

30-day Mortality Following Acute Hip Fracture Surgery, the Impact of Surgery Before or After 24 Hours

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Introduction: Hip fracture is common within the elderly population. It is connected with high one-year mortality, observed between 14 - 33%. It requires surgical intervention and admitted care for rehabilitation, a cost-heavy process. Fractures are categorised by where the femur broke, and surgical technique is chosen depending on fracture type.

Aims: To evaluate if delay to surgery, with 24-hour cut off, affected all-cause 30-day mortality and if surgeries over time have been conducted with shorter delay.

Material and Methods: This register study, based on data from The Swedish Perioperative Register (**SPOR**) obtained at Danderyd Hospital, included acute surgeries with studied main diagnostic code. Elective cases were excluded. The cases were divided into two groups with regard to delay to surgery, within or after 24 hours. Demographics, perioperative variables and mortality were evaluated.

Results: All-cause 30-day mortality was 6.6% and 7.6% respectively in groups operated before or after 24 hours but without statistical significance. The largest statistically significant variables affecting mortality were ASA-classification 4 or 5 (OR 9.81, CI 5.72 - 16.82), age (>85 years) (OR 5.83, CI 1.80 - 18.90) and ASA-classification 3 (OR 2.86 (CI 1.76 - 4.64). It was shown that surgeries in 2019 were conducted generally earlier than in 2015 (79 versus 68% operated before 24 hours, $p < 0.003$).

Conclusions: This study did not provide any evidence that delay within or after 24 hours to surgery affect 30-day mortality. The delay was observed shorter in 2019 than 2015. However, being a complex question, further studies are warranted.

Keywords: Hip Fracture, Time to Surgery, Mortality