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CAN WE AVOID BLADDER AUGMENTATION IN CASE OF FAILURE OF A FIRST INTRADETRUSOR BOTULINUM TOXIN INJECTIONS IN PATIENTS WITH SPINAL DYSRAPHISM?

Hypothesis / aims of study

For long, bladder augmentation has been considered the gold standard treatment in neurogenic detrusor overactivity (NDO) patients who failed intradetrusor injections of botulinum toxin A (IDBTI). Several reinjections strategies have been described in the past few years (e.g. botulinum toxin switch, reinjection to a higher dosage,….) to avoid this surgical last resort. Moreover, several studies suggest that the optimal effectiveness of IDBTI could be obtained only after several injections. Patients with spina bifida are a high risk population regarding upper tract damage. There is currently no data regarding the management of failure of a first IDBTI in spina bifida patients. The aim of this study was to report the outcomes of botulinum toxin reinjections and to compare the outcomesof various reinjections strategies in patients with spinal dysraphism who failed a first IDBTI.

Study design, materials and methods

All patients with spinal dysraphism who had undergone at least one IDBTI from 2002 ro 2016 in 6 centers were included retrospectively. Patients bleow the age of 16 years old were excluded to focus on an adult population. The primary endpoint was the success of injections, defined as as the combination of urgency, urinary incontinence and detrusor overactivity resolution. The choice to perform either a repeat injection of the same toxin to the same dosage or a repeat injection of the same toxin to a higher dosage or a botulinum toxin switch or a bladder augmentation was left to the physician's discretion. The outcomes of these various strategies were compared using the Fisher exact test.

Results

Out of a 85 patients cohort, 30 spinal dysraphism patients who failed a first IDBTI were included (36.6%). At the end of the study period, two patients were lost to follow-up and two had just undergone their second IDBTI (outcomes not yet known). Of 26 patients left, repeat injections remained uneffective in 16 patients (64%) despite 1 to 4 courses of reinjections. Two other patients had transient effectiveness before the injections failed again. Hence, 18 patients finally underwent bladder augmentation (69.2%). Therefore, 10 patients had effective injections at least once during their management (38.5%) and 8 had still effective injections at the end of the study period (30.8%) but 3 of them were only improved without complete success (clinical but not urodynamic success). Thus only five patients had a durable and satisfactory effectiveness of IDBTI (19.2%). Five botulinum toxin switch from onabotulinum toxin to abobotulinum toxin were performed with only one success (20%). In contrast, four out of five patients (80%) who underwent a repeat injection of onabotulinum toxin 300 U after failure of onabotulinum toxin 200 U had a complete success (difference: p=0.20). Finally, five out of 15 patients who underwent a repeat injection of onabotulinum toxin 200 U to the same dosage had a complete success (33%; difference with reinjection to a higher dosage: p=0.12).

Interpretation of results

The lower efficacy of reinjections strategy combined with the high risk of upper tract damage could suggest to favor bladder augmentation sooner in the management of these patients.

Concluding message

Reinjection strategies seem poorly effective in spina bifida patients who failed a first IDBTI with success in only 19.2% of them. Despite a lack of statistical power, reinjection of onabotulinum toxin to a higher dosage (300 U after failure of 200 U) seem to be the more effective option in these patients.

Disclosures

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