

Impact of CytoSorb on outcomes in septic shock patients: a propensity score matching study

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Introduction

Evolution of sepsis treatment recognizes that sepsis is not just an infection but also a complex dysregulated immune response that can lead to widespread inflammation, organ dysfunction, and even death.

Methods

We retrospectively evaluated the use of CytoSorb® in the treatment of septic shock and compared it to a historical cohort of patients treated with Standard of Care (SoC) therapy as per the Surviving Sepsis Campaign guidelines. The study reviewed 29 patients treated with CytoSorb®. These patients received: Day 1: Two 12-hour sessions of CytoSorb®; Day 2: One 24-hour session of CytoSorb®. The outcomes of the CytoSorb® group were compared to those of a historical Control Group of 130 septic shock patients. To ensure that the two groups (CytoSorb® and SoC) were comparable, a propensity score matching was performed. After matching, a final comparison was made between: CytoSorb® group: 25 patients; Control group: 25 patients from the historical cohort.

Results

The Cytosorb group showed a significant reduction in lactate levels (2.2 mmol/l) compared to the control group (5 mmol/l), with a p-value of 0.026. Furthermore, the Cytosorb group had 19% fewer ventilation days (21 days) compared to the control group (26 days) and there was a 15% reduction in ICU length of stay for the Cytosorb group (23 days) compared to the control group (27 days) (figure 1). In addition to that, in a subgroup of 17 patients in the Cytosorb group, there was a notable reduction in markers of inflammation: a decrease in IL-6, from 4,590 pg/ml to 280 pg/ml (p=0.00053), a significant reduction in PCT, from 66.50 ng/ml to 29.00 ng/ml (p=0.00017), further supporting the anti-inflammatory effect of Cytosorb.

Conclusion

These findings suggest that Cytosorb may offer benefits in managing critical illness, particularly through its impact on metabolic balance, inflammation, and overall recovery in the ICU setting

Figure 1

