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Physiotherapy and basic headache research: Why using a pre-post design?

Sarah Mingels[1,2], Marita Granitzer[1]
[1]REVAL Rehabilitation Research Centre, Biomedical Research Institute, Faculty of Medicine and Life Sciences, Hasselt University, 3590-Belgium; [2]Musculoskeletal Research Unit, Department of Rehabilitation Sciences, Faculty of Kinesiology and Rehabilitation Sciences, Leuven University, 3000-Belgium
Correspondence: Sarah Mingels (sarah.mingels@uhasselt.be)
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Background
In physiotherapy, headache-research is often limited to instantaneous cross-sectional measurements of e.g. cervical mobility. However, a longitudinal task might affect baseline outcomes. Understanding the influence of the latter on headache features is relevant to develop preventive guidelines. Materials and methods
Design. A pre-post design was set up to compare 'Pressure Pain Thresholds (PPT)' and maximal active cervical range of motion (CROM) before (pre-test) and after (post-test) a writing task between 18 females with headache (23.2±1.7 years) and 18 matched controls (23.6±2.2 years). Criteria. Headache-group inclusion-criteria were: females between 18-30 years, meeting the diagnostic criteria of episodic tension-type headache according to the International Headache Society, headache provoked by posture. Exclusion-criteria: pregnancy, physiotherapy for headache 12 months before the study, serious pathology and a history of neck or head trauma. Control-group inclusion-criteria were: healthy age-matched females. Exclusion-criteria: pregnancy, history of neck or head trauma. Measurements and outcomes. Bilateral PPT, measured with the Somedic Algometer (slope 30kPa/s/cm^2) in the anterior temporal, suboccipital, upper trapezius and anterior tibial muscles and maximal active flexion and extension CROM, measured with the Cervical Range of Motion device (°) were primary outcomes. Headache frequency, duration and intensity were secondary outcomes extracted from a headache diary. Statistics. Data-analysis was done with a 95% confidence level ($p<0.05$). Normality was evaluated by the Shapiro-Wilk test, comparisons within and between groups by the Wilcoxon Signed Rank respectively Mann-Whitney U-test. Ethics. Approval by the Medical Ethical Committee of the 'Ziekenhuis Oost-Limburg' (B371201423025).
Results
At baseline only maximal active flexion CROM differed significantly ($p=0.022$) between groups with lower values in the Headache-group. From pre-to post-test the Headache-group compared to the Control-group showed a significant: 1) PPT reduction vs. an increase in the Control-group in the anterior temporal left and right ($p=0.0290$; $p=0.0051$) and the upper trapezius right ($p=0.0237$) and 2) larger drop in maximal active extension CROM ($p=0.012$) (Headache-group: post 59.65°±8.19; pre 69.59°±6.28 vs Control-group: post 67.39°±6.96; pre 71.85° ±10.85).
Conclusion
In the Headache-group the performance of a simple writing task decreased PPT and maximal active CROM. These results are closely related with sensitization. Physiotherapists should be aware that baseline characteristics of patients with headache and healthy controls are comparable. However, the baseline headache profile can be influenced by a task performance. Longitudinal designs could therefore be relevant to evaluate factors contributing to headache.

Keywords: Headache, pre-post design, writing task.

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Real-life use of onabotulinumtoxinA for the symptomatic treatment of chronic migraine: The Repose Study

Fayyaz Ahmed,[1] Charly Gaul,[2] Paolo Martelletti,[3] Juan Carlos Garcia-Monco,[4] Aubrey Manack Adams[5]
[1]Spire Hesslewood Clinic, Hull York Medical School, Brough, Hull, UK; [2]Department of Headache and Facial Pain, Migraine and Headache Clinic, Koenigstein, Germany; [3]Department of Clinical and Molecular Medicine, Sapienza University, Regional Referral Headache Centre, Rome, Italy; [4]Service of Neurology, Hospital de Galdakao, Vizcaya, Spain; [5]Global Medical Affairs, Allergan plc, Irvine, CA, USA
Correspondence: Fayyaz Ahmed (fayyaz.ahmed@hey.nhs.uk)
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Background
The REPOSE Study, a European, multicenter, prospective, non-interventional study, investigated the effectiveness and safety of real-life use of onabotulinumtoxinA for chronic migraine (CM).
Materials and Methods
Adults prescribed onabotulinumtoxinA for CM were enrolled. Patients received onabotulinumtoxinA approximately every 12 weeks according to their physician's usual practice, guided by the Summary of Product Characteristics. OnabotulinumtoxinA injection practices, safety, headache-day frequency, and Migraine Specific Quality of Life Questionnaire (MSQ) were collected at baseline and follow-up visits.
Results
Among 644 patients enrolled, 633 patients received ≥1 onabotulinumtoxinA dose for a total of 3499 onabotulinumtoxinA treatments. Patients had a mean (SD) age of 45.4 (12) years, were typically women (85.3%) and had a mean of 20.6 headache days/month. The median dose and median number of injection sites of onabotulinumtoxinA per session (baseline up to follow-up session 8) was 155 U and 31 sites, respectively. Through follow-up session 8, patient-reported estimates of headache days/month (≥4 hours) were significantly reduced from baseline ($P<0.001$ at each follow-up session, Fig. 1). The MSQ domain scores (Role Restrictive, Preventive, and Emotional) were significantly reduced from baseline at each follow-up session. Adverse drug reactions, typically of mild to moderate severity, were reported by 18.3% of patients; eyelid ptosis (5.4%), neck pain (3.0%), and musculoskeletal stiffness (2.7%) were most frequently reported.
Conclusion
Preventive treatment of CM with onabotulinumtoxinA in a longer-term (24-month) real-world setting sustains a reduction in the frequency of headache days and significantly improves quality of life relative to baseline. No new safety concerns were identified.

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