

LETTER

# Early norepinephrine resuscitation of life-threatening hypotensive septic shock: it can do the job, but at what cost?

Eric Kipnis\* and Benoit Vallet\*

See related research by Hamzaoui *et al.*, <http://ccforum.com/content/14/4/R142>

Hamzaoui and colleagues [1] recently reported the effects of early norepinephrine for septic shock with life-threatening hypotension. Their observations first answer 'yes' to the question 'Can norepinephrine alone restore mean arterial pressure (MAP) in septic shock?' Second, as an answer to 'How does norepinephrine alone restore MAP?', they confirm that norepinephrine restores MAP despite minimal fluid administration through 'recruiting' unstressed volume while allowing increased contractility despite increasing afterload. The most critical question that remains unanswered, however, is 'Should norepinephrine alone be used to restore MAP in septic shock?' If the price of fluid resuscitation may be edema and organ failure, what may be the price of norepinephrine resuscitation? The fear is that the very same effects that allow norepinephrine to recruit unstressed volume, through alpha adrenergic effects on venous and arterial vasculature, might recruit volume to the macrovasculature, all the while decreasing flow in previously critically collapsible microvascular beds. Answers to this crucial question are still unclear. In two previous conflicting studies showing beneficial [2] or detrimental [3] effects on microvascular blood flow, the discrepancies may have been due to differences in prior fluid therapy and ensuing preload reserve. In order to determine the optimal use of norepinephrine, future studies of microcirculation and perfusion should either optimize on an indicator of fluid responsiveness during the fluid

therapy preceding norepinephrine treatment or rapidly wean the inevitable early norepinephrine infusion rate once the targeted MAP is obtained by screening for and addressing preload dependency during infusion rate decrements [4].

#### Abbreviations

MAP = mean arterial pressure.

#### Competing interests

The authors declare that they have no competing interests.

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\*Correspondence: [ekipnis@gmail.com](mailto:ekipnis@gmail.com); [benoit.vallet@chru-lille.fr](mailto:benoit.vallet@chru-lille.fr)  
Department of Anesthesiology and Critical Care Medicine, University Hospital of Lille, Huriez Hospital - Rue Michel Polonovski, F-59037 Lille, France