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## Timing to surgery in elderly patients with small bowel obstruction: An insight on frailty

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### Abstract

**Background:** Small bowel obstruction (SBO) frequently necessitates emergency surgical intervention. The impact of frailty and age on operative outcomes is uncertain. This study evaluated postoperative outcomes of SBO surgery based on patient's age and frailty and explore the optimal timing to operation in elderly and/or frail patients.

**Methods:** Patients who underwent SBO surgery were identified in American College of Surgeons National Surgical Quality Improvement Program database 2005 to 2021. Patients aged  $\geq 65$  years were defined as elderly. Patients with 5-Factor Modified Frailty Index  $\geq 2$  were defined as frail. Multivariable logistic regression was used to compare 30-day postoperative outcomes between elderly frail versus nonfrail patients, as well as between nonfrail young versus elderly patients.

**Results:** There were 49,344 patients who had SBO surgery, with 7,089 (14.37%) patients classified as elderly frail, 17,821 (36.12%) as elderly nonfrail, and 21,849 (44.28%) as young nonfrail. Elderly frail patients had higher mortality (adjusted odds ratio, 1.541;  $p < 0.01$ ) and postoperative complications compared with their elderly nonfrail counterparts; these patients also had longer wait until definitive operation ( $p < 0.01$ ). Among nonfrail patients, when compared with young patients, the elderly had higher mortality (adjusted odds ratio, 2.388;  $p < 0.01$ ) and complications, and longer time to operation ( $p < 0.01$ ). In elderly nonfrail patients, a higher mortality was observed when surgery was postponed after 2 days. Mortality risk for frail elderly patients is heightened from their already higher baseline when surgery is delayed after 4 days.

**Conclusion:** When SBO surgery is postponed for more than 2 days, elderly nonfrail patients have an increased mortality risk. Consequently, upon admission, these patients should be placed under a nasogastric tube and undergo an initial gastrograffin challenge. If there is no contrast in colon, they should be operated on within 2 days. Conversely, elderly frail patients with SBO have a higher mortality risk when surgery is delayed beyond 4 days. Thus, following the same scheme, they should be operated on before 4 days if gastrograffin challenge fails.

**Level of evidence:** Therapeutic/Care Management; Level III.

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