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Trigeminal Neuralgia and Other Cranial Neuropathies

IHC25-OR-001

Efficacy and Safety of Non-paralytic Botulinum Toxin A in a Facial Pain Animal Model

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Objective: Trigeminal neuralgia (TN) and other chronic facial pain disorders are excruciating conditions, with significant burden and suicidal risk. Current preventative pharmacotherapies are often limited by poor specificity, inadequate efficacy, and severe side effects. To address these limitations, recombinant botulinum toxin A (BoNT/A) molecules (el-Bitox/A) with retained analgesia but minimal paralytic activity have been developed. This study evaluates the analgesic efficacy and safety of repeated escalating doses of el-Bitox/A compared to native BoNT/A in a chronic infraorbital nerve constriction animal model.

Methods: A chronic constriction injury of the infraorbital nerve (IoN-CCI) was used to induce chronic facial pain in male and female rats. Mechanical allodynia was assessed using von Frey filaments over a 13-week period post-surgery. el-Bitox/A (5, 20, 100 ng) and BoNT/A (2.5, 5 U) were administered subcutaneously into the ipsilateral V2 area at weeks 1 and 8 post-surgery. Bodyweight was monitored as an indirect measure of potential facial paralysis, resultant from reduced jaw strength and impaired food consumption.

Results: Both el-Bitox/A and BoNT/A produced a dose-dependent reversal of mechanical allodynia ($n = 5–7$ per group; $P < 0.05$). el-Bitox/A reached maximal efficacy at the 20 ng dose, with no significant improvement at 100 ng effect. Analgesia lasted for both molecules for at least 30 days post-injection, and efficacy comparable between the first and second administrations. BoNT/A, but not el-Bitox/A, induced significant bodyweight loss ($P < 0.05$ vs. $P = 0.2$), confirming the non-paralytic profile of el- Bitox/A. Vehicle had no effect in both parameters ($n = 6$ per group).

Conclusion: Both BoNT/A and el-Bitox/A effectively reversed mechanical hypersensitivity with sustained effects in the IoN-CCI facial pain model. However, BoNT/A has significant serious side effects that can be avoided by using the non-paralytic el-Bitox/A, highlighting it as an innovative treatment for facial pain conditions.

Disclosure of Interest: APA reports Society Leadership/Board position: Trustee of the International Headache Society; Chair Headache SIG of British Pain Society; Member of Coordinating Panel on Neuroscience/Translational Neurology of the European Academy of Neurology; eCampus representative of the Headache SIG of the European Academy of Neurology; Member of Neuroscience Leadership Group of King's Health Partners Professional membership: International Headache Society; British Association for the Study of Headache; British Pain Society; European Academy of Neurology Personal fees: Speaker honoraria Abbvie, Eli Lilly, Pfizer, Organon Research support: Support to institution by Brain Research UK, Medical Research Council, Medical Research Foundation, Rosetrees, Migraine Trust Data safety monitoring/Advisory board: Eli Lilly, Abbvie, Neuresta Clinical trials involvement: Eli Lilly, Teva Relationship with scientific journals: Associate Editor Frontiers of Neurology; Editorial Board of Cephalalgia, Toxins, Journal of Clinical Medicine Commercial interests: None BD reports commercial interests: Neuresta Inc ADP: None

were audio-recorded and transcribed. Reflexive thematic analysis was performed to refine codes and interpret key themes from the data. Four research meetings were held.

Results: Four themes were interpreted. Theme 1 was that the science mattered. Participants wanted evidence-based, neuroanatomical and physiological information to explain what migraine is, why they experience those symptoms, and how to self-manage. The science should be explained simply but not overly simplified. Analogy was popular for framing complex concepts but clear scientific diagrams were also preferred. Theme 2 was validation. Knowledge of migraine enabled self- compassion, reflection and acceptance which led to better self-management strategies such as pacing, exercise and stress relief. External validation from others through sharing of knowledge further encouraged these strategies. Theme 3 described tailoring of information for the population and the individual. The information had to reflect diversity in people yet remain relatable for each person. This meant that the clinician delivering information needed a thorough understanding of each patient's experiences and circumstances so as to individualise content, delivery and pacing of information. Lengthy, crowded and bright visuals were to be avoided. Participants overwhelmingly wanted positive language and framing of their condition. This is related to Theme 4 of empowerment and positivity. Theme 4 described the strong sense of positivity participants wanted projected by the information and the empowerment they gained from it. Participants wanted migraine described as a condition that can be managed and quality of life improved, not a "disability". Knowledge gave a sense of control. Self-management strategies with personal relevance were empowering.

