

Introduction



- Migraine is a recurrent neurological disorder causing severe headaches in the frontal lobe or near the eye.
- Ibuprofen, aspirin, and other pain relievers are used to treat migraine attacks with temporary results.
- The injection of Onabotulinumtoxin A (BoNT or Botox) into specific muscles aids in reducing the frequency of migraines (Aurora et. al 2014).
- BoNT inhibits acetylcholine release from nerve terminals, leading to muscle relaxation. It also blocks CGRP (calcitonin gene-related peptide) and substance P, crucial for pain transmission and inflammation, reducing migraine frequency (Shah et al., 2021).

Injection Sites



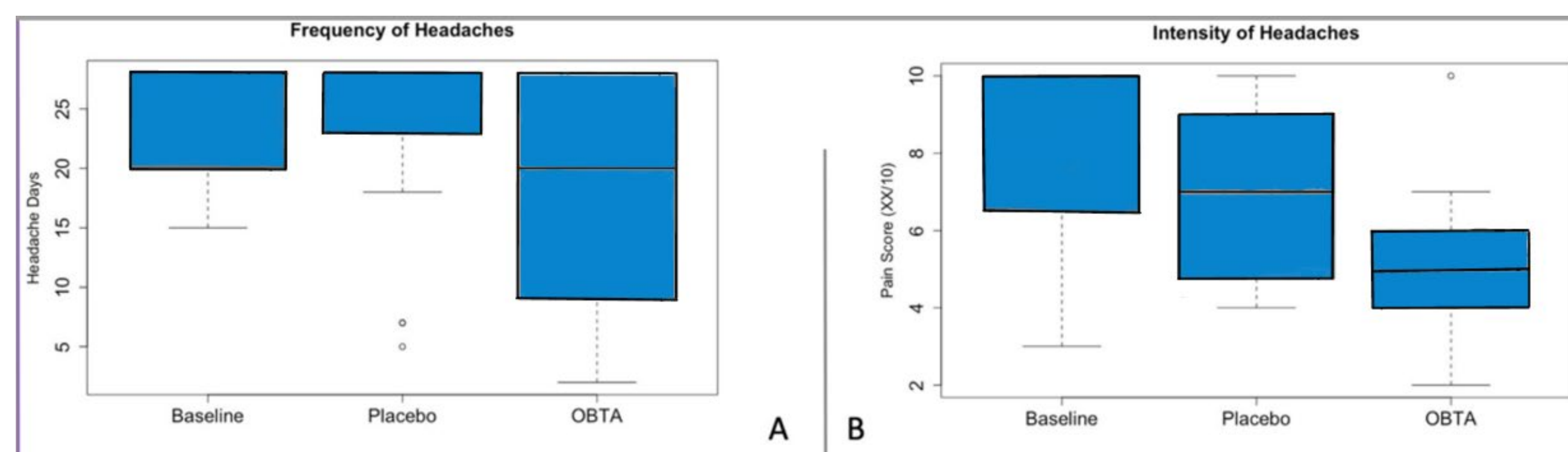
Methods

The research conducted an in-depth analysis of a comprehensive literature review evaluated by UW Tacoma's TBIOMD 495 course. The research explored various types of sources including primary sources, secondary sources, news as well as governmental sources. Overall, 20 sources have been explored when writing the paper and 8 sources have been used in the poster.

