

Surgical Site Infection (SSI) Increases Mortality and Duration of Hospitalization in Elderly Patients

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Background: SSI increases the risk of mortality and morbidity in the general surgical population, but few data on these outcomes exist in the elderly. The objective of this study was to analyze the mortality risk and duration of hospitalization (LOS) attributable to SSI in elderly patients.

Methods: A matched outcomes study was conducted at 8 hospitals. Cases (patients > 64 yrs old with SSI) were prospectively identified between 6/1991-7/2002. Controls were operative patients > 64 yrs old who did not develop SSI and were frequency matched to cases by type and year of procedure and hospital. Variables studied included demographics, comorbidities, functional status, perioperative and hospital risk factors. The outcomes were 1-year post-operative mortality and LOS (including re-admissions) during the 90-day postoperative period. Independent relationships between variables and outcomes were identified using conditional logistic regression and matched linear regression.

Results: 569 SSI cases were identified and 589 controls were selected. The most frequent procedures were cardiothoracic (n=381, 32.9%), orthopedic (n=362, 31.3%) and gastrointestinal (n=269, 23.2%). The most common pathogen was *Staphylococcus aureus* (279/569, 49.0%; 163/569, 28.6% were methicillin-resistant). The mean age of the cohort was 73.9 yrs and 43.8% were male. 1-year mortality was 24.4% for cases and 11.5% for controls. LOS was greater for cases than controls (mean 24.5 and 7.8 days). In multivariate analysis, SSI was a predictor of 1-year mortality (OR 3.72, 95% CI 2.20 6.28). Other predictors included metastatic malignancy, peptic ulcer disease and inability to bathe independently. SSI was associated with a 3.11 fold increase in LOS (95% CI 2.81, 3.44). Other predictors of increased LOS were prolonged surgery, inability to bathe independently, urine incontinence, hyperglycemia and hospital admission before surgery.

Conclusion: SSI poses a serious threat to elderly surgical patients by more than tripling the risk for mortality and increasing the duration of hospitalization by more than two weeks on average.