# Do older surgical patients who undergo emergency operation have higher mortality and longer length of hospitalisation compared to those managed conservatively?

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#### Introduction:

It is unclear whether older surgical patients who undergo emergency operation have higher mortality or longer length of hospitalisation compared to those managed conservatively. We set out to assess the prevalence of operations during emergency surgical admission of older people (≥65 years) and its association with mortality at 30 days post-admission and length of hospitalisation.

#### Methods:

We analysed data from the Older Persons Surgical Outcomes Collaboration (www.OPSOC.eu) (2013 and 2014 data) to calculate the prevalence of emergency operations in older acute surgical admissions. The effect of operation on study outcomes was examined using multivariate logistic regression adjusting for age, gender, polypharmacy, haemoglobin, albumin, and frailty (assessed using the validated 7-point Canadian Study of Health and Ageing clinical frailty score).

**Results:**

#### Data were collected for 727 patients [mean age (standard deviation)= 77.1 (8.2) years, 54% female]. Of them, 185 (25%) underwent emergency operation. Patients that received an operation were younger than those who did not [76(7.7) vs. 78(8.4) years; *P*<0.001]. The prevalence of operation was greater in males (30.2% vs. 23.5% in females; *P*=0.006). There was no difference between operated and non-operated patients for other characteristics under examination (frailty category, polypharmacy, and low serum albumin, or haemoglobin levels). Multivariate analyses showed no association between operation and mortality at 30 days [adjusted odds ratio (AOR)=0.40 (95% CI 0.13-1.25; *P*=0.116)]. Operation was associated with significantly increased odds for longer than median length of hospital stay [AOR = 5.98 (95% CI 3.97-8.99; *P*<0.001)].

#### Conclusions:

A quarter patients from this cohort had an emergency operation during their acute surgical admission in the UK setting. Operation was associated with longer length of hospitalisation but no association with 30 days mortality was demonstrated. Whether there is potential to improve the length of hospitalisation outcome in this patient population through comprehensive geriatric assessment needs to be evaluated.

(299 words- limit is 300)