

# INTRA-PROCEDURAL PAIN SCORES DURING CYSTOSCOPIC INTRADETRUSOR ONABOTULINUM TOXIN-A INJECTIONS

#25364

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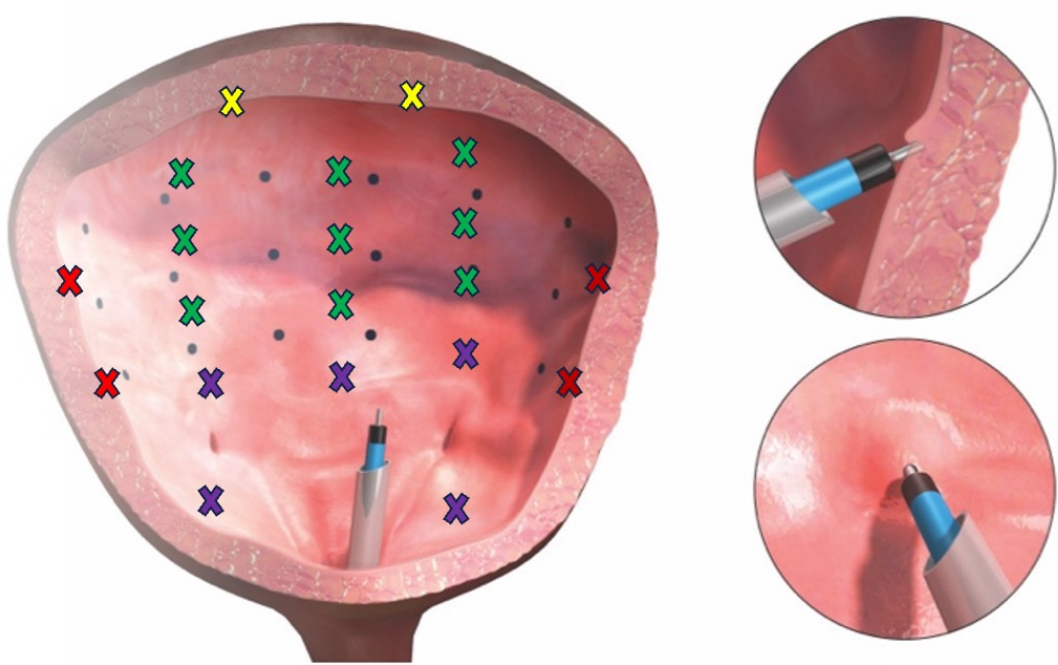
## Hypothesis / aims of study

The efficacy of intradetrusor onabotulinum-toxin-A (BTX-A) injections for the management of overactive bladder syndrome/detrusor overactivity has been well-established<sup>1</sup>. These injections are commonly performed in the office setting, using a flexible or rigid cystoscope, with a needle for intra-detrusor injections, and local anesthesia. Despite their success in alleviating overactive bladder symptoms, limited studies have examined the intraprocedural bladder pain experienced by patients during BTX-A injections. This study aims to compare the intraprocedural pain scores of adult patients undergoing intradetrusor BTX-A injections within three distinct groups: idiopathic overactive bladder/detrusor overactivity (IDO), wet overactive bladder syndrome (OAB-wet), and neurogenic detrusor overactivity (NDO).



## Study design, materials and methods

Patients diagnosed as IDO, NDO, and OAB-wet were included in this study. All injections were performed by using a flexible cystoscope and a single-use Olympus needle (4 mm needle length, 27G needle diameter, 971 mm working length).



Depending on medical history and clinical needs, BTX-A doses ranging from 100u to 300u

