Gender Differences in Response to Long-Term Treatment with Botulinum Toxin Type A for Chronic Neuropathic Pain

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AIMS

Recent findings suggest that differences in the sexual dimorphism of pain receptors may imply variations in neuropathic pain mechanisms and treatment efficacy between men and women. [1]. The present study aims to evaluate potential sex-related differences in response to long-term treatment of drug-resistant chronic neuropathic pain (CNP) with botulinum toxin type A (BoNT-A) in a real-world clinical setting.

MATERIALS

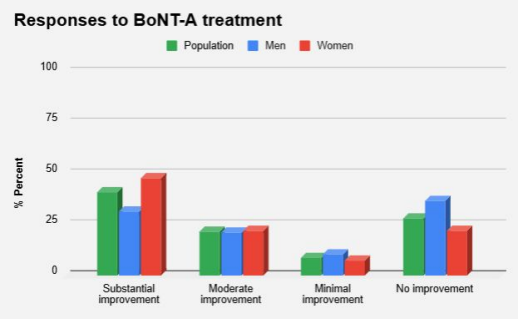
This single-center, observational, prospective study included patients with drug-resistant CNP treated with subcutaneous BoNT-A injections every three months for at least 1 year.

METHODS

Data were collected at baseline and at last follow-up. Treatment response was categorized as substantial, moderate, minimal, or no improvement based on NRS score reduction [3].

RESULTS

The sample included 46 patients, 27 female (mean age: 59, SD: 46-68) and 19 male (mean age: 55, SD: 46-63) patients. The baseline mean NRS was 10 (SD: 9-10) in both groups (p=0.672). At last follow-up, the mean NRS was 6 (SD: 3-9, range: 0-10), lower in females (5, SD: 2-7) than males (7, SD: 5-10), but without statistical significance (p=0.134). Overall, 41.3% reported substantial improvement (F=48.2%; M=31.6%), 21.7% a moderate improvement (F=22.2%; M=21.1%), 8.7% a minimal improvement (F=7.4%; M=10.5%), and 28.3% no improvement (F=22.2%; M=36.8%), with no sex-related differences (χ^2=1.716, p=0.633).



DISCUSSION

Our results confirm the long-term efficacy of BoNT-A in reducing pain intensity in patients with drug-resistant chronic neuropathic pain (CNP). They also highlight a trend toward a better response to BoNT-A treatment in females. However, due to the small number of male patients, the observed differences were not statistically significant. These results align with the growing body of evidence suggesting sexual dimorphism in pain pathogenesis.

CONCLUSIONS

Although no statistically significant sex-related differences were observed, the trend toward a better response in females merits further research to improve the specificity and effectiveness of CNP therapy in both sexes.

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