential severe adverse effects due to systemic exposure.⁵

Although it is common practice in some jurisdictions to use local anesthesia to relieve pain during urinary catheterization, there has been a limited quantity of mixed evidence regarding the extent to which it reduces pain.⁶ This inconsistency in findings might reflect inconsistency in the way it is used, including varying dosages, urinary instillation versus application to the catheter, and insufficient wait-time for the drug to take effect. To address the inconsistency in previous studies, more information is

required to determine the extent to which local anesthesia improves outcomes for urinary catheterization. The purpose of this report is to summarize the information available about the clinical effectiveness, cost-effectiveness, and guidelines for the use of local anesthesia during urinary catheterization in adults.

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