## Introduction

Although cardiac injury is known to occur in patients with severe traumatic brain injury, estimates of the incidence vary widely. Therefore, the purpose of this study is to characterize the incidence and risk factors for cardiac arrest (CA) following traumatic subdural hematoma (tSDH).

## Methods

Data were prospectively collected for consecutive tSDH admissions at our institution from 1990-2015. Predictors of cardiac arrest were determined using multivariate logistic regression adjusted for demographic and clinical variables. R version 3.3.1 was used for statistical analysis and significance was defined as p <0.05.

## Results

Of 3024 patients (2211 male, 813 female) included, 60 patients (2.0%) experienced CA. On multivariate analysis, several significant risk factors for CA were identified, including age>=60 (OR=2.5, 95% CI 1.4-4.3, p<0.01) and age>=80 (OR: 2.29, CI: 95% (1.24, 4.23), p=0.01). Additionally, patients with more severe bodily injuries, as measured by the injury severity score (ISS)>=20 (OR=2.1, 95% CI 1.1-4.0, p=0.02) and AIS abdomen score 4-6 (OR=3.5, 95% CI 1.1-11.6, p=0.04) were at greater risk. In contrast, CA was more likely for patients with milder head injury (AIS head score 0-2; OR=2.4, 95% CI 1.0-5.5, p=0.05). Other positive risk factors included penetrating injury (OR=3.1, 95% CI 1.4-6.9, p=0.01), length of stay (LOS) <7 days (OR=3.1, 95% CI 1.0-9.5, p=0.05), and ICU LOS =7 days (OR=2.0, 95% CI 1.1-3.4, p=0.02). Conversely, intubation at admission (OR=0.25, 95% CI 0.08-0.76, p=0.02) was a negative risk factor for CA.

## Conclusions

While more severe bodily injuries and greater age were positively associated with CA among tSDH patients, negative associations were observed for intubation and severe head injury. Further investigation is needed to elucidate the mechanisms underlying these associations.

## Learning Objectives

1.Identify risk factors for cardiac arrest for patients admitted with traumatic subdural hematoma.

## References

1.Hasanin A, Kamal A, Amin S, Zakaria D, El Sayed R, Mahmoud K, Mukhtar A (2016) Incidence and outcome of cardiac injury in patients with severe head trauma. Scand J Trauma Resusc Emerg Med 24: 58 doi:10.1186/s13049-016-0246-z

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