Results

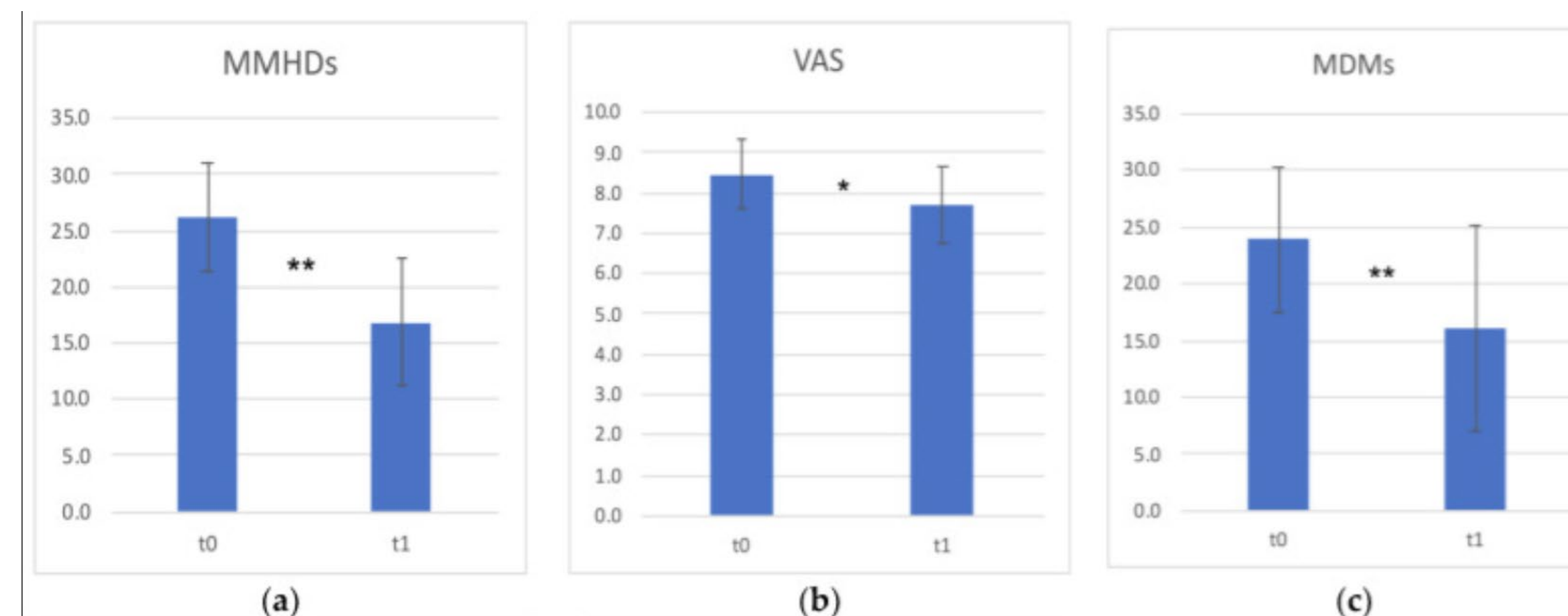
Medication	Botox (onabotulinum toxin A)	Topamax (Topiramate)	Elavil (Amitriptyline)	Inderal (propranolol)	Depakote (Divalproex Sodium)
Side effects	Bruising or bleeding at the injection site, occasionally eyelid droop or facial weakness	Weight loss, memory issues, anxiety, nausea, tingling in hands and feet	Weight gain, constipation, drowsiness, dry mouth	Fatigue, depression, decreased exercise tolerance	Tremor, dizziness, diarrhea or constipation, weight gain

Figure 3: (Clockwise from top-left) An illustration comparing the frequency, intensity, duration, and PedMIDAS endpoints to the pre-study baseline period. These primary endpoints displayed were obtained at scheduled follow-up visits 6 weeks after treatment visits during the double-blinded phase of the study for each group, for example, pre-study baseline, subjects assigned to the OBTA and placebo group, respectively



