

Spinal cord injuries: The contribution of the early progressive verticalisation to the university clinics of kinshasa

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Objective: Improve the management of patients with spinal cord injuries patients to the University Clinics of Kinshasa, to minimize the occurrence of complications and to shorten time of hospitalization.

Patients and Methods: 32 patients, 28 males and 4 females, the sex ratio is 7 men over 1 woman, whose average age is between 26 and 37 years, admitted to the University Clinics of Kinshasa for spinal cord injuries, during a 12 months (from July 2009 to September 2010). Recruitment was based on the order intake for new patients and was randomized for inpatients.

Methodology: prospective descriptive study, carried out on parameters basis: anthropometric, epidemiological, clinics, treatment and the types of complications observed. All of these parameters collected through questionnaires and clinical investigations from the patients, have defined the characteristics of the study population. ASIA impairment grade was used for neurological evaluation. Early progressive verticalisation, mobilization, electrical stimulation, breathing exercises, bladder retraining and turning in bed have left physical medicine techniques. The calculation of the gravitational stress ($F = m \cdot g \cdot h \cdot \cos \alpha$) of the spine was performed before the early progressive verticalisation after stabilization of injured site by corsets removable or plastered.

Statistics: descriptive statistics helped to present the data as frequencies and proportions, the chi-square test was used for the significance of the results.

Results: on the 32 patients with spinal cord injuries of our sample, 20 patients were 62.5% of traumatic origin, 9 or 45% of non-traumatic origin, and 3 (9.4%) congenital. Among the traumatic etiologies, falls are 31.3, % of patients, followed by highway accidents with 18.8%. For non-traumatic etiologies: tumors 4 patients (12.5%), Pott's disease and spina bifida each represent 9.4% of patients; disc herniation and work accidents are represented with 2 patients or 6, 3% each, and domestic accidents with firearms, 1 case each (3.1%). All 32 patients had neurological deficits at the beginning of the study, distributed as follows ASIA A: 15 patients or 48%; ASIA B: 12 patients (38%) ASIA C: 3 patients (9.1%), ASIA D: 2 patients (6%) and 1 patient ASIA E (3%). The following complications: pressure sores, genital sphincter disorders, joint stiffness and urogenital infections were observed in isolation or in combination in 12 patients or 38%. 8 patients or 25 % received the early progressive verticalisation, including none developed bedsores. No cases of dislocation of the 7 (22%) had received surgery. Neurologic recovery was observed to 27 patients: 7 patients or 20% ASIA C, 10 patients ASIA D. Early verticalisation and the use of plaster corsets or removable, reduced significantly the occurrence of complications compared to an earlier study. Neurologic recovery rate and duration of hospitalization compared to previous studies proved clearly significant ($p=0.015$).

Conclusion: The early progressive verticalisation proved effective in preventing complications and motor recovery in patients on which it was applied.

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