# Lidocaine solution versus lidocaine gel instillation for pain management during intravesical botulinum

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## ABSTRACT

Intravesical botulinum (BoNT) toxin is a safe and effective treatment option for patients with refractory overactive bladder and neurogenic lower urinary tract dysfunction (1, 2). Pre-procedural instillation of lidocaine solution is standard practice but does require significant time.

The objectives were to compare pain scores using Visual Analogue Scale (VAS) following BoNT using intravesical lidocaine instillations and lidocaine gel vs lidocaine gel alone. Subgroups analysis was performed based on sex, indication for treatment, and first vs subsequent treatment. Post-procedural complications and treatment failure were documented.

A total of 80 patients were included (mean age 61 years, 75% female, 56% with overactive bladder, and 30% receiving first treatment). There was no significant difference in pain scores between groups: Group 1 median VAS 3.0 (Q1 2.5, Q3 5.0) vs Group 2 median VAS 4.0 (Q1 3.0, Q3 5.0); p = 0.11. Post-procedural complications were low in both groups. Treatment failure did not occur in any patients in either group.

Lidocaine gel alone may be an acceptable analgesia alternative to intravesical lidocaine solution instillation while improving efficiency and availability of treatment.

## METHODS

Group 1:

- intravesical lidocaine solution instillation (20 ml 2% lidocaine solution + 30 ml 0.9% normal saline) and lidocaine gel.
- Rigid scope in females and a flexible in males.

Group 2

- instillation lidocaine gel alone.
- flexible scope in both males and females.

The VAS was used to measure patient's pain. Treatment failure was defined as patient requesting to stop or to perform future treatments under sedation. Patient demographics, post-procedural complications, and treatment failures were collected by chart review. The Mann-Whitney U Test was used to compare pain scores.

Sample size was calculated at least 34 in each group by assuming difference in medians of 1.5, standard deviation of 2, alpha of 0.05 and beta 0.80.

## RESULTS

A total of 80 patients were included (mean age 61 years, 75% female, 56% with overactive bladder, and 30% receiving first treatment). There was no significant differences in baseline characteristics between treatment groups. There was no significant difference in pain scores between groups: Group 1 median VAS 3.0 (Q1 2.5, Q3 5.0) vs Group 2 median VAS 4.0 (Q1 3.0, Q3 5.0); p = 0.11. Furthermore, there were no significant differences in pain scores between groups based on sex, indication for treatment, or whether patients were receiving their first or subsequent BoNT treatments (p>0.05). Post-procedural complications were low in both groups. Treatment failure did not occur in any patients in either group.

**Table 1.** Descriptive characteristics of patients undergoing intravesical botulinum toxin under local cystoscopy stratified by type of anesthesia received: intravesical lidocaine solution or lidocaine gel.

| Variable | | Solution (n = 39) | Gel (n = 41) |
|---|---|---|---|
| Age (years) mean (SD) | | 62.2 (16.0) | 59.9 (17.2) |
| Sex n (%) | | | |
| | Female | 30 (76.9) | 30 (73.2) |
| | Male | 9 (23.1) | 11 (26.8) |
| Indication n (%) | | | |
| | OAB | 23 (59.0) | 22 (53.7) |
| | NLUTS | 15 (38.5) | 18 (43.9) |
| | Other | 1 (2.5) | 1 (2.4) |
| Previous treatment n (%) | | | |
| | Yes | 27 (69.2) | 29 (70.7) |
| | No | 12 (30.8) | 12 (29.3) |

**Table 2.** A comparison of pain scores for patients receiving intravesical lidocaine solution or lidocaine gel.

| Pain Variables median (Q1, Q3) | Solution (n – 39) | Gel (n = 41) |
|---|---|---|
| Overall Pain Score | 3.0 (2.0, 5.0) | 4.0 (3.0, 5.0)* |
| Sex | | |
| Female | 4.0 (2.0, 5.0) | 4.5 (3.0, 5.0)* |
| Male | 3.0 (3.0, 4.0) | 3.0 (2.0, 5.0)* |
| Indication | | |
| OAB | 4.0 (3.0, 6.0) | 4.5 (3.0, 5.0)* |
| NLUTS | 3.0 (1.0, 4.0) | 4.0 (2.0, 5.0)* |
| Other | NA | NA |
| Previous Treatment | | |
| Yes | 4.0 (2.0, 5.0) | 5.0 (3.0, 5.0)* |
| No | 3.0 (2.0, 5.0) | 4.0 (2.0, 4.5)* |

* All p-values > 0.05.

## CONCLUSIONS

Lidocaine gel alone may be an acceptable analgesia alternative to intravesical lidocaine solution instillation while providing similar pain relief and improving treatment availability.

## REFERENCES

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