**Mortality outcome of traumatic thoracic injury in Pan-Asian countries**

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**Introduction:** Traumatic thoracic injury is one of the common presentations in Emergency Department. Understanding the epidemiology and contributing factor to mortality is important as traumatic thoracic injury is a preventable cause of mortality.

**Objectives:** This study was conducted to determine the prevalence, characteristic and predictors contributing to mortality of traumatic thoracic injury in pan-Asian countries.

**Methods:** This was a retrospective record review of Pan-Asian Trauma Outcome (PATOS) registry over 6 years period from October 2015 to December 2021. Records of 7733 patients who fulfilled the inclusion criteria were retrospectively reviewed. We analyzed the sociodemographic, mechanism of injury, associated extra-thoracic injury, injury severity score (ISS), vital sign at prehospital (PHC) and triage setting, length of intensive care unit (ICU) stays and 30-day mortality.

**Results:** The prevalence of traumatic thoracic injury was 13.4%. Male to female ratio was 2:1. Majority of the patients age were between 31 – 60 years old (50.2%). Traffic injury is the

most common mechanism of injury (62.2%), followed by fall (26.3%). Only 24.1% of patients had pure thoracic injury. Common associated extra-thoracic injuries were head, lower and upper extremities, and abdominal injuries. About half of the patients had minor injury, ISS less than 9 (58.5%). 23.6% of the patients admitted to ICU. Mortality occurred in 156 patients (2%). Using the binary logistic regression analysis, 30-day mortality was significantly associated with age, presence of associated extra thoracic injury, ISS, length of ICU stays and vital signs at PHC and triage settings ($P<0.01$).

**Conclusion:** Age, presence of extra-thoracic injuries, severe trauma, length of ICU stays and vital sign at PHC and triage setting were found to be determinant of 30-day mortality in traumatic thoracic injury. Early recognition sign of shock, respiratory distress, presence of associated extra thoracic injury and severity of trauma is important for aggressive measurement and treatment of these group to improve outcome of traumatic thoracic injury.

**Keywords:** Injury severity score, thoracic injuries, Asia