

Optimization of Rehabilitation in Scapulohumeral Periarthrosis Using Botulinum Toxin

Authors : M. A. Akulov, V. O. Zaharov, A. A. Tomskij

Abstract : Introduction: Scapulohumeral periarthrosis, resulting as a reaction to mechanical injury of shoulder tendons and muscles, is associated with high incidence of temporal and permanent disability. There is a strong need for investigation of treatment of that patient group. Severe pain leads to limitation of movements range, which result in secondary alterations of joint capsule and ligamentous apparatus. Muscle tension and edema, swelling of fascial and fibrous structures result in nerve and vascular compression in intramuscular and osseo-muscular-fibrous spaces. Botulinum toxin injection leads to decrease of muscle tone, increase of movements range and associated pain alleviation. Study aim: Optimization of rehabilitation process in scapulohumeral periarthrosis using Xeomin. Patients and methods: 40 patients aged 37-56 years with scapulohumeral periarthrosis were evaluated. Patients were divided into two groups according to treatment regimen. The first (main) group included 21 patients, receiving intramuscular Xeomin 150-200 U in the area of brachio-scapular joint and trigger points (inducing motion range limitation and pain). Treatment procedures were combined with physical therapy and osteopathic procedures. The second (control) group included 19 patients, receiving conventional physical therapy and osteopathic procedures. The evaluation and efficacy comparison was carried out using McGill pain questionnaire, Clinical Global Impression scale (CGI), and patient-reported increase of brachio-scapular joint movement range and pain decrease at 1, 3 and 6 months of treatment. Results. The study demonstrated a significant improvement in the main group after one month of treatment, which persisted during months of treatment. At baseline, rank pain index on McGill pain questionnaire was $18,4 \pm 4,9$ and $17,8 \pm 5,1$ in the main and control group, respectively ($p > 0,05$). At 1 month of treatment we observed a significant decrease of pain syndrome (no pain or modest pain) and increase of movement range in angular degrees in the main group ($p < 0,05$). In the control group significant improvements were observed only on the 3 month of treatment ($p < 0,05$), but at 6 months of treatment the improvement in pain syndrome and motion range in brachio-scapular joint was significantly smaller, than in the main group. Rank pain index on McGill pain scale was $5,2 \pm 1,8$ in the main group compared to $12,0 \pm 2,6$ in the control group ($p < 0,05$). At 6 months of treatment patients in the first group reported a significant/highly significant improvement of general health on CGI, whereas in the second group most patients reported a minimal improvement. We observed a sustained and persistent improvement of motion range in brachio-scapular joint in the main group. Conclusion: Xeomin injections as a part of rehabilitation process in scapulohumeral periarthrosis lead to reduced time and increased quality of rehabilitation.

Keywords : botulinum toxin, rehabilitation, scapulohumeral periarthrosis

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