# Atlas fracture epidemiology

Commonly missed due to inadequate imaging of occipitocervical junction.

Atlas (C1) fractures represent about 25% of all craniocervical injuries and 2% to 13% of all cervical spine injuries [1)]

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The epidemiology of fractures of the first cervical vertebra-the atlas-has not been well documented. Previous studies concerning atlas fractures focus on treatment and form a weak platform for epidemiologic study.

Matthiessen and Robinson aimed to provide reliable epidemiologic data on atlas fractures. This was a national registry-based cohort study.

A total of 1,537 cases of atlas fractures between 1997 and 2011 from the Swedish National Patient Registry (NPR).

The outcome measures were annual incidence and mortality.

Data from the NPR and the Swedish Cause of Death Registry were extracted, including age, gender, diagnosis, comorbidity, treatment codes, and date of death. The Charlson Comorbidity Index was calculated and a survival analysis performed.

A total of 869 (56.5%) cases were men, and 668 (43.5%) were women. The mean age of the entire population was 64 years. The proportion of atlas fractures of all registered cervical fractures was 10.6%. In 19% of all cases, there was an additional fracture of the axis, and 7% of all cases had additional subaxial cervical fractures. Patients with fractures of the axis were older than patients with isolated atlas fractures. The annual incidence almost doubled during the study period, and in 2011, it was 17 per million inhabitants. The greatest increase in incidence occurred in the elderly population.

Atlas fractures occurred predominantly in the elderly population. Further study is needed to determine the cause of the increasing incidence [2)].

In the majority of cases there were associated with other injuries of the head and spine [3)].

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Acute atlas fractures account for 3–13 % of cervical spine fractures.

56 % of 57 patients had isolated C1 fractures.

44 % had combination C1–C2 fractures

9 % had additional non-contiguous C-spine fractures.

21 % had associated head injury [4)].

# References

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