589 Role of Liver Support Systems in The Management of Post Hepatectomy Liver Failure: A Meta-Analysis and Systematic Review of Literature

K. Pufal[1], A. Lawson[1], J. Hodson[2], M. Bangash[1,3], J. Patel[1,3], C. Weston[4], T. van Gulik[5], B.V.M. Dasari[6]
[1]*University of Birmingham, Birmingham, United Kingdom,* [2]*Institute of Translational Medicine, Queen Elizabeth Hospital, Birmingham, United Kingdom,* [3]*Department of Anaesthesia and Critical Care, Queen Elizabeth Hospital, Birmingham, United Kingdom,* [4]*Centre for Liver & Gastrointestinal Research, Institute of Immunology & Immunotherapy, College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom,* [5]*Department of Surgery, University Medical Centres (Location Amsterdam Medical Centre), University of Amsterdam, Amsterdam, Netherlands,* [6]*Department of HPB and Liver Transplantation, Queen Elizabeth Hospital, Birmingham, United Kingdom*

Aim: Post hepatectomy liver failure (PHLF) is a rare but serious complication following liver resection. PHLF is associated with high mortality of up to 50% in severe cases. With limited treatment options available, there is a need to evaluate the role of systems that support the function of the liver as treatment modalities following PHLF development.
Method: The aim of this study was to review the literature and summarise the role of liver support systems (LSS) in the management of PHLF. Publications of interest were identified using systematically designed searches. Following screening, data from the relevant publications were extracted, pooled where possible, and analysed.
Results: Systematic review identified ten studies, which used either Plasma Exchange (PE) or Molecular Adsorbent Recirculating System (MARS) as LSS after PHLF development. The sample sizes of included studies were small, ranging from N = 2 to N = 13. Across all studies, the pooled 90-day mortality rate was 40% (95% CI: 15% - 68%). However, there was substantial heterogeneity (I^2=64%), likely since the studies used a variety of definitions for PHLF and had different selection criteria for patient eligibility for LSS treatment.
Conclusions: Despite potential benefits, the current evidence is insufficient to recommend LSS for the routine management of severe PHLF, with the current literature consisting of only a limited number of studies. There is a definite need for larger, multicentre, prospective studies evaluating the conventional and newer modalities of support systems with a view to improve the outcomes in this group of patients.