



SPECIAL COMMUNICATION

Optimal Bladder Management Following Spinal Cord Injury: Evidence, Practice and a Cooperative Approach Driving Future Directions in Australia

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Abstract

We examined spinal cord injury (SCI) catheterization practices in Australia to understand practice patterns and consistency with research evidence. A national facilitated discussion forum was held during the annual Australian and New Zealand Spinal Cord Society conference attended by 66 conference delegates. Initially, presentations were given on the latest laboratory research examining bladder changes following SCI; an overview of evidence-based recommendations indicating that intermittent catheterization is best practice; and results of a single-center practice audit that demonstrated substantial delay in transition between acute SCI and intermittent catheterization. The ensuing discussion covered current catheterization practices in both inpatient SCI units and the community and highlighted gaps between evidence and practice, with considerable variation in practice between centers and settings. Reported challenges to implementing best practice included social, economic, and resource factors. A disconnect between hospital and community practice was also identified as an important barrier to long-term uptake of intermittent catheterization following acute SCI. The discussion identified 3 proposed activities: (1) explore current practice and bladder health following SCI in greater depth across SCI units and in local communities through audits and standardized biochemical analysis; (2) determine the behavioral drivers of current practice; and (3) develop a knowledge translation strategy to better align practice with current clinical practice guidelines.

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People with spinal cord injury (SCI) rank bladder management as one of their greatest long-term challenges.¹ Indeed, urinary tract infections (UTIs) have a substantial effect on quality of life and health care costs, being a frequent cause of re-presentation to emergency departments.^{2,3} Bladder catheterization practices following acute SCI also influence bladder health.⁴ Prolonged use of an indwelling catheter (IDC) increases the risk of UTIs and resulting readmissions

and health effects.^{5,6} Transitioning from IDC to intermittent catheterization (IC)—where the bladder is emptied at a specified frequency by inserting a catheter and then removing it after complete drainage—reduces the incidence of bladder problems such as UTIs.⁷ Therefore, IC is consistently recommended in clinical practice guidelines (CPGs).⁸⁻¹⁰ Despite evidence supporting early implementation of IC,¹¹ an audit of practice in one Australian SCI unit demonstrated substantial delays in transitioning from IDC to IC.^{3,12,13} A clinical audit of practice and UTI incidence is now underway in a second state; however, comparable data have not been systematically gathered across all Australian SCI units.

There is growing evidence that knowledge of current practice and barriers to implementation of evidence-based

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recommendations can increase the effectiveness of change strategies by targeting known, rather than assumed, behavioral and institutional barriers.¹⁴ Presentation of key evidence followed by structured stakeholder discussion is a recognized method to implementing evidence into practice and policy.¹⁵

We therefore convened a representative group to reflect upon current SCI bladder catheterization practice in Australia in the context of evidence from CPGs and research. We conducted a facilitated forum, “Optimising Bladder Health Following Spinal Cord Injury: Evidence, Practice and Future Directions,” at the 2015 Annual Scientific Meeting of the Australian and New Zealand Spinal Cord Society (ANZSCoS). The meeting (<http://www.anzscos.org>) is the largest SCI conference in the region, thereby maximizing attendance of a broad range of relevant stakeholders. Participants (N=66) included a variety of practitioners who work in SCI bladder management across Australia, including clinical nurses (hospital and community based), medical specialists, occupational therapists, service managers (SCI unit and outreach), physiotherapists, research scientists, and board members from the Neurotrauma Research Program (<http://www.nrp.org.au>) and Spinal Cord Injuries Australia (<https://www.scia.org.au>). The discussion was recorded and transcribed to facilitate analysis, with no attendee being identified. Ethics approval was obtained from the Monash University Human Research Ethics Committee in October 2015 (ref: 2015-6855-6684).

Meeting Agenda and Synopsis

The forum ran for approximately 100 minutes. There were initial presentations (40 minutes) on (1) pathophysiological changes in the bladder wall following SCI identified through animal studies, which increases the risk of UTI following SCI (J.B.); (2) an audit that found 43% of 143 acute SCI admissions over 2 years experienced a symptomatic UTI, with the use of IDC significantly increasing occurrence of symptomatic UTI compared to all other bladder management methods³ (A.N.); and (3) an overview of current CPGs for management of the neurogenic bladder identified through a systematic CPG search and appraisal project (Bragge 2018, submitted).

Presentations were followed by a 60-minute discussion of current practice facilitated by P.B.

Discussion Summary

Four key themes emerged: (1) variations in practice across Australia; (2) challenges to implementing best practice; (3) community practice; and (4) evidence-based practice.

Variations in Current Practice Across Australia

SCI bladder management varied across Australia, with very few locations adhering fully to recommended CPGs. This was

List of abbreviations:

ANZSCoS	Australian and New Zealand Spinal Cord Society
CPG	clinical practice guideline
IC	intermittent catheterization
IDC	indwelling catheter
SCI	spinal cord injury
UTI	urinary tract infection

reflected in contrasting statements from 2 practitioners in separate Australian SCI units. One described IC being implemented as soon as possible, which in their center means after the period of postinjury diuresis (first 7-10 days, during which time the bladder must be continuously drained) and when the patient is medically stable (eg, doesn't require hourly urine output monitoring). Typically nursing staff administer the ICs, so starting ICs isn't contingent upon the patient being physically ready to self-catheterize, and in fact for patients with higher-level injuries, it may be unlikely they will ever be able to self-catheterize, but staff-ICs are implemented nevertheless.

The second practitioner indicated that IDC was used until it was deemed that a patient was mentally and physically ready to start IC. In this center, staff-ICs are not the norm, but patients are shown how to self-catheterize if and when they are mentally and physically ready to do so. Readiness to start IC was not easily defined in the forum and is not clearly articulated in CPGs. However, it is important to ensure that timing of catheter removal does not increase episodes of over-distension of the bladder from diuresis. Therefore, the concept of readiness as a potential barrier (actual or perceived) should be investigated further and clearly defined.

Challenges to Implementing Best Practice

Patients' emotional and lifestyle considerations were identified as influencing IC use and were also considered important to the decision-making of SCI bladder care practitioners. Personal and social factors that can influence a patient's decision to perform IC were highlighted; one practitioner stated that “although medically IC might be best, it's not necessarily the best for the patient.” IC practice was reported to significantly affect patients' work and social life, which can also negatively affect psychological health.

Ensuring appropriate processes and information to enable informed patient consent was also identified to influence patient choice. The need for patients to understand possible consequences of different bladder management techniques, including their effect on UTI risk, was identified. As one practitioner articulated, “I think that one thing I've learnt today is the importance of keeping the suite of options open and understanding how to tailor them to individual needs, but also how to communicate with patients about what each of those decisions mean.” This need for education to inform bladder care decision-making is reflected in the CPGs (eg, Adams et al⁸). One SCI unit reported that providing substantial information on the benefits and challenges of each catheter type frequently led to patients opting for IC.

Financial and resource considerations were also highlighted as an influence on patients' SCI bladder management options. Specifically, gaps in funding of catheters in the community were noted to affect not only catheter choice, but reuse practices. One community nurse voiced that “nobody has \$4 a day for a new catheter each time, so they will continue to [re]use a 90-cent catheter for up to six, seven weeks because they just simply cannot afford it.” Conversely, it was noted that the overall potential savings of treating UTIs could far outweigh the outlay for single-use, sterile, hydrophilic catheters that enable optimal bladder management. Therefore, the need to understand barriers and a formal cost-benefit analysis was identified.

Community Practice

Historical bladder practices were recognized not only in hospital settings, but also in community, settings. There was

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