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Botulinum Toxin a in the Treatment of Late Facial Nerve Palsy Complications

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Abstract : Introduction: One of the common postoperative complications of posterior cranial fossa (PCF) and cerebello-pontine angle tumor treatment is a facial nerve palsy, which leads to multiple and resistant to treatment impairments of mimic muscles structure and functions. After 4-6 months after facial nerve palsy with insufficient therapeutic intervention patients develop a postparalythic syndrome, which includes such symptoms as mimic muscle insufficiency, mimic muscle contractures, synkinesis and spontaneous muscular twitching. A novel method of treatment is the use of a recent local neuromuscular blocking agent–botulinum toxin A (BTA). Experience of BTA treatment enables an assumption that it can be successfully used in late facial nerve palsy complications to significantly increase quality of life of patients. Study aim. To evaluate the efficacy of botulinum toxin A (BTA) (Xeomin) treatment in patients with late facial nerve palsy complications. Patients and Methods: 31 patients aged 27-59 years 6 months after facial nerve palsy development were evaluated. All patients received conventional treatment, including massage, movement therapy etc. Facial nerve palsy developed after acoustic nerve tumor resection in 23 (74,2%) patients, petroclival meningioma resection – in 8 (25,8%) patients. The first group included 17 (54,8%) patients, receiving BT-therapy; the second group – 14 (45,2%) patients continuing conventional treatment. BT-injections were performed in synkinesis or contracture points 1-2 U on injured site and 2-4 U on healthy side (for symmetry). Facial nerve function was evaluated on 2 and 4 months of therapy according to House-Brackman scale. Pain syndrome alleviation was assessed on VAS. Results: At baseline all patients in the first and second groups demonstrated apostparalytic syndrome. We observed a significant improvement in patients receiving BTA after only one month of treatment. Mean VAS score at baseline was 80,4±18,7 and 77,9±18,2 in the first and second group, respectively. In the first group after one month of treatment we observed a significant decrease of pain syndrome – mean VAS score was 44,7±10,2 ($p<0,01$), whereas in the second group VAS score was as high as 61,8±9,4 points ($p>0,05$). By the 3d month of treatment pain syndrome intensity continued to decrease in both groups, but, the first group demonstrated significantly better results; mean score was 8,2±3,1 and 31,8±4,6 in the first and second group, respectively ($p<0,01$). Total House-Brackman score at baseline was 3,67±0,16 in the first group and 3,74±0,19 in the second group. Treatment resulted in a significant symptom improvement in the first group, with no improvement in the second group. After 4 months of treatment House-Brockman score in the first group was 3,1-fold lower, than in the second group ($p<0,05$). Conclusion: Botulinum toxin injections decrease postparalytic syndrome symptoms in patients with facial nerve palsy.

Keywords : botulinum toxin, facial nerve palsy, postparalytic syndrome, synkinesis
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