Wellspect
A REAL DIFFERENCE

SCIENTIFIC REVIEW

Intermittent vs. Indwelling catheterization

Available clinical evidence supports the strategy to always consider intermittent catheterization as the first therapeutic choice, before considering the use of an indwelling catheter. Intermittent catheterization is the first therapeutic choice and is a safer bladder management method than both urethral and suprapubic indwelling catheters. Intermittent catheterization is central to reduce morbidity related to renal failure and neurogenic bladder dysfunction.

Intermittent catheterization is a type of continence management that allows normal bladder dynamics, and has very few contraindications.[1] Indwelling catheters involve more invasive placement, either through the abdominal wall (suprapubic indwelling) or through the urethra (urethral indwelling),[2-4] and has a constant in and out flow leaving a static bladder.

Catheter-associated urinary tract infections (UTI) is the most common complication of all catheterization.[1,3,5,6] The daily increase in UTI risk when using an indwelling catheter is approximately 5% and there is a 3-10% daily bacteriuria incidence.[2,5,6,7]

Intermittent catheters are reported to reduce the risk of infections as compared to indwelling catheters[5,6,8-10] and as an example a 20% reduction is reported after just short-term post-operative use.[11,12]

Recent research suggests a) that infection rates correlate with an occurrence of multidrug-resistant bacteria, and b) that that multidrug-resistant bacteria is more common among users of indwelling catheterization (suprapubic 3.3% and urethral 2.6%) than intermittent catheterization (0.7%).[13]

Other reported complications from catheterization are trauma,[1-3,14] catheter blockage[2,14] and recurrent bladder stones[15-18] whereof the two latter are mainly applicable for indwelling catheters. It has also been proposed that indwelling catheters are associated with bladder cancer.[2,19,20]

Guidelines in the literature identify intermittent catheterization as the first and preferred choice when possible, both for short and long-term bladder management, and it is recommended to completely avoid or minimize use and duration of indwelling catheters.e.g.[5,6,8,10,21-25]

The safety of suprapubic a placement of an indwelling catheter is debated but recently it has been concluded that it is not superior to the urethral route[3,4,8,26,27] and should only be considered for short-term use[5,22] when intermittent catheterization is not an option.

Urological complications related to bladder management method have been studied by several authors and intermittent catheterization have been found to reduce risk of upper urinary tract deterioration, enable faster return to normal voiding, shorten hospital stay after surgery, and to improve the possibility of renal recovery.[7,28-30]

It furthermore reduces the risk of bladder stones with approximately 20 times compared with indwelling catheter use.[3,15,16] In addition, intermittent catheterization, when practiced on demand only, appears to be best practice for bladder management in more general areas, such as women in labor with epidural[31] and management of post-operative urinary retention.[32] It might also be one of the solutions to the problem with indwelling catheter misuse. Inappropriate use of indwelling catheters has been reported to lie somewhere between 24-62%.[33]

Although there is a consensus that intermittent catheterization is a better treatment option than an indwelling catheter, it is sometimes still discarded due to the perception that it is an added burden for patients.[34]

It has however been shown that intermittent catheterization can be successfully taught to a very high proportion of patients (84%)[34] and has a high reported preference among users (97-99%).[11,35] Evidence suggests that patients given the chance would see the benefit, not the burden of intermittent catheter use.

