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Abstract

Introduction. Nowadays elderly persons may be frequent victims of traumatic cervical spinal cord injury (CSCI).

Material and method. A retrospective study (January 2019-March 2021) we conducted with the approval of the Ethics Commission of THEBA, to assess the results of the complex medical rehabilitation program during the subacute period. A selected group of 28 elderly tetraplegic patients [7 women (25%) and 21 (75%) men] with traumatic CSCI, were admitted to the THEBA Neuromuscular Rehabilitation Clinic with incomplete (AIS-B, -C, -D) myeloradicular injuries. The female patients had an average age of 71.42 years, 5 of them coming from rural areas and 2 from urban areas. The male patients had an average age of 69.11 years, 10 of them living in rural areas, and 11 in urban areas.

Results. The spine lesion location was at the C2 vertebral level (3 women and 4 men), C3 (1 woman and 4 men), C4 (1 woman and 6 men), C5 (1 woman and 5 men); C6 (a woman); C7 (2 men). The patients' neurological levels of injuries were: C2 (3 women and 4 men), C3 (1 woman and 4 men), C4 (1 woman and 6 men), C5 (1 woman and 5 men), C6 (1 woman) and C7 (2 men). The AIS / Frankel degree at admission, was: complete lesion (AIS-A), in 1 woman, incomplete lesion AIS-B (in 2 male), AIS-C (for 2 women and 10 men), AIS-D (for 4 women and 9 men). The average muscle strength at admission was 62.71 (SD 23.32) for women patients and 59.44 (SD 26.89) for male patients; and at discharge these averages were 70.5 (SD 21.23) for women and 69.22 (SD 27.06) for men. In the study group there were 19 operated patients (3 women and 16 men); in which the anterior osteosynthesis was performed (for 3 women patients and 10 male patients) and respectively posterior vertebral approach (in 6 male patients). The neurological evolution was favorable, so that at discharge there were only patients with incomplete lesions AIS-C (1 woman and 11 men) and AIS-D (6 women and 10 men). The following comorbidities were associated: obesity (2 men), arterial hypertension (7 women and 11 men), diabetes (2 women and 4 men), traumatic brain injury (7 men), chronic alcoholism (2 men), pneumonia (1 woman and 6 men), neoplastic diseases (2 men), osteoporosis (1 woman and 1 man), anemia (1 woman and 1 man), glaucoma (1 woman), depression (1 woman), Lyme disease (1 woman), ischemic heart disease (3 women and 1 man), gastric ulcer in one man and ankylosing spondylitis (2 men). Complications of the immobilization syndrome were enterocolitis (2 men), bronchopneumonia (6 male patients), urinary tract infections (6 women patients and 12 male patients) and bedsores (1 male patient).

Discussion. Effectiveness of the final therapeutic approach was assessed by evaluating (in percentage) the progress of the muscle strength (quantified and compared at discharge vs. admission) reported to the number of days of treatment. Statistics was performed for small groups (Anova and Pearson) to establish the effectiveness of the rehabilitation program, evaluating the level of correlation between the scores quantified with the aforementioned scales. An inversely proportional relationship was found between spasticity and kinetic therapy efficacy (F 0.000, Pearson -0.09), between the PENN scale scores and kinetic therapy efficacy (F 0.000, Pearson -0.24) and a directly proportional relationship between the scores assessing quality of life, FIM and the efficacy of kinetic therapy (F 0.02, Pearson 0.42).

Conclusions. These results underline the importance of a multi-interdisciplinary team approach in the management of elderly tetraplegic patients after CSCI during the subacute post-lesional/ post-operative stage.