

A new endotoxin adsorber in septic shock: observational case series

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- This is a case series with very promising results using the Alteco LPS Adsorber on patients with septic shock.
- Significantly reduced endotoxin activity was seen in the treatment group and a simultaneous decrease in SOFA score, vasopressor requirement as well as decreased serum lactate level.
- Confirming the Alteco LPS Adsorber to be an easy and safe product to use in patients with septic shock.
- The study can be used for planning of future studies as well as determine timing and intervals of the therapy.

Case series

This is a case series of patients with vasopressor (noradrenaline, NA) dependent septic shock with matched controls. The study was designed to evaluate the effects on the length of NA treatment, endotoxin activity levels and SOFA score in patients with septic shock using a new endotoxin adsorption cartridge for hemoperfusion, the Alteco LPS Adsorber.

The Alteco LPS Adsorber has a high affinity to endotoxin and elimination of endotoxin as an initial trigger may interrupt the septic cascade. The Oulu University hospital in Finland reports a case series of 9 vasopressor dependent patients with septic shock and presumed endotoxemia being treated in their ICU. 15 controls were matched for age, illness severity and focus of infection.

Method

Endotoxin activity was measured using Spectral Diagnostics EAA (Endotoxin Activity Assay). Patients that fulfilled all inclusion criteria received a two-hour hemoperfusion therapy using a new endotoxin adsorption cartridge, the Alteco LPS Adsorber containing a non-toxic synthetic peptide bound to porous plates of polyethylene.

The therapy was initiated within 36 h (13.8-22.0 h) from entering shock with unfractionated heparin was used as anticoagulation and heparin/protamine infusion rates adjusted according to ACT values. Length of noradrenaline infusion, change in endotoxin activity (EAA assay) and SOFA scores at 24h posttreatment were evaluated.

Results

No difference in demographics can be seen between the groups, the active group had a high SOFA score of 9 (8-10) on admission. The Alteco LPS Adsorber therapy was associated with a significant shorter duration of noradrenaline infusion, a significant decrease in endotoxin activity, a significant median decrease in SOFA score as well as a significant decrease in serum lactate. The median length of ventilator treatment was three times longer in the control group.

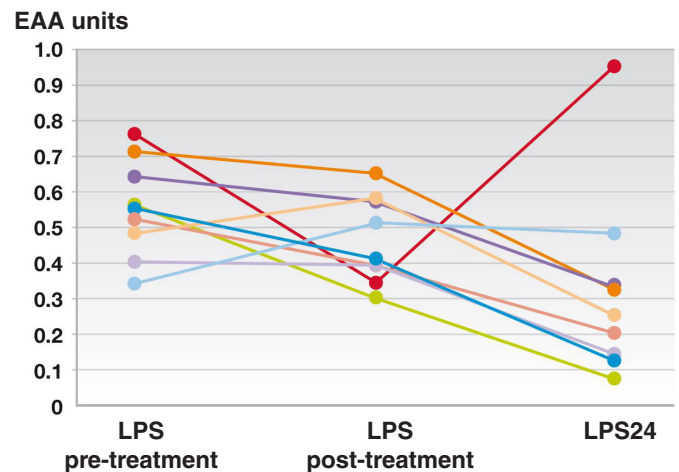


Fig. 1. Individual levels of endotoxin activity in LPS adsorber treated patients (n = 9). $p = 0.019$ pre-treatment vs. 24 h post-treatment (LPS24).