

REFERENCE

Weiss A, Dang C, Mabrey D, Stanton M, Feih J, Rein L, Feldman R. Comparison of Clinical Outcomes with Initial Norepinephrine or Epinephrine for Hemodynamic Support After Return of Spontaneous Circulation. Shock. 2021 Dec 1;56(6):988-993

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SUMMARY

Post-ROSC patients treated in the ED receiving EPI had higher rates of rearrest, death, or need for additional vasopressor compared to NE. These limited data suggest the hypothesis that disparity may exist in patient outcomes based on the initial agent selected to maintain hemodynamics post-ROSC.

BACKGROUND

- The optimal vasoactive agent for management of patients with return of spontaneous circulation (ROSC) after cardiac arrest has not yet been identified. The Advanced Cardiac Life Support guidelines recommend initiation of either norepinephrine (NE), epinephrine (EPI), or dopamine (DA) to maintain adequate hemodynamics after ROSC is achieved.

STUDY OBJECTIVE

- The goal of this study is to retrospectively assess the impact of initial vasopressor agent on incidence rate of rearrest, death, or need for additional vasopressor in post-cardiac arrest emergency department (ED) patients.

STUDY DESIGN

- A retrospective review of electronic medical records was conducted at a tertiary care, academic medical center over a 32-month period.

STUDY INTERVENTION & COMPARISON

- IV norepinephrine infusion vs IV epinephrine infusion

RESULTS

- **Primary Outcome**
 - The primary outcome (refractory shock, rearrest, or death) was met significantly more often during ED stay in patients treated with EPI compared to NE (EPI 21/42, 50% vs. NE 10/45, 22.2%; P=0.008)
- **Secondary Outcomes**
 - This finding was no longer significant during the early resuscitation period of 6 h (EPI 30/42, 71.4% vs. NE 25/45, 55.6%; P=0.182), or during the entire hospitalization (EPI 40/42, 95.2% vs. NE 36/45, 80%; P=0.051)
 - No significant differences were noted in the rates of tachyarrhythmia development between groups (EPI 9/42 21.4% vs. NE 4/45 8.9% P=0.136).

ADDITIONAL READINGS

- Haukoos JS, Witt G, Gravitz C, Dean J, Jackson DM, Candlin T, Vellman P, Riccio J, Heard K, Kazutomi T, et al.: Colorado Cardiac Arrest & Resuscitation Collaborative Study Group; Denver Metro EMS Medical Directors. Out-of-hospital cardiac arrest in denver, colorado: epidemiology and outcomes. *Acad Emerg Med* 17(4):391–398, 2010.
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- Guerin JP, Levraut J, Samat-Long C, Leverve X, Grimaud D, Ichai C: Effects of dopamine and norepinephrine on systemic and hepatosplanchnic hemodynamics, oxygen exchange, and energy balance in vasoplegic septic patients. *Shock* 23(1):18–24, 2005.