



Hemodynamic support in the early phase of septic shock: a review of challenges and unanswered questions.

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BACKGROUND: Improving sepsis support is one of the three pillars of a 2017 resolution according to the World Health Organization (WHO). Septic shock is indeed a burden issue in the intensive care units. Hemodynamic stabilization is a cornerstone element in the bundle of supportive treatments recommended in the Surviving Sepsis Campaign (SSC) consecutive biannual reports.

MAIN BODY: The "Pandra's box" of septic shock hemodynamics is an eternal debate, however, with permanent contentious issues. Fluid resuscitation is a prerequisite intervention for sepsis rescue, but selection, modalities, dosage as well as duration are subject to discussion while too much fluid is associated with worsen outcome, vasopressors often need to be early introduced in addition, and catecholamines have long been recommended first in the management of septic shock. However, not all patients respond positively and controversy surrounding the efficacy-to-safety profile of catecholamines has come out. Preservation of the macrocirculation through a "best" mean arterial pressure target is the actual priority but is still contentious. Microcirculation recruitment is a novel goal to be achieved but is claiming more knowledge and monitoring standardization. Protection of the cardio-renal axis, which is prevalently injured during septic shock, is also an unavoidable objective. Several promising alternative or additive drug supporting avenues are emerging, trending toward catecholamine's sparing or even "decatecholaminization." Topics to be specifically addressed in this review are: (1) mean arterial pressure targeting, (2) fluid resuscitation, and (3) hemodynamic drug support.

CONCLUSION: Improving assessment and means for rescuing hemodynamics in early septic shock is still a work in progress. Indeed, the bigger the unresolved questions, the lower the quality of evidence.

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