

Expert's comments

Following are the comments on the article "Effectiveness of early start of direct hemoperfusion with polymyxin B-immobilized fiber columns judging from stabilization in circulatory dynamics in surgical treatment patients"^[1]:

1. The article addresses the issue of the role of direct hemoperfusion with polymyxin B-immobilized columns in septic shock. These columns have been shown to adsorb endotoxins and cytokines in previous studies. However, at present there is no clear-cut evidence attesting to benefit of this adjuvant therapy.
2. The study has a few unique features: (a) comparing relative benefits in surgical patients with medical patients, (b) using DHP-PMX columns early, i.e., within 3 hours h of onset of shock, and (c) using two columns consecutively for 2 hours h each.
3. The study shows a clear benefit in terms of 28-day mortality and hemodynamic effects in the case of surgical cases. An earlier, large multicenter study (the EUPHAS^[2]) supports these findings.
4. In contrast, there were no significant positive effects of DHP-PMX in medical patients. Observational impressions from the Japanese experience since 1994 seem to support this view.
5. There are, however, some serious flaws in the study: (a) comparison within the groups with or without PMX columns is not available. In any case the sample size is too small, (b) computation of predicted mortality based on APACHE 2 scores is not reliable, (c) late mortality (>28 days) is not mentioned, (d) secondary end points, such as mechanical ventilator-free days, vasopressor-free days, and ICU days, are not mentioned.

In conclusion, this study supports the possibility that patients of postoperative abdominal sepsis with shock due to endotoxemia may benefit from DHP-PMX adjuvant therapy when treated at a very early stage. It also highlights the need for well-designed studies in this group of patients. The way the columns are used should also be explored in future studies.

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Reference

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2. Cruz DN, Antonelli M, Fumagalli R, Foltran F, Brienza N, Donati A, *et al.* Early use of polymyxin B hemoperfusion in abdominal septic shock: The EUPHAS randomized controlled trial. *JAMA* 2009;301:2445-52.

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