

Cinco de Trauma: The Five Most Important Prehospital Trauma Publications of the Past Year

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Crystalloids?

- ▶ The efficacy of prehospital IV fluid management in severely injured adult trauma patients
 - ▶ Hebert et al
 - ▶ Canadian J Emerg Med, 2023
 - ▶ Systematic review and meta-analysis
 - ▶ 7 studies/3050 patients
 - ▶ No benefit found with fluid resuscitation



Zero Crystalloids?

- ▶ Optimal prehospital crystalloid resuscitation volume in trauma patients at risk for hemorrhagic shock
 - ▶ Deep at al
 - ▶ J Am Coll Surg
 - ▶ April, 2023
 - ▶ Secondary analysis of the prospective Prehospital Air Medical Plasma trial
 - ▶ 250-1250 cc of crystalloid



Cooking Pasta

- ▶ Blood is for bleeding, salt water is for cooking pasta: an introduction to the THOR network's supplement for the 2018 remote damage control resuscitation annual symposium
 - ▶ Spinella, Yazer
 - ▶ Transfusion, 2019



Blood in the Field

- ▶ Association of prehospital transfusion with mortality in pediatric trauma
 - ▶ Morgan et al
 - ▶ JAMA Pediatrics
 - ▶ May 22nd, 2023
 - ▶ Retrospective, cohort study
 - ▶ Pennsylvania Trauma Systems Foundation database
 - ▶ 559 children
 - ▶ Prehospital transfusion was associated with lower mortality



TXA

- ▶ Prehospital tranexamic acid for severe trauma
 - ▶ PATCH trauma investigators/ANZICS clinical trials group
 - ▶ N Engl J Med
 - ▶ Yesterday
 - ▶ 1310 patients
 - ▶ Randomized to TXA or placebo
 - ▶ No difference in favorable functional outcome at 6 months



Prehospital Vital Signs

- ▶ Prehospital shock index predicts 24-h mortality in trauma patients with a normal shock index upon ED arrival
 - ▶ Yamada et al
 - ▶ Amer J Emerg Med
 - ▶ May, 2023
 - ▶ Retrospective cohort study
 - ▶ 89,495 patients
 - ▶ Abnormal shock index predicts higher 24 hour mortality



Prehospital Vital Signs

- ▶ Many seriously injured trauma patients have normal circulatory measures
 - ▶ Poor sensitivity
- ▶ Abnormal circulatory measures are highly specific for identifying patients with serious injuries



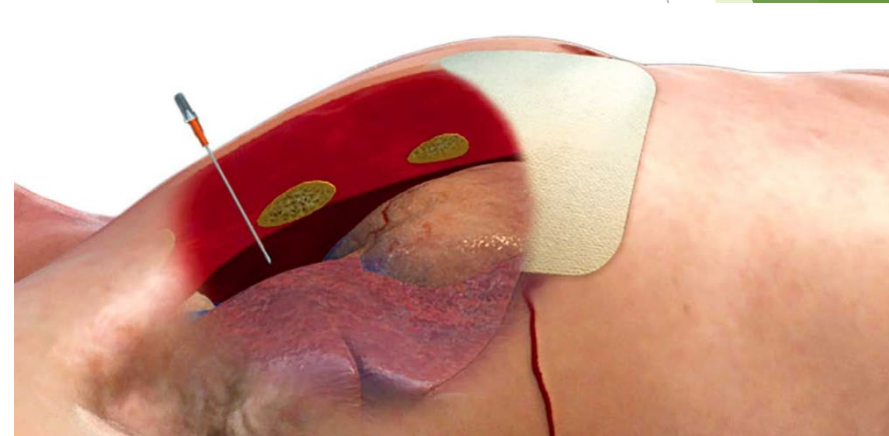
Prehospital Needle Decompression?

- ▶ Association of prehospital needle decompression with mortality among injured patients requiring emergency chest decompression
 - ▶ Muchnok et al
 - ▶ JAMA Surg, August 2022
 - ▶ Retrospective cohort study
 - ▶ Pennsylvania Trauma Outcomes Study database
 - ▶ Compared patients who got PHND with emergent tube thoracostomy in the ED



Prehospital Needle Decompression?