Conclusion: Patients want scientific, validating, positive and relatable information that will empower self-management in migraine.

Disclosure of Interest: ZL and MC report using the education information resource in paid clinical settings with patients attending physiotherapy. MC and ZL also teach on courses which may include some of the material in the information resource from this study. Remaining authors: None.

IHC25-PO-165

Development of the EMHA Migraine Scoring System

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Objective: The EMHA developed the Migraine Scoring System to enhance patient-clinician communication about migraine burden and reduce stigma, offering a practical tool for patients in clinical and advocacy contexts. Though not intended for diagnosis, it may help track meaningful changes in severity over time (e.g., transitions between episodic and chronic migraine). Development followed key opinion leader workshops and pilot testing in a Spanish patient cohort ($n \approx 300$). The final 4-item tool assesses: (1) monthly headache days, (2) effectiveness of acute medication (days with "good response"), (3) pain intensity, and (4) overall attack intensity (categorical scale). This is the first psychometric validation of the tool, as a step toward broader multilingual implementation.

Methods: Psychometric evaluation in the Spanish cohort included confirmatory factor analysis (CFA) to assess dimensionality and internal consistency using reliability coefficients. Measurement invariance tested whether the scale functioned equivalently across genders. The same methodology is planned for multilingual validation in Danish, Dutch, German, Greek, and Portuguese.

Results: CFA supported a unidimensional model with excellent fit (CFI = 1.000, TLI = 1.001, RMSEA = 0.000, SRMR = 0.002), with the general factor explaining 74.4% of variance. Internal consistency was acceptable (Cronbach's $\alpha = 0.73$) and higher when adjusting for item weightings (Omega Total = 0.83). Measurement invariance confirmed full equivalence across gender, supporting cross-group comparisons.

Conclusion: The EMHA Migraine Scoring System is unidimensional, interpretable, and standardized tool with adequate psychometric properties. Ongoing multilingual validation in five European languages will assess its broader applicability.

Disclosure of Interest: None.

Headache Epidemiology, Outcomes and Burden

IHC25-PO-166

A Cross-Sectional Analysis of Medication Overuse and Health-Seeking Behaviours for Primary Headaches in Communities with Low Access to Headache Care

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Objective: To determine the prevalence and identify factors associated with medication overuse for primary headaches, and to assess health-seeking behaviours for headaches in communities with low access to headache care in Cameroon.

Methods: We conducted a multiclustered cross-sectional study in 10 selected communities in the North West region of Cameroon among adolescents and young adults with a primary headache disorder. We included individuals aged 15 and above who reported experiencing at least one type of primary headache disorder based n the International Headache Society (IHS) diagnostic criteria for primary headache disorders. Medication overuse was diagnosed using the IHS diagnostic criteria for medication overuse. Participants were also questioned on their usual health-seeking behaviors during a headache attack. We conducted univariate and multivariate analyses to identify the factors associated with medication overuse. All P values < 0.05 were considered statistically significant.

Results: One thousand and twenty-nine (1029) participants were included with a mean age of 24.83 ± 5.57. Females accounted for 57.24% of the participants. The prevalence of medication overuse was 18.95% (195/1029) with paracetamol being the most commonly overused medication. Factors associated with medication overuse included chronic headaches, menstrual headaches, migraines, and headache severity. A substantial proportion of participants (69.68%) delayed seeking headache care in a health facility, citing high cost of care(42.5%) and headaches not being a serious condition (18.2%) as primary reasons.

Conclusion: The high prevalence of medication overuse and poor health-seeking behaviors in our study highlights the urgent need to improve access to headache care. A multi-strategic approach involving reduction of the financial cost associated with the treatment of a PHD, increasing health literacy, and building local capacity is critical toward reducing medication overuse and delays in seeking headache care.

Disclosure of Interest: None.

IHC25-PO-167

Analysis of Complicated Migraine Treatment in the Northern Region of Brazil

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Objective: To analyze the distribution of hospitalizations, hospital mortality rates, and public expenditures related to the treatment of complicated migraine in Brazil's Northern Region from 2019 to 2024.

Methods: This descriptive, retrospective, cross-sectional study utilized publicly available secondary data from the Hospital Information System (SIH/SUS), accessed through the Department of Informatics of the SUS (DATASUS). Hospitalizations were categorized by year, state, and type of admission (elective or urgent). Data were analyzed using Microsoft Excel to assess hospitalization rates, geographic distribution, and associated hospital service costs.

Results: Between 2019 and 2024, 3,427 hospitalizations for complicated migraine were recorded in the Northern Region. The state of Pará accounted for nearly half of these cases (1,696; 49.48%), and 2023 registered the highest annual