Wellspect®
A REAL DIFFERENCE

REFERENCES

1. Vahr S, Cobussen-Boekhorst H, Eikenboom J, et al. Urethral intermittent in adults. Dilatation, urethral intermittent in adults. EAUN guideline 2013. EAUN Guideline
2. Geng V, Cobussen-Boekhorst H, Farrell J, et al. Catheterisation. Indwelling catheters in adults. Urethral and suprapubic. EAUN guideline 2012. EAUN Guideline
3. Hunter KF, Bharmal A, Moore KN. Long-term bladder drainage: Suprapubic catheter versus other methods: A scoping review. Neurourol Urodyn 2013;32(7):944-51. Abstract
4. Kidd EA, Stewart F, Kassis NC, et al. Urethral (indwelling or intermittent) or suprapubic routes for short-term catheterisation in hospitalised adults. *Cochrane Database Syst Rev.* 2015;12:Cd004203. Abstract
5. Hooton TM, Bradley SF, Cardenas DD, et al. Diagnosis, prevention, and treatment of catheter-associated urinary tract infection in adults: 2009 international clinical practice guidelines from the Infectious Disease Society of America. *Clin Infect Dis.* 2010;50(5):625-663. Abstract
6. Tenke P, Kovacs B, Bjerklund Johansen TE, et al. European and Asian guideline on management and prevention of catheter-associated urinary tract infections. Int J Antimicrob Agents 2008;31(Suppl 1):S68-78. Abstract
7. Dixon L, Dolan LM, Brown K, Hilton P. RCT of urethral versus suprapupic catheterization. Br J Nurs 2010;19(18):S7-13. Abstract
8. Tenke P, Köves B, Johansen TEB. An update on prevention and treatment of catheter-associated urinary tract infections. Curr Opin Infec Dis 2014;27(1):102-107. Abstract
9. Gormley EA. Urologic complications of the neurogenic bladder. Urol Clin N Am 2010;37:601-607. Abstract
10. Tambyah PA, Oon J. Catheter-associated urinary tract infection. Curr Opin Infect Dis 2012;25:365-370. Abstract
11. Hakvoort R, Nieuwkerk P, Burger M, et al. Patient preferences for clean intermittent catheterisation and transurethral indwelling catheterisation for treatment of abnormal post-void residual bladder volume after vaginal prolapse surgery. BJOG 2011;118:1324-1328. Abstract
12. Hakvoort RA, Thijs SD, Bouwmeester FW, et al. Comparing clean intermittent catheterisation and transurethral indwelling catheterisation for incomplete voiding after vaginal prolapse surgery: a multicentre randomised trial. BJOG 2011;118:1055-1060. Abstract
13. Kang MS, Lee BS, Lee HJ, et al. Prevalence of and Risk Factors for Multidrug-Resistant Bacteria in Urine Cultures of Spinal Cord Injury Patients. *Ann Rehabil Med.* 2015;39(5):686-695. Abstract
14. Guttmann L, Frankel H. The value of intermittent catheterisation in the early management of traumatic paraplegia and tetraplegia. *Paraplegia.* 1966;4(2):63-84. Abstract
15. Bartel P, Krebs J, Wollner J, et al. Bladder stones in patients with spinal cord injury: a long-term study. *Spinal Cord.* 2014;52(4):295-297. Abstract
16. Ord J, Lunn D, Reynard J. Bladder management and risk of bladder stone formation in spinal cord injured patients. J Urol 2003;170:1734-1737. Abstract
17. Weld KJ, Dmochowski RR. Effect of bladder management on urological complications in spinal cord injured patients. J Urol 2000;163:768-772. Abstract
18. Weld KJ, Graney MJ, Dmochowski RR. Differences in bladder compliance with time and associations of bladder management with compliance in spinal cord injured patients. J Urol 2000;163:1228-1233. Abstract
19. Massaro PA, Moore J, Rahmeh T, Morse MJ. Squamous cell carcinoma of the suprapubic tract: A rare presentation in patients with chronic indwelling urinary catheters. *Can Urol Assoc J.* 2014;8(7-8):E510-514. Abstract
20. Welk B, McIntyre A, Teasell R, et al. Bladder cancer in individuals with spinal cord injuries. Spinal Cord 2013;51(7):516-21. Abstract
21. Blok B, Pannek J, Castro-Diaz D, et al. Guidelines on Neuro-Urology. *EAU European Association of Urology.* 2015. EAU guideline
