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## 30-day mortality and survival in elderly patients undergoing neurosurgery

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**Objective:** The aim of the current study is to investigate 30-day mortality and survival in a cohort of elderly patients following emergency and elective neurosurgery.

**Design:** Retrospective cohort study.

**Subject:** Patients greater than 70 years admitted to the Department of Neurosurgery at Sheffield between April 2015 and April 2016.

**Method:** Online patient electronic records were retrieved to gather information. Logistic regression analysis was used to identify predictors of mortality.

**Result:** 388 patients in total of whom 318 were <80 years (group A) and 70 were >80 years (group B). Male:Female 1.2:1; 160 elective and 228 emergency admissions. Overall 30-day mortality=7.5% (14.3% in group B). Mean survival (95% confidence interval) in group A compared with group B=497 days (477-516) vs. 435 days (383-488) ( $p=0.014$ ). Overall cumulative survival at one year was 84%. There was a significant difference in cumulative survival at one-year between elective (95%) and emergency (77%) patients. 81% of patients were discharged back to their usual place of residence (this figure was 60% for group B and 70% for emergency patients). Cranial tumor and vascular diagnosis were diagnostic categories that were independent predictors of mortality ( $p<0.001$  and  $p=0.01$ , respectively).

**Conclusion:** Current selection of elective and emergency elderly patients (including those >80 years) undergoing neurosurgery is associated with a low 30-day mortality and 1-year survival and a high rate of discharge back to previous residence.

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