

NEUROREHABILITATION ALGORITHMS IN PATIENTS WITH POST-STROKE HEMIPARESIS AND HEMIPARETIC SHOULDER (A COMPARATIVE STUDY OF EIGHT NEUROREHABILITATION COMPLEXES)

Ivet B Koleva¹, Martine Same² and Borislav R Yoshinov³

¹Medical University of Sofia, Bulgaria

²Institut de masso kinésithérapie 'Dahnier' - Saint-Ouen, France

³Medical Faculty of Sofia University, Bulgaria

Aim: Our goal was to evaluate the efficacy of application of different physical modalities and neurorehabilitation methods on independence in activities of daily living (ADL) in patients with post-stroke hemiparesis and hemiparetic shoulder.

Material & Methods: We observed a total of 216 post-stroke patients with hemiparetic shoulder. We effectuate clinical approbation of different neurorehabilitation (NR) algorithms. Patients were randomized into eight therapeutic groups (27 per group). In all patients, the NR course (20 days) includes a basic physiotherapy complex. In group (gr 1) we applied only cryokinesitherapy; in gr 2 - physiotherapy and ergotherapy (occupational therapy). In the next groups we added some pre-formed modality: low frequency low intensity Magnetic Field (gr 3), Interferential Currents (gr 4), Ultrasound (gr 5), Deep Oscillation (gr 6), low-intensity Lasertherapy (gr 7), Functional electrostimulations of the deltoid muscle (gr 8). Patients were controlled before, during and at the end of the NR course (of 20 treatment days) and one month after its end using a battery of clinical methods and functional scales.

Results & Discussion: The comparative analysis of results shows a significant reduction of pain, improvement of functional capacity and autonomy (Brunnstrom, Barthel); increase of the range of motion of the humero-scapular joint (goniometry). Cryokinesitherapy is effective on the orthopedic dysfunction of the humeral joint, ergotherapy is on the range of motion and the functional recovery of the upper extremity. In cases with intensive pain, the magnetic field and deep oscillation are most efficient; in humero-scapular periarthritis, ultrasound and laser therapy are used; in trophic alterations (osteoporosis of the humeral head) – interferential currents and laser therapy are efficient. Goniometrical indices (range of motion of the joint) are significantly increased by electrostimulations and ergotherapy.

Conclusion: We must underline that the structured neurorehabilitation algorithms must be individualized in every case.

Biography

Ivet B Koleva is a Medical Doctor, Specialist in Neurology, Physical and Rehabilitation Medicine (PRM) with European certification in PRM. She has completed three scientific theses: PhD in PRM, PhD in Pedagogics, Doctor of Medical Sciences in PRM [PhD thesis on Physical Prevention and Therapy of Diabetic Polyneuropathy; thesis for Doctor-es-Medical Sciences on Neurorehabilitation in patients with socially important neurological diseases]. She has published more than 100 papers in Bulgarian and international scientific journals, author of monographs and manuals in the fields of Physical Medicine, Neurorehabilitation, Neuro-ergotherapy, Grasp and Gait rehabilitation, Functional evaluation, Pain management. She is a Member of national and international associations of PRM. She is the President of Bulgarian Neurorehabilitation Society and Editor-In-Chief of the Bulgarian scientific magazine Neurorehabilitation (from 2006). Actually, she is Professor at the Medical University of Sofia, Bulgaria.

yvette@cc.bas.bg