

Weekend effect on subarachnoid hemorrhage

Pandey et al. from, Ann Arbor, [Michigan](#), performed a serial retrospective [cross sectional study](#) using the [Nationwide Inpatient Sample](#). All [adult](#) discharges with a primary diagnosis of [SAH](#) (ICD-9-CM 435) from 2005 to 2010 were included, and records with [trauma](#) or [arteriovenous malformation](#) were excluded. Unadjusted and adjusted associations between weekend presentation and 3 outcomes (in-hospital mortality, discharge destination, and treatment with [clip](#) vs [coil](#)) were estimated using chi-square tests and multilevel logistic regression.

A total of 46 093 admissions for [spontaneous subarachnoid hemorrhage](#) were included in the sample; 24.6% presented on a weekend, 68.9% on a weekday, and 6.5% had unknown day of presentation. Weekend admission was not a significant predictor of inpatient mortality (25.4% weekend vs 24.9% weekday; $P = .44$), or a combined poor outcome measure of mortality or discharge to long-term acute care or hospice (30.3% weekend vs 29.4% weekday; $P = .23$). Among those treated for aneurysm obliteration, the proportion of clipped vs coiled did not change with weekend vs weekday presentation (21.5% clipped with weekend presentation vs 21.6% weekday, $P = .95$; 21.5% coiled with weekend presentation vs 22.4% weekday, $P = .19$).

Presentation with nontraumatic SAH on a weekend did not influence mortality, discharge destination, or type of treatment received (clip vs coil) compared with weekday presentation ¹⁾.

Deshmukh et al. used data from a prospective audit of aSAH patients admitted between January 2009 and December 2011. The baseline demographic and clinical features of the weekend and weekday groups were compared using the chi-squared test and T-test. Cox proportional hazards models (Proc Phreg in SAS) were used to calculate the adjusted overall hazard of in-hospital death associated with admission on weekend, adjusting for age, sex, baseline WFNS grade, type of treatment received and time from scan to treatment. Sliding dichotomy analysis was used to estimate the difference in outcomes after SAH at 3 months in weekend and weekday admissions.

Those admitted on weekends had a significantly higher scan to treatment time (83.05 ± 83.4 h vs 40.4 ± 53.4 h, $P < 0.0001$) and admission to treatment (71.59 ± 79.8 h vs 27.5 ± 44.3 h, $P < 0.0001$) time. After adjustments for adjusted for relevant covariates weekend admission was statistically significantly associated with excess in-hospital mortality (HR = 2.1, CL [1.13-4.0], $P = 0.01$). After adjustments for all the baseline covariates, the sliding dichotomy analysis did not show effects of weekend admission on long-term outcomes on the good, intermediate and worst prognostic bands.

This study provides important data showing excess in-hospital mortality of patients with SAH on weekend admissions served by the United Kingdom's National Health Service.; However, there were no effects of weekend admission on long-term outcomes ²⁾.

Crowley et al. performed a retrospective cohort study that examined mortality outcomes among patients included in the Nationwide Inpatient Sample (NIS) for 2004. Patients included in the cohort were identified using the International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) code for SAH. Multivariable logistic regression analyses and Cox proportional hazard regression analyses are used to measure the association of weekend admission on mortality for patients with SAH, adjusted for differences in patient characteristics that also contribute to mortality

risk.

Weekend admissions occurred among 27.5% of the 5667 patients with SAH in the NIS database. Weekend admission was not a statistically significant independent predictor of death in the SAH study population at 7 days (OR 1.07, 95% CI 0.91-1.25), 14 days (OR 1.01, 95% CI 0.87-1.17), or 30 days (OR 1.03, 95% CI 0.89-1.19).

Weekend admission is not associated with significantly increased short-term mortality risk among patients hospitalized with SAH ³⁾.

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Pandey AS, Wilkinson DA, Gemmete JJ, Chaudhary N, Thompson BG, Burke JF. Impact of Weekend Presentation on Short-Term Outcomes and Choice of Clipping vs Coiling in Subarachnoid Hemorrhage. *Neurosurgery*. 2017 May 5. doi: 10.1093/neuros/nyx015. [Epub ahead of print] PubMed PMID: 28475807.

²⁾

Deshmukh H, Hinkley M, Dulhanty L, Patel HC, Galea JP. Effect of weekend admission on in-hospital mortality and functional outcomes for patients with acute subarachnoid haemorrhage (SAH). *Acta Neurochir (Wien)*. 2016 May;158(5):829-35. doi: 10.1007/s00701-016-2746-z. Epub 2016 Mar 1. PubMed PMID: 26928730; PubMed Central PMCID: PMC4826657.

³⁾

Crowley RW, Yeoh HK, Stukenborg GJ, Ionescu AA, Kassell NF, Dumont AS. Influence of weekend versus weekday hospital admission on mortality following subarachnoid hemorrhage. Clinical article. *J Neurosurg*. 2009 Jul;111(1):60-6. doi: 10.3171/2008.11.JNS081038. PubMed PMID: 19231928.

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