



### Introduction

Data on the evaluation of The Rotterdam Computed Tomography Score (RCTS) as a predictor of outcomes in patients undergoing decompressive craniectomy (DC) for trauma is limited and lacks clarity. The objective of the study was to explore the role of RCTS in predicting unfavorable outcomes, including mortality in patients undergoing DC for head trauma.

### Methods

This was an observational cohort study conducted from January I, 2009 to March 31, 2013. CT scans of adults with head trauma prior to emergency DC were scored according to RCTS. A receiver operating characteristic curve analysis was performed to identify the optimal cutoff RCTS for predicting unfavorable outcomes [Glasgow outcome scale (GOS) =1-3]. Binary logistic regression analysis was performed to evaluate the relationship between RCTS and unfavorable outcomes including mortality.

### Results

197 patients (mean age: 31.4 ± 18.7 years) were included in the study. Mean GCS at presentation was 8.1 ± 3.6. RCTS was negatively correlated with GOS (r = -0.370, p < 0.001). The area under the curve was 0.687 (95 % CI 0.595- 0.779, p < 0.001,) and 0.666 (and 95 % CI 0.589 – 0.742; p < 0.001) for mortality and unfavorable outcomes, respectively. RCTS independently predicted both mortality (adjusted odds ratio for RCTS >3 compared with RCTS = 3: 2.792, 95% CI 1.235 -6.311) and other unfavorable outcomes (adjusted odds ratio for RCTS >3 compared with RCTS = 3: 2.063, 95% CI 1.056-4.031).

### Conclusions

RCTS is an independent predictor of unfavorable outcomes and mortality among patients undergoing emergency DC.

### Learning Objectives

To determine the predictive value of CT scoring systems for traumatic brain injury patients.

To compare the various classification systems for their predictor of outcomes in patient undergoing decompressive craniectomy.

### References

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