Spasticity patterns and AbobotulinumtoxinA (AboBTA) dosages for the treatment of the hand spasticity in cerebral palsy (CP) patients with GMFCS IV-V

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INTRODUCTION AND AIMS:
- Patients with spastic CP GMFCS IV-V have severe motor defect and multilevel spasticity. The aim of the study was to elicit the main muscles and dosages for the AboBTA injections in the upper extremities of these children.

PATIENTS AND METHODS:
- 333 children with CP aged 1-17 years: 215 (64,6%) with GMFCS IV and 118 (35,4%) with GMFCS V (Table 1). Multilevel ultrasound-guided injections were done into leg and hand muscles with AboBTA (Dysport®, Ipsen Biopharm Ltd, UK). The patients received from 1 to 12 repeated injections.

INCLUSION CRITERIA:
- age from 1 to 17 years 11 months at the time of injection; spastic or spastic-dyskinetic form of CP; GMFCS IV or V level at the time of the first injection; the stability of the BTA drug (AboA) for all injections; presence of the clinical effect in the injected muscles – minimum 1 point muscle tone decrease according to the Modified Ashworth scale in 2-week period after the injection.

RESULTS:
- the most often injected hand muscles were (Pic.1):

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<th>GMFCS IV PATIENTS:</th>
<th>GMFCS V PATIENTS:</th>
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<tr>
<td>m. pronator teres (68,4%), m. biceps brachii+m.brachialis (53,3%), m. brachioradialis (25,1%), m. pectoralis major (21,4%), m. adductor pollicis (14,9%).</td>
<td>m. pronator teres (76,3%), m. biceps brachii+m.brachialis (69,5%), m. adductor pollicis (39,0%), m. brachioradialis (32,2%), m. triceps brachii (27,1%).</td>
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- The dosages for the most often injected muscles are presented in the Table 2. The mean total dosage for one hand was 9.6 U/kg.

CONCLUSION:
- effective hand spasticity treatment in GMFCS IV-V needs quite high dosages of the AboBTA. Described patterns and dosages could be used as a guide for the treatment of these patients.