Solifenacin improves the results of intradetrusor injections with botulinum toxin a in patients with neurogenic detrusor overactivity

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ABSTRACT

Background: Neurogenic detrusor overactivity (NDO) is treated with antimuscarinics as first line. For patients with contraindications or unresponsive, intradetrusor injections with botulinum toxin (BoNT) are a safe and effective, but expensive option. Our study evaluated whether adding solifenacin to the intradetrusor injection of BoNT A could boost the effect of BoNT in patients with NDO due to multiple sclerosis or spinal cord injury refractory to antimuscarinics alone and/or lead to less frequent injections.

Measures and Outcomes: We gathered data from injections and reinjections from urodynamic testing and questionnaire assessments before the procedure and after 3 months. We analyzed data from 39 patients who achieved total continence and a minimum 24-month follow-up period.

Results: We present our results comparing group A and group B. The OABq score improved 16±1.611 points (p=0.004) vs. 20±0.44 points (p=0.002). Reinjection was needed after a mean 8.2 months vs. 11.7 months. Post void residue (PVR) rose from 34.06±9.70 to 47.72±11.30 ml (p=0.0004) vs. from 33.31±11.53 to 53.19±15.03 ml (p=0.0002). Peak detrusor pressure (Pdet) decreased from 69.5±20.06 cmH_2O to 19.4±7.32 cmH_2O (p=0.0001) vs. from 65.39±16.72 cmH_2O to 13.67±5.20 cmH_2O (p=0.0001). Maximum bladder capacity rose in both groups, but the difference was not statistically significant (p=0.073, p=0.012).

Conclusions: It is known that BoNT injections are effective for all bladder symptoms in NDO. Our study shows that adding solifenacin improves patient satisfaction, increases the interval between reinjections, thus lowering costs, lowers and keeps the Pdet in safe ranges, without increasing the PVR to dangerous levels. An increase in bladder volume is to be noted, even if not statistically significant. Although our study is limited by the small series of patients and the lack of randomization and placebo control group, the BoNT-solifenacin combination could be considered in NDO in terms of cost-effectiveness. Further studies would be beneficial.

METHODS

We performed a prospective study; we enrolled 49 patients assigned alternatively to group A, undergoing BoNT injections, and group B, with solifenacin added.

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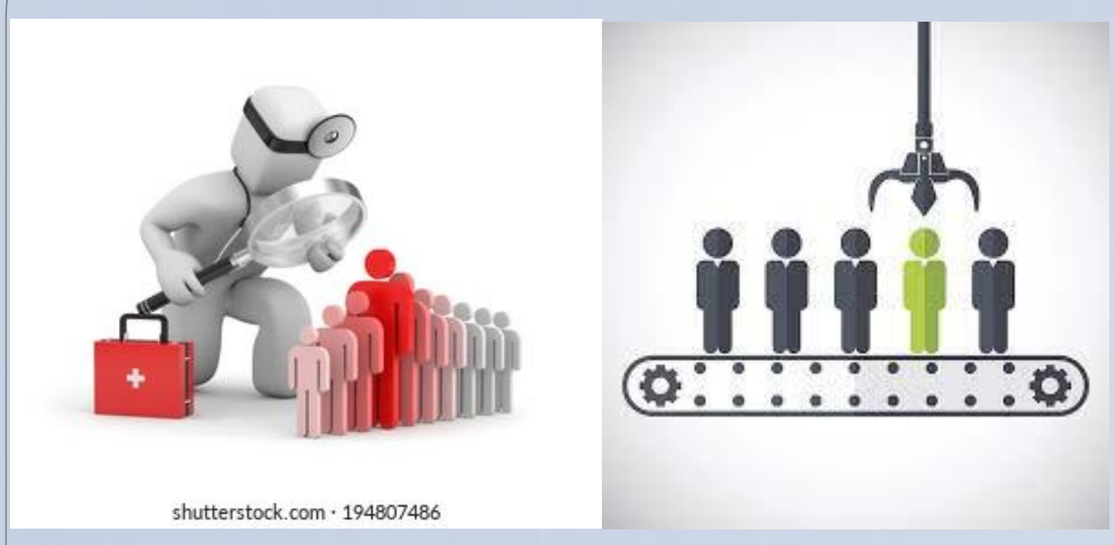

RESULTS

We present our results comparing group A and group B. The OABq score improved 16±1.611 points (p=0.004) vs. 20±0.44 points (p=0.002). Reinjection was needed after a mean 8.2 months vs. 11.7 months. Post void residue (PVR) rose from 34.06±9.70 to 47.72±11.30 ml (p=0.0004) vs. from 33.31±11.53 to 53.19±15.03 ml (p=0.0002). Peak detrusor pressure (Pdet) decreased from 69.5±20.06 cmH_2O to 19.4±7.32 cmH_2O (p=0.0001) vs. from 65.39±16.72 cmH_2O to 13.67±5.20 cmH_2O (p=0.0001). Maximum bladder capacity rose in both groups, but the difference was not statistically significant (p=0.073, p=0.012).

During our 24 months follow-up we did not record any adverse events within our 2 study groups. The addition of solifenacin did not result in any cases of acute urinary retention or urinary tract infections. This is in line with data from the literature, confirming that botulinum toxin is safe and effective in humans. We did not quantize the sensations recorded during the urodynamic testing, but the overall impression was that the sensations decreased in patients following the combined treatment. This could explain in part the longer efficacy and could be the subject of another study. Our study is mainly limited by the small series of patients. We consider that the price of the botulinum toxin injection is a barrier for many of our patients, so recruiting for a trial is very slow given the fact that we are not able to provide the substance during the treatment. Another limitation is the lack of randomization.

CONCLUSIONS

- Adding solifenacin improves patient satisfaction, increases the interval between reinjections,
- lowers and keeps the Pdet in safe ranges, without increasing the PVR to dangerous levels.
- An increase in bladder volume is to be noted, even if not statistically significant
- Lower overall cost of treatment

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