Gender-related differences in response to long-term OnabotulinumtoxinA therapy in chronic migraine

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INTRODUCTION

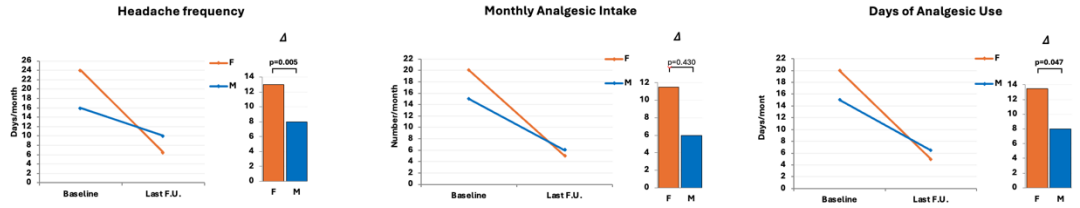
Recent findings suggested that sexual dimorphisms of pain receptors may imply differences in pain mechanisms and treatment efficacy between the sexes [2]. The aim of our study was to compare the **long-term response to botulinum toxin type A (BoNT-A) treatment** for chronic migraine (CM) in men and women.

MATERIALS AND METHODS

Patients with chronic migraine (matched for age, migraine onset, headache duration and medication overuse) had been treated with BoNT-A for more than one year [1]. The following parameters were assessed in patients grouped by gender: monthly headache days, pain intensity and analgesic use at baseline and at the final visit following BoNT-A treatment.

RESULTS

A total of 90 patients (58 females, 32 males) were included. Females reported higher baseline headache frequency (median 24 vs 16 days/month; p=0.044) and pain intensity (VAS 10 vs 9; p=0.038). BoNT-A treatment duration was similar between sexes, with only 6 males discontinuing due to inefficacy. At last follow-up, median VAS decreased in both groups (females 10→6, males 9→6), with females showing a greater, though non-significant, reduction; **women demonstrated a notably and significant greater reduction in headache days compared to men** (female 24→6, males 16→10). **Women also showed a reduction in the use of analgesics**, both in terms of the overall number of doses taken (not significant) and the frequency of intake following treatment.



DISCUSSION AND CONCLUSIONS

Our study indicates that women have a significantly greater and longer-lasting response to long-term BoNT-A treatment for chronic migraine than men. This suggests a gender-related difference in the long-term response to BoNT-A therapy for chronic migraine. Our study also hints at a potential **sex dimorphism** in the mechanisms underlying migraine pain and highlights the need for further research to improve the specificity and effectiveness of chronic migraine therapy. Women experience a significantly greater and longer-lasting response to chronic migraine treatment with botulinum toxin A (BoNT-A) than men do.

1. Bono F, Mazza MR, Magro G, Spano G, Idone G, Laterza V, Tedeschi D, Pucci F, Gambardella A, Sarica A. - Regional Targeted Subcutaneous Injection of Botulinum Neurotoxin Type A in Refractory Chronic Migraine: A Randomized, Double Blind, Placebo Controlled Study - Toxin - 2023 May 9 – 15 (5) – 324
2. Porreca F, Navratilova E, Dodick DW. - Advancing understanding of migraine pathophysiology and therapy by consideration of patient sex - Cephalalgia - 2025 May 21 - 45 (5)