- ▶ 8469 patients
 - ▶ 1337 got PHND
- ▶ PHND was associated with a 25% decrease in odds of 24-hour mortality
 - ▶ Can be life-saving in appropriately selected trauma patients
 - ▶ Tension pneumothorax is suspected



Pain Management in the Field

- ▶ Impact of prehospital pain management on emergency department management of injured children
 - ▶ Harris et al
 - ▶ Prehosp Emerg Care, 2023
 - ▶ Planned secondary analysis of a prospective, multi-center PECARN study
 - ▶ 474 children
 - ▶ 19% got prehospital opioids



Prehospital Pain Management

- ▶ Prehospital opioid analgesia was associated with
 - ▶ Significant reduction in pain severity
 - ▶ Higher doses of opioid analgesia earlier and throughout ED care









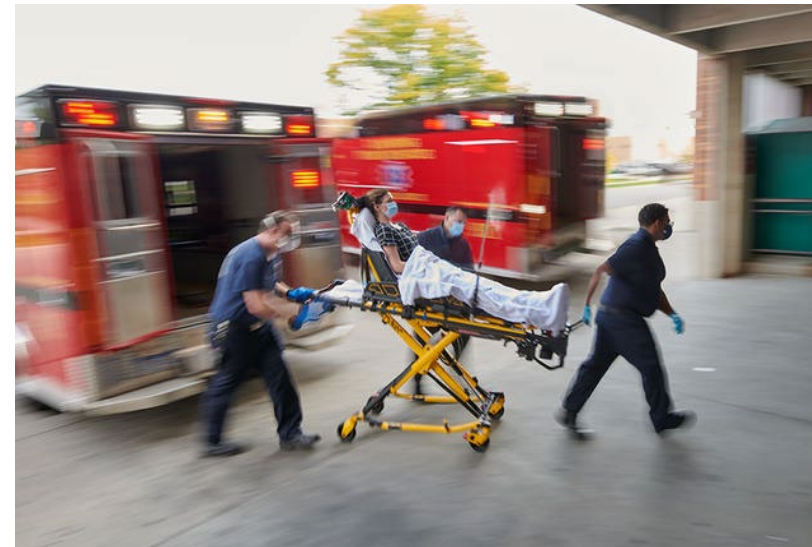
Bias in Pain Management

- ▶ Racial and ethnic disparity in prehospital pain management for trauma patients
 - ▶ Bradford et al
 - ▶ J Am Coll Surg, 2022
 - ▶ Retrospective chart review
 - ▶ 2476 patients
 - ▶ Patients from racial and ethnic minority groups were less likely to receive prehospital pain medication after traumatic injury



Prehospital Pain Management

- ▶ Further reading:
 - ▶ Evidence-based guidelines for prehospital pain management: Recommendations
 - ▶ Lindbeck et al
 - ▶ Prehospital Emerg Care, 2023
 - ▶ Prehospital ketamine use in pediatrics
 - ▶ Goyal et al
 - ▶ Prehospital Emerg Care, 2023



Geriatric Trauma

- ▶ Functional decline after non-hospitalized injuries in older patients: results from the Canadian emergency team initiative cohort in elders

- ▶ Sirois et al

- ▶ Ann Emerg Med, 2022

- ▶ 2919 patients over the age of 65

- ▶ Mechanisms

- ▶ Falls (66%)
 - ▶ MVAs (19%)



Geriatric Trauma

- ▶ 17% of “minor” injuries experience persistent functional decline over 6 months following their ED visit
 - ▶ 4 frailty-related determinants were identified
 - ▶ Occasional use of a walking device
 - ▶ Less than 5 outings/week
 - ▶ Frailty
 - ▶ Older age
- ▶ We need to address screening and follow up with this in mind



In Summary!

- ▶ Limit crystalloids
 - ▶ Blood might be the answer
- ▶ We are still learning about TXA
- ▶ Prehospital vital signs matter
 - ▶ Abnormal is meaningful
 - ▶ Normal should not reassure
- ▶ Prehospital chest decompression can be life saving
- ▶ Prehospital pain management influences ED management
- ▶ Be careful of bias in pain management
- ▶ Geriatric falls are serious
- ▶ Droperidol is awesome!



Thank You!

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