



Two popular treatment options for neurogenic bladder

“Two treatment options for neurogenic bladder have gained popularity and have increased exposure in the literature over the past decade – botulinum toxin and antibiotic prophylaxis.”

There are several etiologies for a neurogenic bladder, including congenital and acquired. The neurogenic bladder can lead to urinary tract infections, urinary incontinence and other secondary issues. Treatment options, such as clean intermittent catheterization, have been important in the care of these patients. Two treatment options for neurogenic bladder have gained popularity and have increased exposure in the literature over the past decade – botulinum toxin and antibiotic prophylaxis. Current treatment options for detrusor overactivity, urinary urgency and urge incontinence include pelvic floor therapy, anticholinergics and neuromodulation via InterStim® (sacral nerve stimulation) or tibial nerve stimulation. Augmentation cystoplasty is not as common due to the other less-invasive treatment options. Botulinum-A toxin offers another minimally invasive treatment option [1,2]. However, treatment with botulinum-A toxin does have unanswered questions:

- What is the optimum dosage injected?
- What location in the bladder should be injected?
- How long will it last?
- Will patients tolerate the injections in the office?
- Are there potential systemic side effects [3-5]?

As our understanding of botulinum-A toxin continues to grow, a clinical trial in adults is now evaluating the potential of simply using it as a bladder instillation. A US NIH clinical trial (NCT00667095) is currently recruiting patients for a study evaluating the use of botulinum-A toxin and dimethyl sulfoxide (DMSO) versus DMSO alone in the form of a bladder instillation.

Multiple studies have shown significant improvements in patients' quality of life with botulinum-A toxin injections. The ability to

provide the treatment in the form of a bladder instillation reduces the minimally invasive nature of the delivery to a noninvasive delivery. In addition, this would allow many of the patients to receive the treatment on their own. Although there are a number of unanswered questions with botulinum-A toxin, many patients are receiving significant benefit from the therapy. It must be considered that the population most commonly studied, the neurogenic bladder population, is the more difficult to treat. Both the neurogenic bladder and idiopathic overactive bladder population are seeing significant benefit.

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The use of botulinum-A toxin has shown promising results in children [6,7]. Although studies have demonstrated a beneficial effect, the concern, especially in children, is the potential side effects [8]. Side effects of any medication should be taken very seriously when determining the risk:benefit ratio. Therefore, several additional studies will be required before any definitive conclusions can be made regarding the use of botulinum-A toxin in children.

The use of antibiotic prophylaxis is a well-established intervention to prevent urinary tract infections in children [9]. However, prophylaxis has taken the spotlight not only due to the significant impact that a urinary tract infection can have on a patient and the preventable nature of the problem, but also because of the change in reimbursement to the hospitals. As of October 1, 2008, the Centers for Medicare & Medicaid Services (CMS) will stop paying hospitals for eight conditions that have evidence-based prevention guidelines. This includes hospital-acquired catheter-associated urinary



Raymond Bologna

Department of Urology,
 Northeastern Ohio Universities
 College of Medicine and
 Pharmacy, 95 Arch St,
 Suite 165 Akron,
 OH 44307, USA
 Tel.: +1 330 375 4848;
 Fax: +1 330 375 4066;
 rbologna@neo.rr.com



Jeffrey S Palmer[†]

[†]Author for correspondence:
 Center for Pediatric Urology,
 Glickman Urological & Kidney
 Institute, Cleveland Clinic
 Children's Hospital, Cleveland,
 OH, USA
 and,
 Cleveland Clinic Lerner College
 of Medicine of Case Western
 Reserve University, Cleveland,
 OH, USA
 Tel.: +1 216 445 7504
 Fax: +1 216 445 2267
 palmerjs@ccf.org

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tract infections. The CDC has reported that there are 561,667 catheter-associated urinary tract infections per year. The annual cost of urinary tract infections in hospitals is as much as US\$451 million [10]. Catheter-associated urinary tract infections are the most common infection developed by patients while they are hospitalized. One has to raise the question that this guideline will eventually spread to the office environment. Practicing prevention and prophylaxis is simply good medicine, but the application of the American Urologic Association and European Urologic Association guidelines will require dedication by the healthcare provider and the office staff [10,11]. Acknowledging which patients are at risk, determining which patients were recently hospitalized and which are coming from the community as opposed to from a nursing home will add an extra step in the process.

Therefore, the use of botulinum toxin and antibiotic prophylaxis are two treatment options that have gained popularity over the past decade. However, what new options will be available during the next decade and will they be more efficacious than the two former ones? Health practitioners will need to evaluate these new treatment modalities to determine which are best for the care of patients.

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