

Hemoadsorption in Acute-on-Chronic Liver Failure: Impact on Hemodynamics, Organ Function, and Clinical Outcomes. Some preliminary results from The BILIVER study

Valsecchi M³, Laici C¹, Costantini S², Riva I⁴, Siniscalchi A¹

1: Postoperative and Abdominal Organ Transplant Intensive Care Unit, IRCCS Azienda Ospedaliero-Universitaria di Bologna, Bologna, Italy

2: Department of Anesthesia, Transplant and Surgical Intensive Care, Azienda Ospedaliero Universitaria Delle Marche, 60126 Ancona, Italy; 3: Anesthesia and Resuscitation of Transplants, ASST Grande Ospedale Metropolitano Niguarda, Milano, Italy

4: General Intensive Care Unit, Azienda Socio Sanitaria Territoriale Papa Giovanni XXIII, Bergamo, Italy

Introduction

Although the exact pathophysiology of ACLF has not yet been fully elucidated, the precipitating factor may not act directly on the liver but instead exert systemic effects. This triggers a systemic inflammatory response syndrome (SIRS), ultimately leading to single or multiple organ failure. In the most severe cases, patients may develop sepsis or even septic shock. Similar to what occurs in sepsis, the host response to the precipitating factor—by inducing hyperactivation of the immune system—creates the conditions for organ dysfunction, which, if the clinical picture persists, may progress to overt organ failure.

Methods

Here, we present some of the secondary endpoints as part of a preliminary analysis from an observational study on the kinetics of hepatic toxins and the assessment of organ damage in patients with Acute-on-Chronic Liver Failure (ACLF) (BILIVER study). As previously mentioned, many of these endpoints are associated not only with hepatic function but also with the hemodynamic consequences of ACLF. In this analysis, we evaluated the trends in noradrenaline requirements, lactate levels, MELD score and mortality.

Results

In the initial analysis of 29 patients, the study observed that CytoSorb therapy was associated with a trend toward reduced lactate levels and decreased noradrenaline requirements (see Fig. 1). Additionally, the MELD score showed an overall reduction in the study population, from a median of 39 pre-treatment to 37 post-treatment, with the most pronounced improvement observed in the subgroup of the most critically ill patients, where the score decreased from 51 to 40.5. The 90-day mortality rate was 45%, which is lower than the 53% predicted based on MELD score.

Conclusion

The use of hemoadsorption in patients with ACLF may not only contribute to a reduction in bilirubin levels, but may also positively impact the hemodynamic profile, potentially improving organ function and overall outcomes

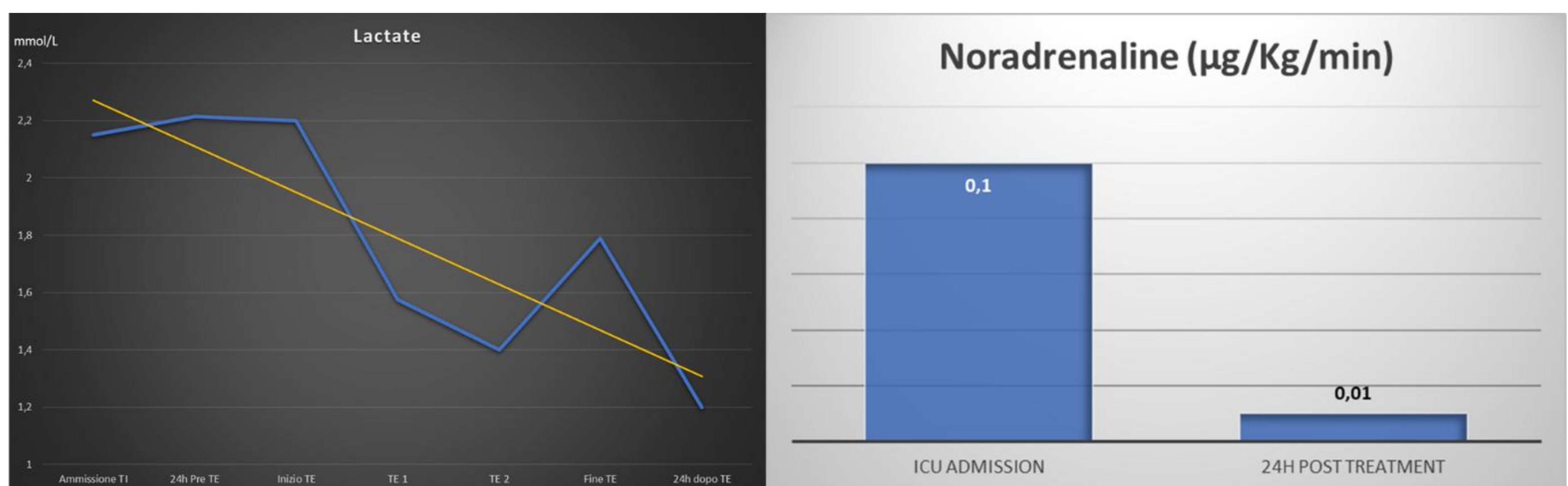


Figure 1: lactate trend and noradrenaline values over the treatment period