

EMG Assessment Of The Efficacy Of Therapy On TMDs

Objective

To evaluate the effectiveness using surface **electromyography (sEMG)** of soft tissue therapy and therapeutic exercises in female patients with pain, increased masseter muscle tension and limited mandibular mobility due to temporomandibular joint disorders (TMDs). The authors focused on the analgesic and myorelaxant use of massage, post-isometric muscle relaxation (PIR) and therapeutic exercise in TMD patients.

Results

Analysis of the results between methods showed that self-therapy had an analgesic effect only after eight treatments, while PIR after three treatments and massage after one session. Each of the proposed forms of therapy showed a minimal clinically significant difference in the sEMG parameter at the endpoint. The researchers found that soft tissue manual therapy and therapeutic exercise are simple and safe interventions that can potentially benefit patients with myogenic pain.

Participants and Researchers

The study consisted of 82 women - Group 1 (G1) - between 20 and 45 years of age (median age 28.1) with myofascial pain with restricted mobility and limited mouth opening. The control group - Group 2 (G2) - consisted of 104 women without diagnosed TMDs.

The researchers were *Magdalena Gębska* and *Łukasz Kołodziej* from the Department of Rehabilitation Musculoskeletal System, Pomeranian Medical University, Szczecin, Poland; *Bartosz Dalewski*, Department of Dental Prosthetics, Pomeranian Medical University, and *Łukasz Pałka*, Private Dental Practice, Zary,, Poland.

Methods

All women underwent an intra-oral and extra-oral dental examinations performed by orofacial pain trained dentists. Diagnostic **electromyography** procedures were performed in both groups with sEMG of the masseter muscles at baseline and during exercise, the measurement of TMJ mobility and assessment of pain intensity using **sEMG** bioelectric activity.

The EMG recordings from the masseter muscles were performed with a two-channel **NeuroTrac MyoPlus2** device (Verity Medical) with **NeuroTrac** software. Clinical Mode EMG was used during the study.

The G1 group was randomly divided into three therapeutic groups in which the therapy was carried out for ten days. After five and ten days of therapy, bilateral **sEMG** signals of the masseter muscles were acquired. The authors concluded that people with TMD should receive at least six manual therapy sessions to improve the bioelectrical function of the masseter muscle, with massage combined with autotherapy appearing to be a more effective therapy than PIR and autotherapy, which should be taken into account when selecting the form of therapy.

The full abstract can be found at <https://pubmed.ncbi.nlm.nih.gov/37684652/> or <https://doi.org/10.1186/s13005-023-00385-y>