A Systematic Review of Local Complications from Central and Peripheral Administration of Vasopressors in the Pediatric Population

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Introduction
The purpose of this study was to examine the rates and factors surrounding local tissue injury and extravasation occurring from peripheral and central administration of vasopressors in the pediatric population.

Methods
A systematic search was conducted using Medline, CINAHL, Embase, and Cochrane databases for literature describing administration of vasopressors in the pediatric population for a therapeutic purpose. Specifically, case reports and case series were included that described events in which local ischemic injury or extravasation of vasopressor occurred.

Results
A total of 13 studies with 14 separate patients met inclusion. There were 15 total extravasation and local ischemic events, with 13 of those coming from peripheral vasopressor administration, and 2 from central vasopressor administration. There were a total of 10 local tissue injuries associated with peripheral vasopressor use. The average time to ischemic injury or extravasation peripherally was 56.1 hours with a range of 1.5 hours to 360 hours. In the majority of cases (10/13, 76.9%), the site of the infusion was distal to the antecubital or popliteal fossae.

Conclusion
There are a limited number of case reports and case series examining the circumstances surrounding extravasation and tissue injuries in the pediatric population secondary to vasopressor use. Future research should continue to examine the safety factors surrounding vasopressor use in children.