

Additional BoNT-A Injection Dose Intervals Increase Efficacy in Pediatric Migraines

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Background

- Chronic migraines are ranked in the top 10 disability causing diseases and affects 9.1% of the global pediatric population¹⁻³
- Pediatric migraines often lead to ED visits, school absences, and missed social events, which can negatively impact the individual academically and socially^{3,4}
- Onabotulinum Toxin A (BoNT-A) is a safe, effective prophylactic therapy for pediatric migraines
- Barriers to BoNT-A include patient needle scare and 31 injections every 12 weeks⁵⁻⁷
- The original BoNT-A PREEMPT protocol is often deviated from due to adverse effects, patient's request, and avoiding treatment waste

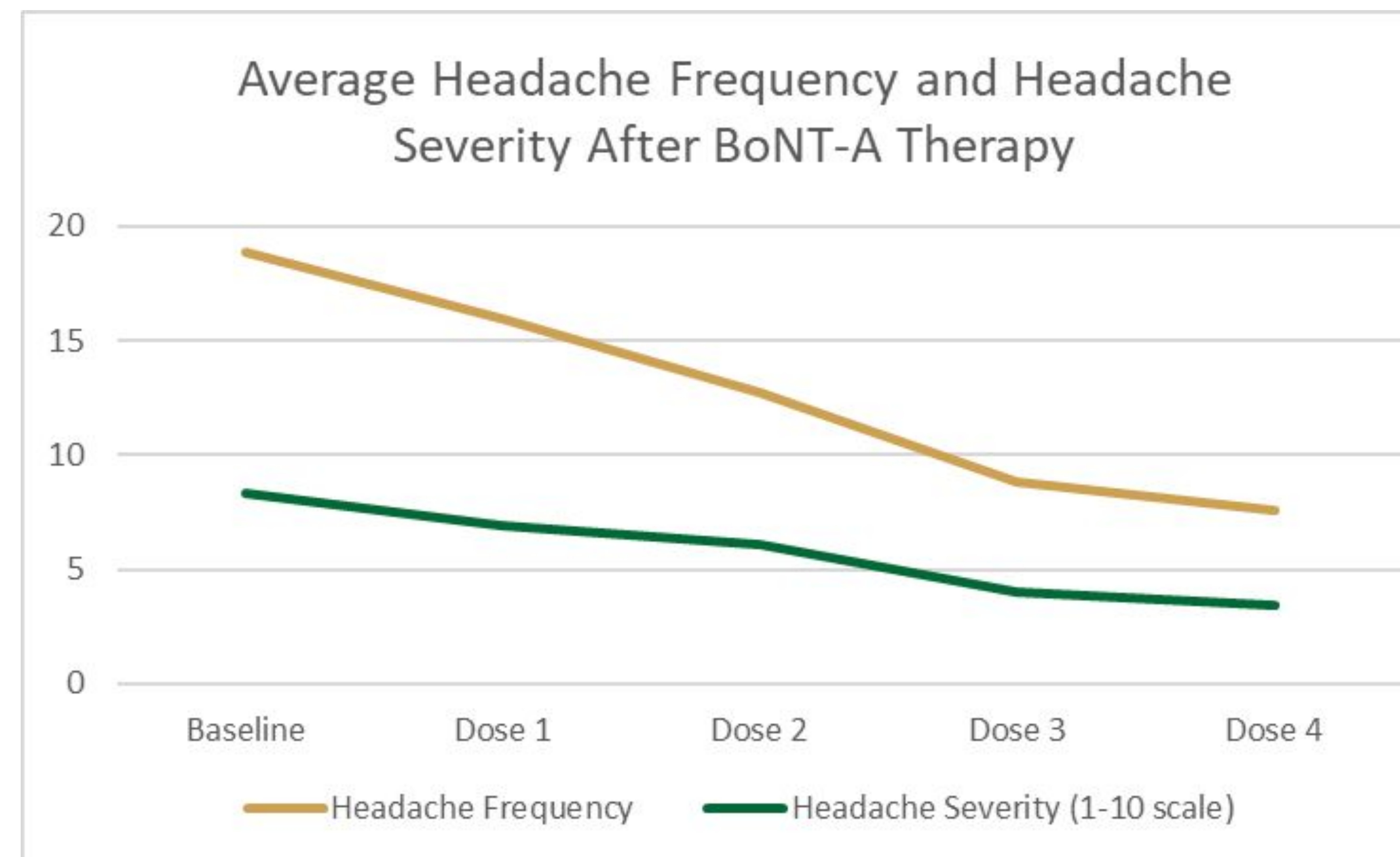
Purpose

To assess the efficacy of BoNT-A therapy at different dose intervals

Methods

- A retrospective and prospective analysis of 37 patients at Dayton Children's aged 13-21 yo
- Patients received the standard 31 injection, 155 unit's protocol⁵⁻⁷
 - Underwent four rounds of BoNT-A therapy with assessment every 3 months
- 25 of the 37 patients responded to the BoNT-A therapy
 - Responders were defined as patients with a 50% reduction in headache frequency from baseline

