



# Dopamine versus epinephrine for fluid-refractory septic shock in neonates

Rohit Sasidharan<sup>1</sup> · Neeraj Gupta<sup>1</sup> · Deepak Chawla<sup>2</sup>

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To the Editor:

We read the article by Baske et al. [1] with great interest and congratulate the authors for their attempt to address the lacunae in evidence-based management of neonatal shock. However, we were intrigued by few choices made in the study design and reporting.

First, as per the methods section, the enrolled neonates in either group (Epinephrine or Dopamine) were crossed over to the comparator arm if hypotension persisted beyond the primary end point of 45 min. This seems contrary to the standard practice [2, 3] where a second vasoactive agent is added instead of replacing the first one if escalation of therapy is needed. Further, if indeed the neonates with persisting hypotension were crossed over to the comparator group, the trend towards improved outcome in the Epinephrine group appears not by 45 min of starting the therapy (Table 2; reversal of shock 5/20 vs. 6/20), but between 45 and 120 min when crossover would have occurred (hemodynamic instability during vasoactive therapy 10/20 vs. 6/20). This essentially contradicts the conclusion made by the authors about the trend towards improved outcome with use of epinephrine.

Second, the authors have defined “hemodynamic stability” as reversal of shock at 45 min (primary end point) with no need of escalation of addition of vasoactive drugs until 120 min from starting the therapy. By this definition, the numbers at 120 min cannot exceed the numbers at the primary end point. However, both in the main and stratified analyses, more neonates have been added to the second time point.

Lastly, the fact that 77% (40/52) of the enrolled neonates had fluid-refractory septic shock with severe metabolic acidosis at the baseline and case-fatality rate of 75% in the study cohort indicate delay in diagnosis of septic shock. Earlier diagnosis and treatment may be associated with better response to inotropic support and improved outcome [3].

**Authors' contributions** Dr. Rohit Sasidharan: drafted the initial manuscripts and approved the final manuscript as submitted

Dr. Neeraj Gupta: revised and critically reviewed the manuscript and approved the final manuscript as submitted

Dr. Deepak Chawla: critically reviewed the manuscript and approved the final manuscript as submitted

## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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✉ Neeraj Gupta  
neerajpgi@yahoo.co.in

Rohit Sasidharan  
rohitasidharanaiims@gmail.com

Deepak Chawla  
drdeepak.chawla@gmail.com

<sup>1</sup> Department of Neonatology, All India Institute of Medical Sciences (AIIMS), Jodhpur 342005, India

<sup>2</sup> Department of Pediatrics, Government Medical College and Hospital, Chandigarh 160032, India

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