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Epidemiology of cervical spine injuries in elderly in a Level I Trauma Center for a period of ten years (2012-2022)

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Background: Patients over 80 are at increased risk for cervical spine injury, even after low-energy falls. The aim was to collect data on cervical spine injuries in a Tertiary Health Center in Serbia, in people over 80 years old, to perceive the mechanism and type of injury, and the method of treatment, considering the comorbidities presenting in the elderly population.

Design and Methods: This is opservational, descriptive, retrospective, monocentre study for a period of ten years. Gender, age, mechanism of injury, type of injury, neurological deficit, method of treatment, and comorbidities were monitored.

Results: The total number of patients with cervical spine injury was 87. There were 70 patients (80.5%) with an injury of the upper cervical spine, of which 40 patients with a C2 injury (dens), and 17 patients with subaxial cervical spine injury (19.5%). 60 patients were injured by falling on a flat surface (69%), 10 patients were injured in traffic accident (11.5%), and 17 patients were injured by falling from a height (19.5%). All patients had associated comorbidities, most of them had neurological diseases (75; 86.2%). 78 patients had no neurological deficit (89.7%). 78 patients (89.7%) were treated non-operatively.

Discussion: The most common mechanism of injury is falls on a flat surface, and the most frequently injured segment is the upper cervical spine, most often the axis (dens), which correlates with data from the world literature. The most comorbidy was a neurological type, which contributed primarily to easier injuries, mostly at night, as well as to an increase in the incidence of cervical spine injuries in the elderly. In this study, the majority of patients were treated non-operatively. In the largest number of studies, it has been shown that there is no significant difference in the outcome of non-operative and operative treatment, and that injuries of the cervical spine in elderly are associated with a high rate of non-union.