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“Prehospital Tension Pneumothorax: A Retrospective Review of Indications”

Introduction: Thoracic trauma can result in the development of a pneumothorax, which is defined as a collapsed lung. Tension pneumothorax is a life-threatening condition caused by the build up of pressure around the lungs leading to obstructive shock. Needle thoracostomies, which involves the insertion of a needle into the pleural cavity to release pressure, can be used to promptly relieve a tension pneumothorax.

Objective: The objective of this study was to evaluate the use of needle thoracostomies in the trauma population by prehospital medical providers.

Methods: A retrospective chart review of adult trauma patients with prehospital needle thoracostomies presenting to an urban Level 1 Trauma Center over a four year period was performed. Prehospital needle thoracostomy cases were reviewed by two independent expert panels of trauma surgeons and paramedics to determine appropriateness of the procedure. Unnecessary needle thoracotomies were defined as patients who did not have clinical signs of tension pneumothorax.

Results: Of the ~~302452~~ needle thoracostomies reviewed, 87 were identified as being potentially unnecessary. The average age of this population was 37.3 years old ~~+/- 16.7 (18-83)~~ with 91% (n=79) being male gender. The average injury severity score was 20.5 +/- 14.3 and 56% of the patients had a penetrating trauma mechanism. The average on scene time was 9.4 +/- 5.9 min. The average transport time was 13.2 +/- 8.4 min. The mortality rate was 33% (n=20/87).

Conclusion: The results from this study demonstrated that potentially unnecessary needle decompressions are being performed in the prehospital setting. The next step for this research will be to refine existing guidelines for prehospital needle decompressions to avoid potentially unnecessary procedures for trauma patients.

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