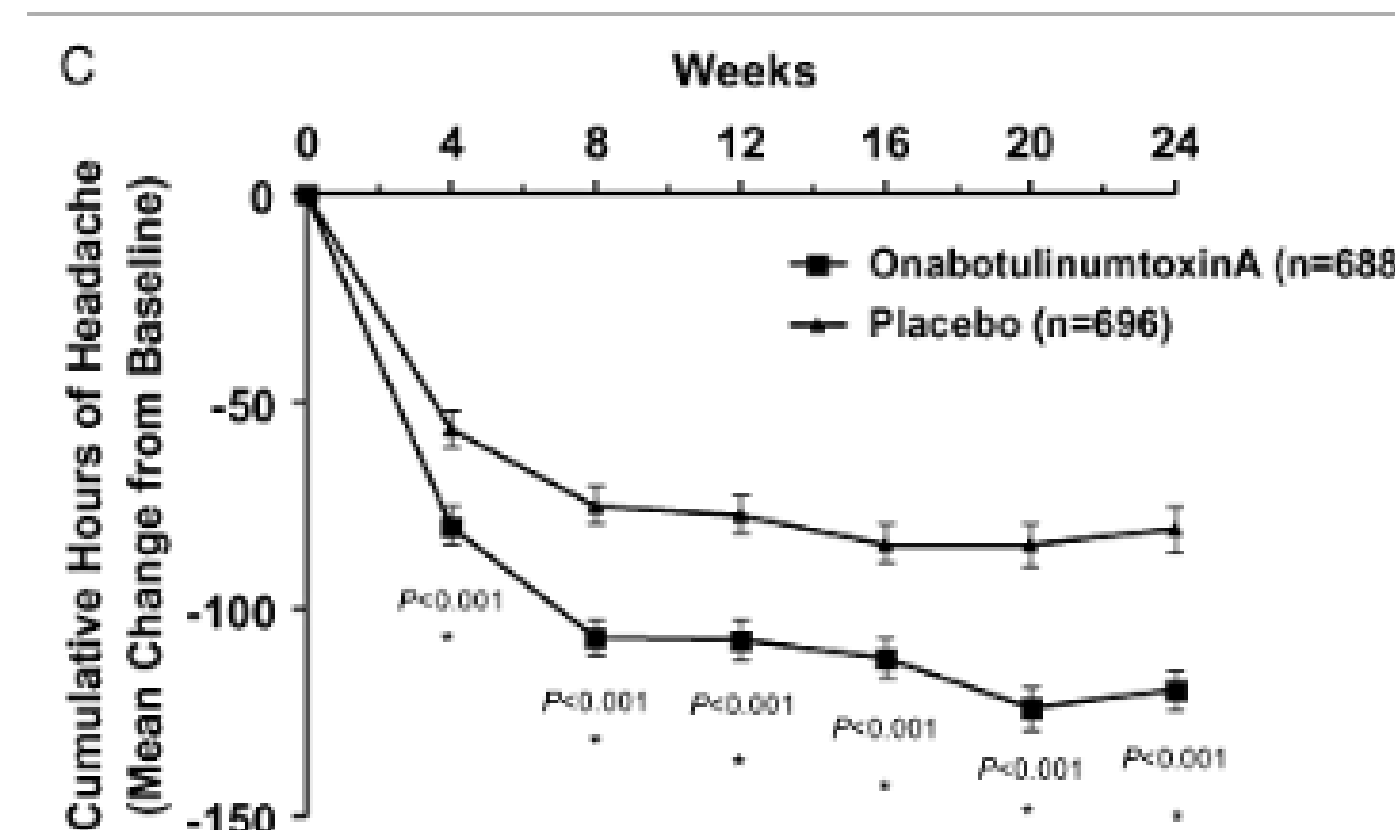
- The results of the following data indicate a significant reduction in the frequency of headaches over 25 days comparing OBTA (presenting BoNT) to placebo (Shah,2020).

Figure 1: The mean clinical findings and questionnaires scores are represented: (a) Mean Monthly Headache Days, (b) pain intensity evaluated with the Visual Analogue Scale, (c) Mean number of Days with Medications,



- The results above indicate a reduction in Headache days, pain intensity of the headaches as well as number of days patients consumed the medication. The reduction is visible in the right bar as the left bar presents the placebo. Overall, a reduction of over 10 days for figure a and c and, over 1 based on the analog visual scale for figure b (Torrente, 2022).

Figure 3: C) Mean change from baseline in cumulative hours of headache on headache days. Cumulative hours of headache at baseline: 295.9 ± 4.5 onabotulinumtoxinA group versus 281.2 ± 4.4 placebo group, P = 0.021.



- The results suggest that the onabotulinumtoxinA group experienced a more substantial reduction in cumulative headache hours compared to the placebo group (Dodick, 2010)

Discussion

- Overall, participants treated with Botox experienced six times fewer headaches per day compared to placebo (Dodick, 2013).
- Over the span of a week or even a month, such reduction is significant.
- Botox effects may take weeks and need multiple sessions for sustained benefit (Wells et al., 2014).
- Some patients may respond to treatment quicker than others. Some others may not benefit from treatment.
- May be costly and requires repetitive injection.

Future direction

- Continued research is essential to monitor Botox's long-term safety for chronic migraine patients and study potential adverse effects.
- Evaluating its cost-effectiveness compared to other treatments over an extended period will offer valuable data to make informed decisions.

Citation

