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Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 9(3)

ISSN

1936-900X

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Publication Date

2008

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Outcome Study of Same-Level Falls in The Elderly with Momentary Loss of Consciousness Or Acute Neurological Deficit

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Background: Same-level falls in the elderly may be associated with intracranial and cervical spine injury because of aging changes, co-morbid conditions, and medications such as anticoagulants.

Objectives: To determine the rate of cerebral hemorrhage, intracranial hemorrhage and cervical spinal cord injury after same-level falls in persons 65 and older who had loss of consciousness or acute focal neurological deficit associated with the fall.

Methods: Retrospective, observational outcome study of persons 65 and older who suffered a same-level fall and for whom Emergency Medical Services (EMS) were summoned. Study location was Orange County, California (population three million) and study period was from January 2006 through September 2007. Persons included in the study were reported by EMS to have a same-level fall with associated momentary loss of consciousness or focal neurological deficit. Outcomes of interest were acute cerebral hemorrhage, intracranial hemorrhage, and cervical spinal cord injury. Statistical measures included demographic information and rates for the outcomes of interest with calculated 95% confidence intervals.

Results: During the study period, 131 cases met study inclusion criteria. Mean age was 79.3 +/- 8.0 years and 48% were male. 14% died during acute hospitalization. For the study population of 131, cervical spine injury occurred in 6 cases (5%; 95% CI = 2%, 10%), cerebral hemorrhage in 10 cases (8%; 95% CI = 4%, 13%), and intracranial hemorrhage in 43 cases (33%; 95% CI = 25%, 41%). A total of 59 of 131 same-level falls with loss of consciousness or focal neurological deficit had associated cervical spine injury, cerebral hemorrhage, or intracranial hemorrhage for an overall rate of 45% (95% CI = 37%, 54%).

Conclusions: For persons aged 65 and over, same-level falls with momentary loss of consciousness or acute neurological deficit have a strong association with cerebral hemorrhage, intracranial hemorrhage and cervical spinal cord injury.