INCONTINENCE

Liposomal onabotulinumtoxinA instillation piloted for OAB

Data from a proof-of-concept trial indicate that intravesical instillation of liposomal onabotulinumtoxinA (BoNT/A) might be a viable new approach to the treatment of patients with overactive bladder (OAB).

Intravesical BoNT/A is an effective therapy for OAB, but intradetrusor injection of this neurotoxin is invasive, can impair detrusor activity and increase postvoid residual (PVR) urine volume, and is associated with UTI. For these reasons, many patients are unwilling to accept this treatment. Building on previous preclinical

evidence that liposome-encapsulated BoNT/A (lipotoxin) can improve bladder hyperactivity, the investigators of the current pilot trial hypothesized that intravesical instillation of lipotoxin could be a less traumatic, efficacious and, therefore, more acceptable approach. In addition, penetration of the agent into the detrusor might be limited, thus negating compromised contractility of the bladder.

24 patients with OAB who were nonresponsive to >3 months of therapy with traditional antimuscarinic agents were randomized 1:1 to receive intravesical instillation of lipotoxin or saline solution. 3-day urinary frequency and urgency episodes were decreased at 1 month by a median of 6.5 events and 12 events, respectively, in the lipotoxin group, whereas no change and a median of one fewer episode, respectively, were reported in the control group. Importantly, no UTIs or large PVR volumes were reported.

However, only 50% of the 12 patients initially treated with lipotoxin showed

a response, and only four had a maintained response at 3 months.

Furthermore, of 12 nonresponders who were subsequently treated, or retreated, with lipotoxin (six from each cohort), only one showed a response at 3 months. Moreover, no change in urgency urinary incontinence (UUI) was found in either group, although the median baseline frequency of UUI was only 0.5 events in the lipotoxin cohort.

The investigators acknowledged that lipotoxin instillation did not seem as beneficial as injected BoNT/A, potentially due to the limited penetration of lipotoxin into the detrusor. Nevertheless, instillation of liposomal BoNT/A was safe, had beneficial therapeutic effects and, therefore, deserves further optimization and exploration in larger clinical trials.

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Original article Kuo, H.-C. *et al.* Pilot study of liposome-encapsulated onabotulinumtoxinA for patients with overactive bladder: a single-center study. *Eur. Urol.* doi:10.106/j.eururo.2014.01.036

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