



WEB OF SCIENCE

STOICA Simona Isabelle^{1,2}, ANGHELESCU Aurelian^{1,2}, ONOSE Gelu^{1,2}

Balneo and PRM Research Journal

DOI: <http://dx.doi.org/10.12680/balneo.2021.452>

Vol.12, No.3 September 2021

p: L105

Corresponding author ANGHELESCU Aurelian, E-mail: aurelian_anghelescu@umfcd.ro

1. The Teaching Emergency Hospital "Bagdasar-Arseni" (TEHBA), Bucharest, Romania
2. The University of Medicine and Pharmacy "Carol Davila" (UMPCD), Bucharest, Romania

Abstract

Introduction. Nowadays young persons may be frequent victims of traumatic cervical spinal cord injury (CSCI). **Material and methods.** 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 23 young tetraplegic patients with traumatic CSCI, were admitted to the THEBA Neuromuscular Rehabilitation Clinic with incomplete (AIS-B, -C, -D) myeloradicular injuries. All patients were males, aged between 19 and 57 years (with a mean of 44.35 years, SD 12.9). Patients came from urban areas 11 (48%) and the remaining 12 (52%) from rural areas.

Results. The spine lesion location was located at C2 vertebral level (4 men), C3 (4 men), C4 (3 men), C5 (6 men); C6 (in 2 patients); C7 (in 2 men); T6 and T7 in 1 patient each. The patients' neurological levels of injury were: C1 (in 2 patients), C2 (in 2 patients), C3 (in 4 patients), C5 (in 7 patients), C6 (in 4 patients) and C7 (in 2 patients). The AIS/ Frankel degree at admission was: incomplete lesion AIS-B 3 patients, AIS-C 11 patients, AIS-D 9 men. The average muscle strength at admission was 60.72 (SD 25.74). In the study group 20 patients were operated: anterior osteosynthesis was performed in 16 patients and posterior vertebral approach in 4 patients. The neurological evolution was favorable: at discharge there were only patients with incomplete AIS-C (8 men), respectively AIS-D (15 men) grade type of lesions, and their average muscle strength at discharge was 71.97 (SD 22.30). The following comorbidities were associated: arterial hypertension (in 2 patients), traumatic brain injury (in 14 patients), alcoholism (in 9 patients), pneumonia (in 6 patients), neoplastic disorders (in 1 patient), gastric ulcer (in 2 patients), depression (in 2 patients). Complications of the immobilization syndrome were: enterocolitis (in 3 men), bronchopneumonia (in 3 patients), urinary tract infections (in 13 patients) and bedsores (in 2 patients).

Discussion. Effectiveness of the final therapeutic approach was assessed (in percentage) by evaluating the progress of the muscle strength (quantified and compared at discharge vs. admission) reported to the number of days of treatment. The external-internal variations of the numeric scores of the quality of life, FIM, Ashworth and Penn were evaluated. 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 the scales. An inversely proportional relationship was found between spasticity and efficacy of physical therapy (F 0.000, Pearson -0.35), between the scores of Penn scale and the effectiveness of physical therapy (F test 0.000, Pearson -0.18), respectively directly proportional relationship between the kinetic therapy and FIM (F test 0.000, Pearson 0.74), similar to the relationship between physical therapy and the scores assessing the quality of life (F test 0.01, Pearson 0.02).

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