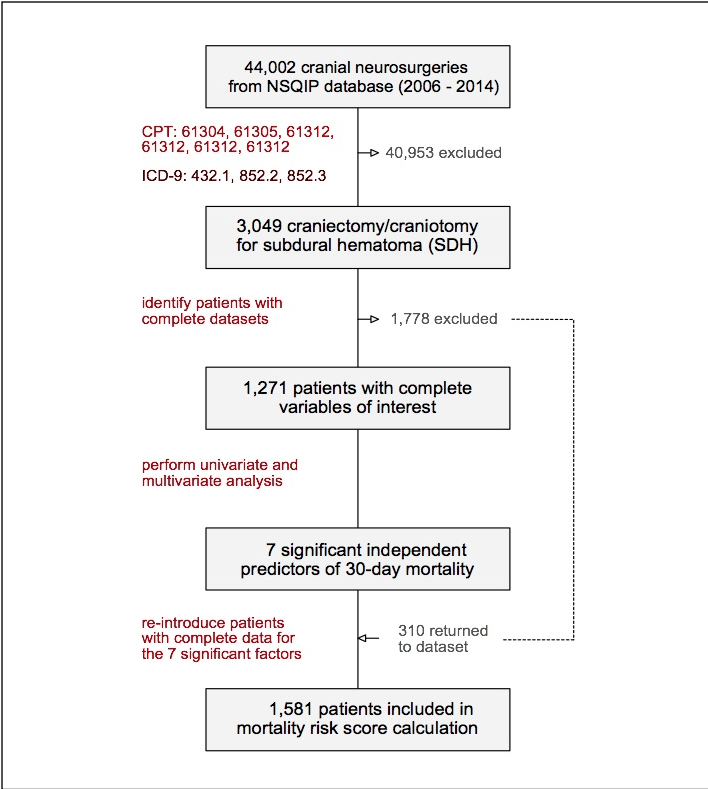


Introduction

Subdural hematoma (SDH) evacuation is a common neurosurgical procedure with high risk for morbidity and mortality (1). The purpose of this study was to develop a risk score for 30-day mortality following subdural hematoma evacuation on the basis of readily available pre-operative information.

Methods



Study design. The American College of Surgeons (ACS) National Surgical Quality Improvement Program (NSQIP) database from years 2006-2014 was queried for patients undergoing surgery for subdural hematoma. Current Procedural Terminology (CPT) codes were used to identify eligible cases in accord with previous studies (2). Post-operative diagnosis of subdural hematoma was determined via ICD-9 codes.

Results (1)

Table 1. Summary of patient demographics	
Variable	N (%)
Gender	
Male	818 (64.4)
Female	453 (35.6)
Age (years)	
Age < 65	364 (28.6)
Age ≥ 65	907 (71.4)
Notable comorbidities	
Smoker	180 (14.2)
Diabetes	289 (22.7)
Anti-HTN medication	880 (69.2)

Abbreviations: HTN = hypertension

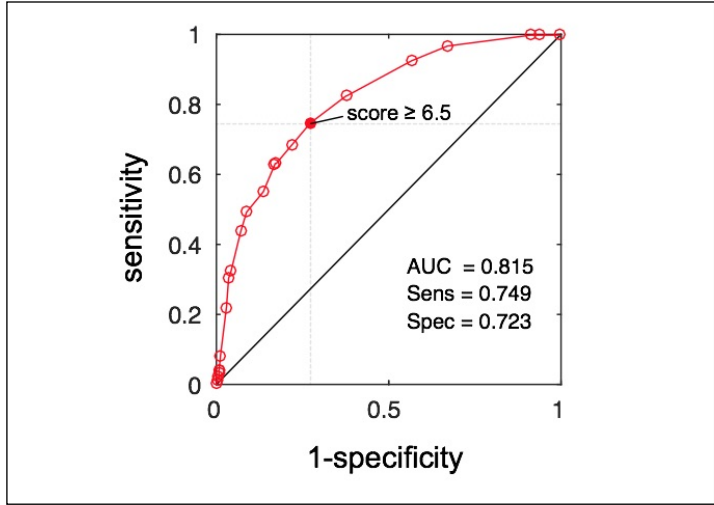
Table 1. Patient demographics and clinical characteristics from the study sample are presented.

Table 2. Factors significant after multivariate analysis	
Factor	OR (CI 5 - 95%)
Emergency case	2.27 (1.44 - 3.58)
Age ≥ 65 years	2.42 (1.57 - 3.72)
Ventilator dependent	4.95 (3.34 - 7.34)
Dialysis	5.16 (2.62 - 10.16)
Bleeding disorder	2.37 (1.67 - 3.36)
WBC ≥ 10,000 μL^{-1}	1.79 (1.25 - 2.57)
Platelets < 150,000 μL^{-1}	2.18 (1.43 - 3.32)

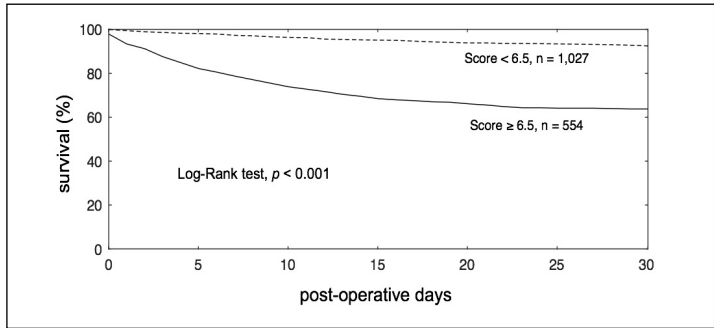
Abbreviations: CI = confidence interval; OR = odds ratio; WBC = white blood cell count

Table 2. Multivariate logistic regression identified seven independent factors associated with 30-day mortality (OR, odds ratio; CI, confidence interval; WBC, white blood cell).

Results (2)



Area under the receiver operating characteristic curve revealed impressive 30-day mortality discrimination.



Dichotomizing patients into “low risk” (score < 6.5) and “high risk” (score = 6.5) groups demonstrated increased survival in the low-risk group.

Conclusions

In this study, we detail the construction of a seven-item risk score derived from routine preoperative data readily available for the assessment of patients undergoing subdural hematoma evacuation.

References

(1) Ryan CG et al. J Trauma Acute Care Surg 2012; 73(5): 1348–1354. (2) Lukasiewicz AM et al. J Neurosurg 2016; 124(3):760-766.