47th ANNUAL INTERNATIONAL CONGRESS EHS 2025 JUNE 4-6 PARIS - FRANCE

THEME Incisional hernia

A Prospective Observational Study to Evaluate the Effect of Preoperative Botulinum Toxin on Hernial Defect Width Prior to Abdominal Hernia Repair

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Introduction

- In the recent years, preoperative Botulinum Toxin A (BTA) infiltrations into the lateral group of abdominal wall muscles have been found to be beneficial in cases of complex abdominal wall hernia.
- The laxity caused by the temporary paralysis of the lateral abdominal wall muscles increases the abdominal sac volume, reduces the hernial defect and thus can be used as an adjunct to the component separation techniques.

Method

- We aimed to measure the changes in the transverse defect dimensions in centimetres before and at three weeks following the application of botulinum toxin A (BTA).
- We also assessed the rate of primary closure at the time of hernia repair.
- We included all willing patients, who had a midline abdominal wall hernia with a transverse defect measuring more than 10 centimetres (cm).
- The study excluded patients with ulceration, skin infection, and recurrent hernia. A CT scan was performed before and three weeks after the injection of BTA to measure defect size.
- Ultrasound guided injection of 300 IU of BTA was carried out bilaterally at three sites infiltrating the lateral group of muscles

Results

- We could include 12 patients in the last 18 months.
- Mean defect width was 15 cm (± 4.8 cm).
- Mean reduction in defect was 4.5 cm (± 2.7) ($p < 0.003$). In all cases, except for one with a defect size of 20.7 cm, we were able to close the midline

Variables	n=12
Mean age	55.6 (±12.4)
Gender	Females (10), Males (2)
Mean transverse defect	15 cm (± 4.8cm)
Mean reduction in defect width	4.5 cm (± 2.7cm)

Discussion

- After BTA administration, studies assessing abdominal wall muscle thickness and length have shown varying outcomes.
- In 2009, Ibarra-Hurtado et al. published the first report of preoperative injection of BTA for abdominal wall reconstruction.[1]
- Even in our study, we noted a significant reduction in hernial width after BTA.. With positive changes to the abdominal wall and high rates of fascial closure, the overall outcomes of BTA use is beneficial and safe.

Conclusion

- At three weeks after BTA, the mean reduction in defect size was significant.
- We also observed that even after BTA, midline closure was not possible with a defect width greater than 20 cm.

Acknowledgement – nil

Conflict of interest – nil

Funding statement – not applicable

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Reference
1. Ibarra-Hurtado TR, Nuno-Guzman CM, Echeagaray-Herrera JE, Robles-Velez E, de Jesus Gonzalez-Jaime J. Use of botulinum toxin type a before abdominal wall hernia reconstruction. World J Surg. 2009;33:2553-2556