Prehospital Sepsis: More than just an alert

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Disclosure

I have no actual or potential conflict of interest in relation to this program/presentation.
**Overview**

- Why EMS is important in sepsis?
- How most EMS agencies “manage” the septic patient.
- What about bringing more care to the patient?
- Evidence based practice (use of lactate and other tools)
Why does EMS matter?

- ~ 87% of sepsis cases originate in the community \(^2\)
- \(\frac{2}{3}\) of severe sepsis patients initially present to the ED \(^1\)
- ~ 60% of severe sepsis patients arrive by EMS \(^2\)
- Up to 80% of those admitted to ICU for severe sepsis came in from EMS \(^1\)
What does EMS do now?

- Identify SEPSIS
- Fluid bolus
- Alert the hospital
Is what we are doing now effective?
EMS ability to recognize sepsis

EMS Recognition of Sepsis

Failure to ID
52.0%

Identified
48.0%
What caused failures

Breakdown of failures

- WBC: 37.0%
- Recognition: 26.0%
- Vital Signs: 14.0%
- Lacate: 23.0%
The fluid bolus

Metanalytic findings show mixed results

- Not decreasing mortality
- Not associated with improved six-hour fluid resuscitation targets
- Only ONE study showed positive impact:
  - Reduced likelihood of organ failure
  - Reduced hospital mortality
  - No reduction in ICU admissions
The sepsis alert

- Arrived by EMS = Shorter EGDT (119 mins vs 160 mins)
- Shorter time to Sepsis 6
- ED to antibiotic time 30-50 mins sooner
Value of EMS sepsis care now?

- Identify sepsis
- Fluid bolus
- Alert the hospital
How can we improve?

- Add point of care testing
  - Lactate
  - WBC
- Prehospital antibiotics
- Improve EMS education
- More EMS research
Adding lactate and WBC

Breakdown of failures

- Recognition: 26.0%
- Vital Signs: 14.0%
- Lacate: 23.0%
- WBC: 37.0%
Prehospital antibiotics

- Delivered 3.4+-2.6 hours sooner
- Median time to antibiotics 19 mins from time of initial emergency call
- Reduction of ICU stay (6.8+-2.1 vs 11.2+-5.2 days)
- Reduction in mortality (42.4% vs 56.7%)
Education

- Only 52% of EMS practitioners are very confident in ability to recognize sepsis \(^2\)
- 26% of failures to recognize sepsis had the diagnostic evidence \(^1\)
- Needs to be taught as a true emergency (like STEMI, stroke, and trauma)
Better patient care

- Improved identification
- Add diagnostics
- Advance prehospital care
- Improve patient metrics and outcomes
References

