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NEUROPHYSIOLOGIC STUDY ON SHOCK WAVE THERAPY IN UPPER LIMB SPASTICITY

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The authors report an in-vivo prospective preliminary study to assess the effectiveness of shock waves in the treatment of upper limb spastic muscles in adult patients suffering from central spasticity. In all patients an increase of velocity in the angular movement of the forearm was noted. Video score, acceleration, muscle activation timing were measured. Patients have been subjected to extracorporeal shock waves by means of electromagnetic coil lithotripter; 1500 shots for flexor carpi ulnaris, 1500 for extensor digitorum communis, 1500 for biceps and triceps muscles each were used, the energy was 0.030 mJ/mm². In all patients video polyEMG was recorded. Video polygraphy system for movement analysis was used (Micromed System EEG-EMG, Sampling 1024Hz). Surface EMG were recorded from flexor carpi ulnaris, extensor digitorum communis, biceps and triceps muscles. Surface electrodes with bipolar montage were used. An accelerometer was positioned over the forearm. Video score, acceleration, muscle activation timing were measured before and after extracorporeal shock wave treatments. Follow ups were scheduled at 1, 2 and 3 months. In all patients an increase of velocity was noted in the angular movement of the forearm. Less index of co-contraction was observed from distal and proximal muscles.