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NEUROREHABILITATION OF HEMIPARETIC SHOULDER AND HEMIPARETIC HAND OF POST-STROKE PATIENTS: IMPACT OF MIRROR THERAPY AND FUNCTIONAL ELECTROSTIMULATIONS ON AUTONOMY

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Introduction: Stroke is a socially important disease in industrialized countries, with a high level of prevalence and mortality. Motor weakness and spasticity provoke pathokinesiological dysbalance in the upper extremity, with severe difficulty in everyday activities of stroke survivors.

Aim: Our goal was to evaluate the impact of mirror therapy and functional electrostimulations in the complex neurorehabilitation algorithm in patients with post-stroke hemiparesis, hemiparetic shoulder and hemiparetic hand.

Material & Methods: A total of 171 post-stroke patients with hemiparetic shoulder and hemiparetic hand were observed. Patients were randomized into four therapeutic groups (57 per group). The control was done 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. In all patients, we applied a complex neurorehabilitation (NR) program of physiotherapy, cryotherapy and ergotherapy; including proprioceptive neuromuscular facilitation (Kabath), strength and endurance exercises for shoulder abductors and rotators (rotator cuff muscles), wrist and fingers extensors and flexors, lateral trunk and scapular muscles; grip and grasp training and goal-oriented activities. Group (gr) 1 received only this NR programme. In gr 2, we applied mirror therapy for the hemiparetic hand. In the next group (gr 3), we added functional electrostimulations for the deltoid muscle, for extensors of the wrist and fingers.

Results & Discussion: The comparative analysis of results demonstrates significant pain reduction (visual analogue scale); diminution of spasticity and contracture (Aschworth scale); increase of the range of motion (ROM) of the humeroscapular joint, of the wrist and fingers (goniometry); recovery of the humeroscapular rhythm and the grasp kinesiology; improvement of functional capacity (Brunnstrom), grasp capacity (Box and Block test) and autonomy (FIM)-self-care subscale; Barthel index-subscalses grooming, eating, getting dressed, bathing).

Conclusion: Neurorehabilitation improve patient's autonomy and quality of life

Biography

Ivet Borissova Koleva is a Medical Doctor, Specialist in Neurology and in Physical and Rehabilitation Medicine (PRM), with 30 years of clinical practice in the domain of Neurorehabilitation. She has completed a PhD thesis on physical prevention and therapy of diabetic polyneuropathy and a thesis for Doctor of Medical Sciences on Neurorehabilitation in Patients with Socially Important Neurological Diseases. She received the titles of Associate Professor (2006) and Professor (2010) in PRM. Currently, she is serving as a Professor in the Medical University of Sofia, Bulgaria. She is the author of many scientific papers, monographs and manuals in the fields of neurorehabilitation, neuro-ergotherapy, grasp and gait rehabilitation, functional evaluation, pain management. She is the Member of national and international associations of PRM and President of Bulgarian Neurorehabilitation Society and Editor-in-chief of the Bulgarian scientific journal Neurorehabilitation since 2006.

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