



Letter to the Editor: Does intermittent catheterization result in fewer infections?

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Dear Editor

How can we make sense of the mixed findings in studies regarding urinary tract infections (UTIs) in spinal cord injury (SCI)? After literature review, the authors of the Consortium for Spinal Cord Medicine's clinical practice guidelines for neurogenic bladder in SCI reported, "*conflicting data* exist related to the risk of symptomatic infection in individuals using indwelling catheters versus other methods of bladder management." [1] Likewise, the Centers for Disease Control and Prevention guidelines report that the presumed benefit of avoiding indwelling catheters in SCI patients is based on "very low-quality evidence." [2] Nevertheless, most of us trained in SCI were taught that these patients suffer fewer UTIs if transitioned to IC.

If we eliminate studies that fail to exclude asymptomatic bacteriuria, we find a few studies that show a statistically significant increased incidence of UTI per catheter day with urethral catheters when compared to IC [3–5], including the one recently published in this journal [6]. In contrast, some other studies fail to find any difference in UTI risk between the two methods [7–9].

Our growing understanding of the SCI immune deficiency syndrome (SCI-IDS) may explain some of this variability. SCI-IDS begins within hours of initial injury, resulting in dramatic decline in certain immune cell lines, marked atrophy of lymphoid organs, and demonstrable effects on susceptibility to infections in animals and humans [10]. This immune suppression is most profound in precisely the patients who are more likely to have indwelling catheters—the severely impaired, rostral injuries who are less able to self-catheterize. Most important for this discussion: by 90 days post-injury, many immune cell lines have substantially

recovered. However, some degree of immune suppression persists into the chronic phase.

Interestingly, the commonly cited studies showing higher risk of UTI with indwelling catheters share a common theme: they occurred in hospitals that use Foley catheters in the early acute phase of SCI, then transition most patients to IC. For example, in the recent study by Hennesy et al., we see that local institutional practice is to keep indwelling catheters in place for a median of 58 days post-injury—longer for those with more severe injury. After this time, patients either begin IC or have a suprapubic catheter placed. By accident of study design, the majority of "Foley-days" occurred during the period of most profound immune suppression, and a disproportionate number of days on IC occurred after the immune system had had time to partially reconstitute.

This observation raises some interesting questions:

How should we interpret the findings of past studies with this pattern of Foley usage?

Do Foley catheters cause more UTIs, or are the severely impaired patients who tend to keep their Foleys longer simply more susceptible to infection?

If there is a difference in the UTI risk, is that benefit worth the daily increased dependence on caregivers?

Compliance with ethical standards

Conflict of interest The author declares that he has no conflict of interest.

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