

Cinco De Trauma: The Five Most Important Trauma Publications of the Last Year

Christopher B. Colwell, MD

San Francisco General Hospital and Trauma Center

San Francisco EMS

#1 Prehospital Vital Signs Matter!

- ▶ Prehospital shock index predicts 24-h mortality in trauma patients with a normal shock index upon emergency department arrival
 - ▶ Yamada et al
 - ▶ Am J Emerg Med, 2023
 - ▶ Retrospective, cohort study
 - ▶ 89,495 patients
 - ▶ Abnormal prehospital shock index are at higher risk for 24-hour mortality

RESPECT THE
SHOCK INDEX
= HR / SBP

- ➔ NORMAL SI = < 0.7
- ➔ SI > 1.0
Most specific predictor of hyperlactemia & 28-day mortality
- ➔ A Pre-RSI SI > 0.8
Predicts post-intubation crash — resuscitate more first!



For Prehospital Vital Signs to Matter, they *Must* be Obtained

- ▶ Association between blood pressure recording in the prehospital setting and patient outcome in pediatric trauma patients: A propensity score matching study
 - ▶ Mafumi et al
 - ▶ Trauma Acute Care Surg, 2024
 - ▶ Japan trauma data bank
 - ▶ 13,413 patients
 - ▶ Matched for age and acuity
 - ▶ Those without a blood pressure recorded had higher mortality



#2 Prehospital IV Fluids in Trauma

- ▶ Trends in pre-hospital volume resuscitation of blunt trauma patients: a 15-year analysis of British and German national registries
 - ▶ Bath et al
 - ▶ Crit Care, 2024
 - ▶ Data from the 2 largest European trauma registries
 - ▶ 151,061 patients
 - ▶ 2004 - 2018



Prehospital IV Fluids in Trauma

- ▶ Considerable variability still exists
- ▶ Trend towards reduced pre-hospital fluids resulting in
 - ▶ Improved coagulation function
 - ▶ Decreased mortality rates



Trauma Resuscitation

- ▶ European Guideline on management of major bleeding and coagulopathy following trauma
 - ▶ Rossaint et al
 - ▶ Crit Care, 2023
 - ▶ 39 recommendations
 - ▶ Recommendation 13 - Initial phase
 - ▶ Restricted volume replacement
 - ▶ SBP 80-90 (MAP 50-60)
 - ▶ Severe TBI
 - ▶ MAP of 80



#3 Blood in the Field

- ▶ Every minute matters: Improving outcomes for penetrating trauma through prehospital advanced resuscitative care
 - ▶ Duchesne, et al
 - ▶ J Trauma Acute Care Surg, 2024
 - ▶ Retrospective analysis of a prospective database
 - ▶ 143 hypotensive penetrating trauma patients
 - ▶ 61 PHB
 - ▶ 82 controls



Blood in the Field

- ▶ Blood products were initiated 19 minutes earlier
 - ▶ 5 minute increase in prehospital time
- ▶ Survival for early prehospital blood use was demonstrated
 - ▶ 11% mortality increase for each minute delay to blood administration



#4 TXA

- ▶ Prehospital tranexamic acid for severe trauma
 - ▶ Gruen et al,
 - ▶ PATCH trauma investigators/ANZICS clinical trials group
 - ▶ N Engl J Med, 2023
 - ▶ 1310 patients
 - ▶ Randomized to TXA or placebo
 - ▶ No difference in favorable functional outcome at 6 months
 - ▶ Did not stratify according to time
 - ▶ Didn't use 2 grams

The NEW ENGLAND
JOURNAL of MEDICINE

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ESTABLISHED IN 1812 JANUARY 12, 2012 NEJM.ORG

108 THIS WEEK AT NEJM.ORG

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166 A Man with Persistent Ulcers on the Hands
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EDITORIALS



#5 Geriatric Falls

- ▶ Integrating fall prevention strategies into EMS services to reduce falls and associated healthcare costs for older adults
 - ▶ Camp et al
 - ▶ Clin Inter in Aging, 2024
 - ▶ Before/after study
 - ▶ Paramedics with MedStar Mobile Healthcare utilized the STEADI fall prevention model



Geriatric Falls

- ▶ Identified highest risk groups using the screening tool, high utilization group, and 30-day hospital readmission avoidance programs
 - ▶ Referrals could come from either the responding paramedics or hospitals/insurance groups on discharge
- ▶ Results
 - ▶ 37% reduction in fall-related 911 calls
 - ▶ Potential savings of \$19,053 per patient enrolled



#6 Ketamine

- ▶ Ketamine compared with morphine for out-of-hospital analgesia for patients with traumatic pain
 - ▶ KETAMORPH
 - ▶ Le Cornec et al
 - ▶ JAMA, 2024
 - ▶ Randomized, controlled, non-inferiority trial
 - ▶ 251 patients
 - ▶ Ketamine was not inferior to morphine
 - ▶ Should be considered as an alternative



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
 - ▶ Significant reduction in pain severity
 - ▶ Higher doses of analgesia earlier and throughout ED care



Take Homes

- ▶ Prehospital vital signs matter!
 - ▶ Don't forget blood pressure in kids
 - ▶ Abnormal deserves attention
 - ▶ Normal should not reassure
- ▶ Limit crystalloids
 - ▶ SBP 80-90 is ok
- ▶ Prehospital blood products may be the answer



Take Homes

- ▶ TXA
 - ▶ Sure
 - ▶ Exact role is still being defined
- ▶ Fall prevention in older people starts with EMS
 - ▶ If you don't intervene, you will be back
- ▶ Ketamine is great for pain
 - ▶ And is safe and effective in the field
 - ▶ Pain management in the field makes a difference



Thank You!!

▶ Christopher.Colwell@ucsf.edu