

Walker SB, Conlon TW, Zhang B et al. Clinical Signs to Categorize Shock and Target Vasoactive Medications in Warm Versus Cold Pediatric Septic Shock. *Pediatr Crit Care Med.* 2020 Dec;21(12):1051-1058.

Objective: Determine level of agreement among clinical signs of shock type, identify which signs clinicians prioritize to determine shock type and select vasoactive medications, and test the association of shock type-vasoactive mismatch with prolonged organ dysfunction or death (complicated course).

Design: Retrospective observational study. Setting: Single large academic PICU at the Children's Hospital of Philadelphia.

Patients: Patients less than 18 years treated on a critical care sepsis pathway between 2012 and 2016.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



WARM VERSUS COLD SEPTIC SHOCK IN CHILDREN

RESULTS:

- Of 469 patients, clinicians determined 307 (65%) had warm and 162 (35%) had cold shock.
- Agreement across all clinical signs was low (Fleiss and Cohen's κ , 0.25; 95% CI, 0.20-0.30), although agreement between extremity temperature, capillary refill, and pulse strength was better than with pulse pressure and diastolic blood pressure. Only extremity temperature (adjusted OR, 26.6; 95% CI, 15.5-45.8), capillary refill (adjusted OR, 15.7; 95% CI, 7.9-31.3), and pulse strength (adjusted OR, 21.3; 95% CI, 8.6-52.7) were associated with clinician documented shock type.
- Association of clinical signs with shock type and shock type-vasoactive mismatch (e.g., cold shock treated with vasopressor rather than inotrope) with complicated course was determined using multivariable logistic regression.
- Of the 86 patients initiated on vasoactive medications during the pathway, shock type was discordant from vasoactive medication (κ , 0.14; 95% CI, -0.03 to 0.31) and shock type vasoactive mismatch was not associated with complicated course (adjusted OR, 0.3; 95% CI, 0.1-1.02).

Conclusion:

- Agreement was low among common clinical signs used to characterize shock type, with clinicians prioritizing extremity temperature, capillary refill, and pulse strength.
- Although clinician-assigned shock type was often discordant with vasoactive choice, shock type-vasoactive mismatch was not associated with complicated course.
- Categorizing shock based on clinical signs should be done cautiously.

EXPERT COMMENT



“Shock type-vasoactive mismatch has not been associated with worse clinical outcomes. If expertise available, cardiac index and systemic vascular resistance measurement in association with clinical signs can help identify type of shock, but what is more important is to start vasoactive agent early in the course of septic shock after adequate fluid boluses”

Dr Daisy Khera, MD, MNAMS
Additional Professor, In charge PICU, Department of Paediatrics
All India Institute of Medical Sciences, Jodhpur

DR MANINDER S DHALIWAL

Editor – Academic Pearls
pedpearls@gmail.com

DR BAKUL JAYANT PAREKH

President, IAP2020

DR PIYUSH GUPTA

President, IAP 2021

DR G.V. BASAVARAJ

Hon. Secretary Gen. 2020-21

Reference

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