

### Incidence and Mortality of Myocardial Injury after Noncardiac Surgery across Surgical Specialties in a Population of Veterans



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**INTRODUCTION:** Myocardial injury after noncardiac surgery (MINS), defined as asymptomatic post-operative troponin elevation not meeting the threshold for diagnosis of myocardial infarction, has previously been associated with postoperative mortality in non-veteran populations. In this single-center analysis, we defined the incidence of MINS and compared mortality in veterans with and without MINS across surgical specialties.

**METHODS:** Screening troponin was prospectively collected on postoperative days 1 and 3 between August 11, 2015 and December 14, 2017 on inpatients > 45 years of age at a tertiary VA hospital. Cardiac surgery patients were excluded. MINS was defined as screening cardiac troponin T level of  $\geq 0.03$  ng/mL. Mortality rates were compared using Fisher's exact test.

**RESULTS:** A total of 2,552 of 3,752 eligible patients were screened, and 12.3% developed MINS. Thirty-day mortality in patients with MINS was 5.1% vs 0.5% in patients without MINS (odds ratio [OR] 10.8 [5.0-23.6],  $p < 0.01$ ); 90-day mortality was 9.5% vs 1.2% (OR 9.0 [5.2-15.4],  $p < 0.01$ ). MINS 30-day and 90-day mortality were significantly increased in general surgery (6.7% vs 0.5%,  $p = 0.03$ ; 16.7% vs 1.9%,  $p < 0.01$ ), vascular surgery (4.7% vs 1.0%,  $p < 0.01$ ; 8.9% vs 1.3%,  $p < 0.01$ ), and otolaryngology patients (25% vs 0% for both,  $p = 0.04$ ). MINS 90-day mortality was also significantly increased after orthopaedic surgery (8.3% vs 0.8%,  $p < 0.01$ ).

**CONCLUSIONS:** MINS occurred in 12.3% of the study population and was associated with all-cause 30-day and 90-day postoperative mortality, both in the overall surgical population of veterans and within several individual surgical specialties (general surgery, vascular surgery, otolaryngology, and orthopaedic surgery). Further study of the causes, treatment, and prevention of MINS is needed.

### Nationwide Longitudinal Study of Independent Risk Factors for Acute Respiratory Distress Syndrome after Trauma



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WITHDRAWN

### Incidence of Myocardial Infarctions and Hospital Costs in Surgical Intensive Care Unit Patients Reduced by Fifty Percent Using Daily, High Dose Vitamin D Supplementation



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**INTRODUCTION:** Chronic inflammation/oxidative stress play a very important role in the pathogenesis of myocardial infarctions. We hypothesized that vitamin D (a secosteroid hormone with anti-inflammatory capabilities) would reduce the incidence, length of stay, and hospital costs in surgical intensive care unit patients.

**METHODS:** We performed a prospective study of 565 patients divided into two groups admitted to the surgical intensive care unit at Grady Memorial Hospital between August 2009 and August 2012. Group 1 was treated with vitamin D 50,000 international units weekly. Group 2 was treated with vitamin D 50,000 international units daily. Primary outcomes were incidence of myocardial infarctions, length of stay, and cost. There were not any statistical differences between the 2 groups in terms of

demographics: age, sex, race, serum albumin, CD4 count, or baseline vitamin D levels.

**RESULTS:** The number/incidence of myocardial infarctions in Group 1 was 22 (7.8%) and 11 (3.9%) in Group 2 (p value 0.047). The length of stay for the 22 patients in Group 1 who had a myocardial infarctions was 36.1 days and 8.2 days for the 11 patients in Group 2 (p value 0.007). The intensive care unit

cost for the 22 patients in Group 1 who had a myocardial infarction was \$138,991 and \$31,549 for the 11 patients in Group 2 (p value 0.0005).

**CONCLUSIONS:** Our study demonstrates that vitamin D deficiency is associated with an increased incidence of myocardial infarctions, cost, and length of stay. Further studies are needed to fully assess the impact of vitamin D on cardiovascular health.