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Impact of Intubation Time on Survival following Coronary Artery Bypass Grafting: Insights from the Surgical Treatment for Ischemic Heart Failure (STICH) Trial.

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Abstract

OBJECTIVE: The authors aimed to assess **determinants** of intubation time and evaluate its impact on 30-day and 1-year postoperative survival in Surgical Treatment for Ischemic Heart Failure (STICH) trial patients.

DESIGN, SETTING, PARTICIPANTS, AND INTERVENTIONS: A multivariable Cox proportional hazards model was used among the 1,446 surgical patients from the STICH trial who survived 36 hours after operation, in order to identify perioperative factors associated with 30-day and 1-year postoperative mortality. A multivariable logistic regression model was used to determine risk factors associated with intubation time.

MEASUREMENTS AND MAIN RESULTS:

At 36 hours post-operation, 1,298 (out of 1,446) were extubated and 148 (10.2%) still intubated. Median postoperative intubation time was 11.4 hours. Among patients surviving 36 hours, a multivariable model was developed to predict 30-day (c-index = 0.88) and 1-year (c-index = 0.78) mortality. Intubation time was the strongest independent predictor of 30-day (hazard ratio [HR] 5.50) and 1-year mortality (HR 3.69). Predictors of intubation time >36 hours included mitral valve procedure, New York Heart Association class, left ventricular systolic volume index, creatinine, previous coronary artery bypass grafting (CABG), and age. Results were similar in patients surviving 24 hours post-operation, where intubation time was also the strongest predictor of 30-day (HR 4.18, c-index 0.87) and 1-year (HR 2.81, c-index 0.78) mortality.

CONCLUSIONS: Intubation time is the strongest predictor of 30-day and 1-year mortality among patients with ischemic heart failure undergoing CABG. Combining intubation time with other mortality risk factors may allow the identification of patients at the highest risk for whom the development of specific strategies may improve outcomes.

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KEYWORDS: coronary artery bypass grafting; coronary artery disease; heart failure; intubation

Comment in

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