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Polymyxin B haemoperfusion in septic shock patients

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Dear Editor,

The recent article by Payen et al. [1] evaluated the effects of polymyxin B haemoperfusion (PMX-HP) in patients with septic shock from peritonitis. The clinical efficacy of this theoretically attractive treatment has long been debated [2, 3]. Although one earlier study suggested possible benefits through a reduction in mortality [2], some methodological flaws associated with the study design prevented definitive conclusions. In the multi-centre randomized controlled study by Payen et al. [1], no significant clinical benefit with PMX-HP treatment was demonstrated. These results may diminish enthusiasm for this treatment. However, we believe that any such therapeutic nihilism may be premature or misguided for several reasons. First, only three-quarters of the patients had proven infection with Gram-negative organisms. Theoretically, PMX-HP acts by binding to lipopolysaccharides in the outer cell wall of Gram-negative organisms. This may restrict its effectiveness to only infections caused by

these pathogens. Conducting a post hoc analysis differentiating patients with or without Gram-negative infections (especially bloodstream infection) might help clarify the real efficacy of PMX-HP treatment. Second, elucidating the reasons behind the increase in the haematological components of SOFA scores in the PMX-HP group is important. By exposing blood to contact with an artificial membrane, PMX-HP treatment carries the inherent risk of exacerbating coagulation and inflammation disorders. Presenting coagulation parameters and making a statistical comparison between groups might be helpful. Finally, it is important to state the mechanisms of death in both groups to help clarify the reasons for the trend toward increased mortality in the PMX-HP group. Could it be due to an increase in coagulation disorders from PMX-HP? We believe these questions need to be considered prior to conducting more trials or attempting to apply this treatment clinically.

Compliance with Ethical Standards

Conflicts of interest The authors have no conflict of interest.

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