Results

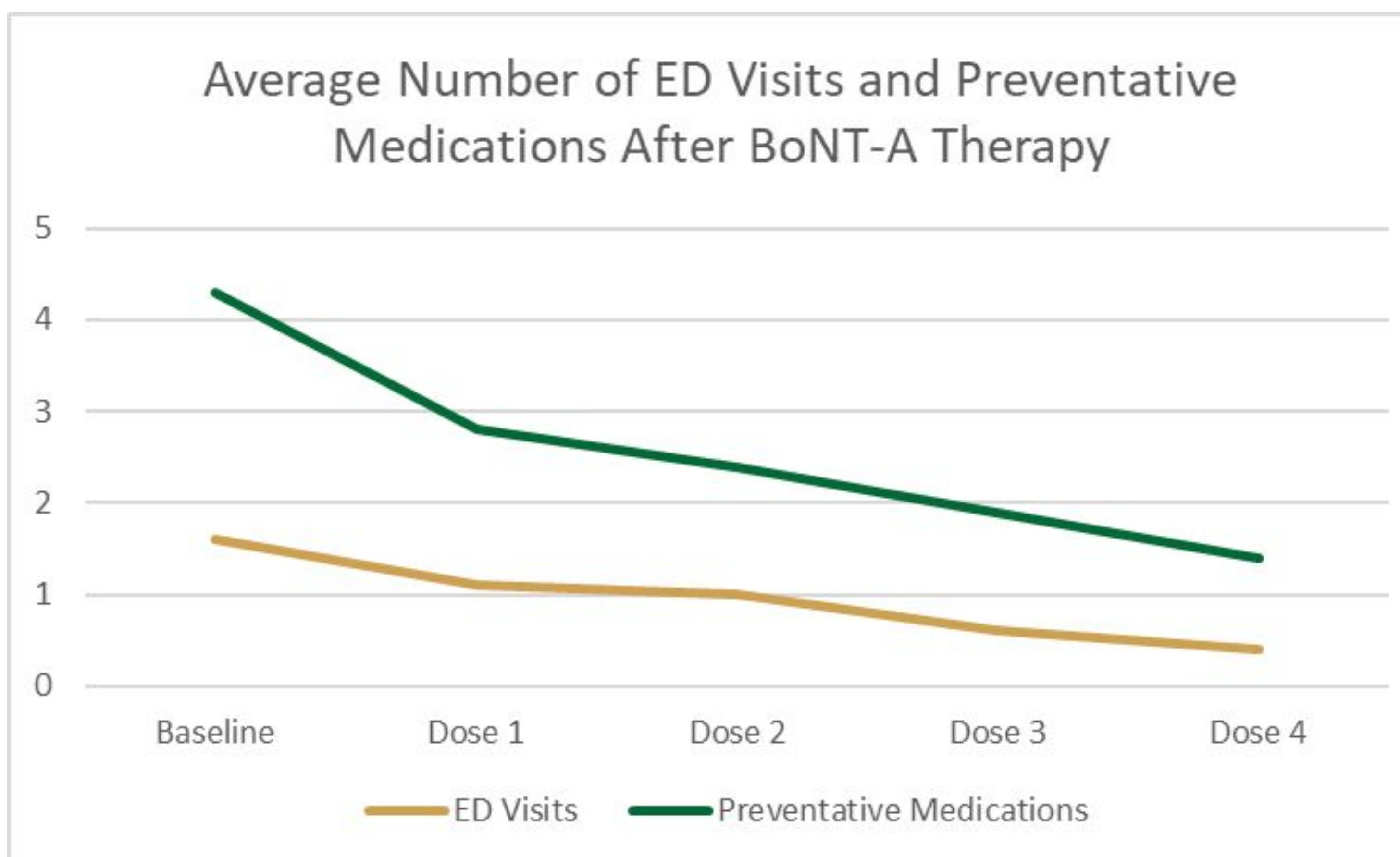


Statistical test / Comparison	P value
Friedman test: Baseline (D0) through Dose 4 (D4)	<0.001
Dunn-Bonferroni post hoc tests:	
Baseline (D0) vs. Dose 1 (D1)	0.284
Baseline (D0) vs. Dose 2 (D2)	<0.001
Baseline (D0) vs. Dose 3 (D3)	<0.001
Baseline (D0) vs. Dose 4 (D4)	<0.001

Table 1. Headache frequency p-values

Statistical test / Comparison	P value
Friedman test: Baseline (D0) through Dose 4 (D4)	<0.001
Dunn-Bonferroni post hoc tests:	
Baseline (D0) vs. Dose 1 (D1)	0.157
Baseline (D0) vs. Dose 2 (D2)	<0.001
Baseline (D0) vs. Dose 3 (D3)	<0.001
Baseline (D0) vs. Dose 4 (D4)	<0.001

Table 2. Headache severity p-values



Statistical test / Comparison	P value
Friedman test: Baseline (D0) through Dose 4 (D4)	<0.001
Dunn-Bonferroni post hoc tests:	
Baseline (D0) vs. Dose 1 (D1)	1.000
Baseline (D0) vs. Dose 2 (D2)	0.318
Baseline (D0) vs. Dose 3 (D3)	0.001
Baseline (D0) vs. Dose 4 (D4)	<0.001

Table 3. Number of ED visits p-values

Statistical test / Comparison	P value
Friedman test: Baseline (D0) through Dose 4 (D4)	<0.001
Dunn-Bonferroni post hoc tests:	
Baseline (D0) vs. Dose 1 (D1)	0.024
Baseline (D0) vs. Dose 2 (D2)	<0.001
Baseline (D0) vs. Dose 3 (D3)	<0.001
Baseline (D0) vs. Dose 4 (D4)	<0.001

Table 4. Number of preventative medications p-values

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Conclusions

- The efficacy of BoNT-A in decreasing the number of preventative medications can be assessed after one treatment session
 - Preventative Medications: 4.3 → 2.4 medications
- The efficacy of BoNT-A in decreasing headache frequency and severity can be assessed after two treatment sessions
 - Frequency: 18 → 12 times per 28 days
 - Severity: 8 → 6 out of 10 points
- The efficacy of BoNT-A in decreasing the number of ED visits was assessed after three sessions
 - ED Visits: 1.6 → 1 visit per 28 days
- Additional efficacy was obtained with a third and fourth session of BoNT-A
- BoNT-A is a safe, effective treatment for pediatric migraines at 9 months follow-up

Future Directions

- BoNT-A is a viable treatment option for short term pediatric migraines, and continued study of BoNT-A usage in long term management is warranted
- There is a lack of literature on migraine and migraine management in the AAPI community^{8,9}
 - The estimate of AAPI individuals affected by migraine is less than the global average, however it is estimated to affect around 23 to 65 million individuals⁸
 - Further study is needed on how migraines affect and can be effectively managed in the AAPI community