5 in paratrighonal region

2 left lateral wall

2 right lateral wall

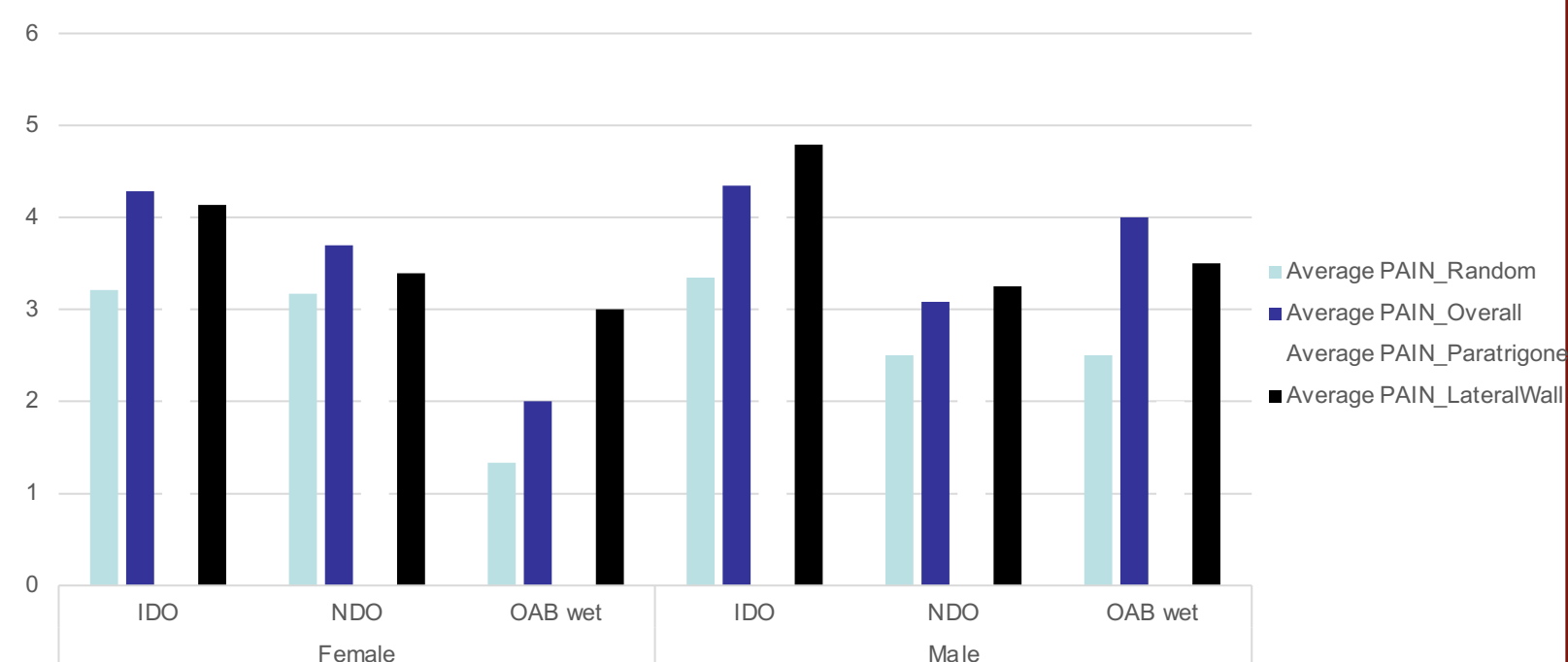
11 at random locations in anterior and posterior bladder walls

Patients rated their pain level with a scale ranging from 0 (no pain) to 10 (severe pain) in each of these regions by using a visual analog scale (VAS). Baseline pain scores were also collected in a control group of patients who were having diagnostic flexible cystoscopy.

## Results

Between March 2021 and October 2023, a total of 119 participants were enrolled in the study, comprising 82 females and 37 males. There were 88 IDO (74%), 28 NDO (24%), and three OAB-wet (2%) patients. 50 patients had diagnostic flexible cystoscopy with an average pain score of 1.76 using Optilube lubricant gel (men: 1.97, women: 1.63).

Average VAS scores for BTX-A injections were 4.03 for overall, 3.78 for paratrighonal injections, 4.03 for lateral wall injections, and 3.11 for random injections. A two-way ANOVA was conducted to explore the potential associations between gender, diagnosis, and distinct types of pain scores. The analysis revealed no statistically significant differences in the context of random pain score (sex:  $p=0.8$ , diagnosis:  $p=0.4$ , interaction:  $p=0.65$ ) and overall pain score (sex:  $p=0.55$ , diagnosis:  $p=0.13$ , interaction:  $p=0.52$ ). **However, a significant difference was observed for para-trighonal pain** (sex:  $p=0.55$ , diagnosis:  $p=0.01$ , interaction:  $p=0.52$ ). **Subsequent post-hoc analysis indicated higher pain scores for patients with OAB-wet.** Upon excluding the three OAB-wet patients, no significant differences were found between patients with IDO and NDO ( $p=0.06$ ). Furthermore, no significant differences were found concerning lateral wall pain (sex:  $p=0.71$ , diagnosis:  $p=0.13$ , interaction:  $p=0.79$ ). Notably, repeating the analysis after removing OAB-wet yielded no significant differences between IDO and NDO, nor for gender.



## Interpretation of Results

BTX-A injections seem to cause twice as much more pain than a diagnostic cystoscopy, nonetheless are still well tolerated under local anesthesia/lubricant gel. It was our anecdotal impression that injections in certain areas in the bladder caused more pain.

However, there were no statistically significant differences in random pain and overall pain by gender, diagnosis, or their interaction. A notable difference in para-trighonal pain was observed, predominantly driven by higher pain scores in OAB-wet patients, suggesting potential implications for this subgroup. The limited sample size of OAB-wet patients may have influenced these findings and further research is needed to understand the pain experience in different bladder dysfunction categories especially between OAB-wet patients and those with OAB-dry/detrusor overactivity. **The increased pain in the para-trighonal region may be due to the increased bladder nerves running in that region.** No trials are looking at the outcomes between the different injection protocols, however injecting in the para-trighonal area may in theory improve outcomes with BTX-A Injections due to the close proximity of the nerves.

## Conclusions

BTX-A injections under local anesthesia using lubricant gel causes more pain than a diagnostic cystoscopy however these are still tolerable. Randomized trials are needed to look at different injection protocols in terms of long-term outcomes.

## References

- 1) Duthie JB, Vincent M, Herbison GP, Wilson DI, Wilson D. Botulinum toxin injections for adults with overactive bladder syndrome. Cochrane Database Syst Rev. 2011 Dec 7;(12):CD005493. doi: 10.1002/14651858.CD005493.pub3. PMID: 22161392.