22. Gould CV, Umscheid CA, Agarwal RK, et al. Healthcare Infection Control Practicies Advisory Committee. Guideline for prevention of catheter-associated urinary tract infections 2009. Infect Control Hosp Epidemiol 2010;31(4):319-26. Abstract
23. Tse V, King J, Dowling C, et al. Conjoint Urological Society of Australia and New Zealand (USANZ) and Urogynaecological Society of Australasia (UGSA) Guidelines on the management of adult non-neurogenic overactive bladder. *BJU Int.* 2016;117(1):34-47. Abstract
24. Goetz LL, Klausner AP. Strategies for prevention of urinary tract infections in neurogenic bladder dysfunction. *Phys Med Rehabil Clin N Am.* 2014;25(3):605-618, viii. Abstract
25. Kuo H-C, Chen S-L, Chou C-L, et al. Clinical guidelines for the diagnosis and management of neurogenic lower urinary tract dysfunction. *Tzu Chi Medical Journal.* 2014;26:103-113. Abstract
26. Lavelle RS, Coskun B, Bacsu CD, et al. Quality of life after suprapubic catheter placement in patients with neurogenic bladder conditions. *Neurourol Urodyn.* Jul 21 2015. Abstract
27. Katsumi HK, Kalinsvaart JF, Ronningen LD, Hovey RM. Urethral versus suprapubic catheter: choosing the best bladder management for male spinal cord injury patients with indwelling catheters. Spinal Cord 2010;48:325-329. Abstract
28. Zhang Z, Liao L. Risk factors predicting upper urinary tract deterioration in patients with spinal cord injury: a prospective study. *Spinal Cord.* 2014;52(6):468-471. Abstract
29. Halleberg Nyman M, Gustafsson M, Langius-Eklof A, et al. Intermittent versus indwelling urinary catheterisation in hip surgery patients: a randomised controlled trial with cost-effectiveness analysis. Int J Nurs Stud. 2013;50(12):1589-1598. Abstract
30. Pettersson-Hammarstad K, Jonsson O, Berrum Svennung I, Karlsson AK. Impaired renal function in newly spinal cord injured patients improves in the chronic state-effect of clean intermittent catheterization? J Urol 2008;180:187-191. Abstract
31. Wilson BL, Passante T, Rauschenbach D, et al. Bladder Management With Epidural Anesthesia: A Randomized Controlled Trial. MCN Am J Matern Child Nurs. 2015;40:234-42. Abstract
32. Woodward S. Intermittent catheterisation for postoperative urinary retention. *Br J Nurs.* 2015;24(14):732. Abstract
33. Murphy C, Prieto J, Fader M. "It's easier to stick a tube in": a qualitative study to understand clinicians' individual decisions to place urinary catheters in acute medical care. *BMJ Qual Saf.* Jul 2015;24(7):444-450. Abstract
34. Parsons BA, Narshi A, Drake MJ. Success rates for learning intermittent self-catheterisation according to age and gender. Int Urol Nephrol 2012;44:1127-1131. Abstract
35. Yilmaz B, Akkoc Y, Alaca R, et al. Intermittent catheterization in patients with traumatic spinal cord injury: obstacles, worries, level of satisfaction. Spinal Cord. 2014;52(11):826-830. Abstract

Wellspect
A REAL DIFFERENCE

At Wellspect we develop innovative continence care solutions that change people's lives. We are committed to inspire our users to build self-confidence and independence as well as good health and well-being. We have been leading the industry for over 30 years with our product brands LoFric® and Navina™. We create reliable and user-friendly products for bladder and bowel management with as little environmental impact as possible. We passionately strive to become climate neutral and work closely together with users and healthcare professionals who constantly inspire us to improve our products and services in a sustainable way, now and for the future.

Wellspect. A Real Difference.

For more information about our products and our initiative
Advancing Continence Care Together (ACCT), please visit Wellspect.com.

Join the conversation on Facebook and Instagram.

wellspect.com

Wellspect HealthCare, Aminogatan 1, P.O. Box 14, SE-431 21 Mölndal, Sweden. Phone: +46 31 376 40 00.