

### **Impact of positive fluid balance on critically ill surgical patients: A prospective observational study.**

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The purpose of this study is to determine the effect of postoperative fluid balance (FB) on subsequent outcomes in acute care surgery (ACS) patients admitted to the surgical intensive care unit (ICU). Acute care surgery patients admitted to the surgical ICU from 06/2012 to 01/2013 were followed up prospectively. Patients were stratified by FB into FB-positive (+) and FB-negative (-) groups by surgical ICU day 5 or day of discharge from the surgical ICU. A total of 144 ACS patients met inclusion criteria. Although there was no statistically significant difference in crude mortality (11% for FB [-] vs 15.5% for FB [+];  $P = .422$ ), after adjusting for confounding factors, achieving an FB (-) status by day 5 during the surgical ICU stay was associated with an almost 70% survival benefit (adjusted odds ratio [95% confidence interval], 0.31 [0.13, 0.76];  $P = .010$ ). In addition, achieving a fluid negative status by day 1 provided a protective effect for both overall and infectious complications (adjusted odds ratio [95% confidence interval], 0.63 [0.45, 0.88];  $P = .006$  and 0.64 [0.46, 0.90];  $P = .010$ , respectively). In a cohort of critically ill ACS patients, achieving FB (-) status early during surgical ICU admission was associated with a nearly 70% reduction in the risk for mortality.