

THE EFFECT OF COMORBIDITIES ON CRITICALLY ILL TRAUMA PATIENTS ON THE NATIONAL STUDY ON COST AND OUTCOMES OF TRAUMA (NSCOT).

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Introduction: Trauma patients admitted to ICU represented roughly 718,500 patients in the year 2006 (total of a 1,500,00 ICU hospital days). A crucial part of the management of trauma patients relies on addressing the impact that comorbidities on outcomes. **Hypothesis:** Whether comorbidities have an impact on mortality, and secondarily on length of stay and likelihood of readmission to the ICU of critically ill trauma patients. **Methods:** Multicenter prospective cohort study (National Study on Cost and Outcomes of Trauma, -NSCOT-) including 69 participating hospitals in the United States and a total of 2734 trauma patients admitted to ICU, between July 2001 and November 2002. Univariate regression analysis and Poisson logistic or linear methods were used to assess the incidence risk ratio for the three outcome variables (death during ICU stay, ICU length of stay, and readmission to the ICU) related to the presence of comorbidities and adjusted by multiple covariates. **Results:** In this study 23.4% of the patients died during their ICU stay. More than one ICU admission occurred in 7.5% of patients. Prior surgery, smoking, hypertension and chronic alcohol problems were the most prevalent comorbidities. Only hypertension, diabetes with complications and obesity were associated with mortality. For each of these comorbidities mortality increased by 36% ($p < 0.001$). Having at least one of these three was associated with a 42% higher mortality ($p < 0.001$). We also found that myocardial infarction, chronic alcoholism and obesity were associated with an increased length of ICU stay. **Conclusions:** This study found an association between comorbidities and mortality among trauma patients admitted to the ICU but no clear relationship between comorbidities and ICU readmission.

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