CytoSorb®

Clinical Evidence in **Liver Failure**

Name	Title	Aim	Number of patients	Type of study	Outcome
Grafe et al., Sci Rep 2024; 14(1):21762	Correlation of bilirubin and toxic bile acids in critically ill patients with cholestatic liver dysfunction and adsorber application	Investigate whether there is a correlation between bilirubin and toxic bile acids (TBA), measured before start, 6 and 12 hrs after start of CytoSorb®	16	Prospective observational study	Moderate to high correlation found between bilirubin and TBA concentrations at all time points. Bilirubin appears to be a suitable surrogate parameter for TBA elimiation by CytoSorb®.
Haselwanter et al., Sci Rep 2024; 14(1):11309	Use of the CytoSorb® adsorber in patients with acute-on-chronic liver failure	Compare acute on chronic liver pts who received CytoSorb® plus hemodialysis with pts who only received hemodialysis	31 (21 v 10)	Retrospective cohort study	The CytoSorb® group had shorter intensive care length of stay, and better survival rates compared with controls. Bilirubin decreases were significantly lower in CytoSorb® group. Decrease in platelets noted in both groups but without bleeding or other complications. CytoSorb® use described as feasible and easy to use.
Turan et al., Biomedicines 2024; 12(1):67	Hemoadsorption Therapy for Critically Ill Patients with Acute Liver Dysfunction: A Meta-Analysis and Systematic Review	Systematic review and meta-analysis assessing evidence on clinical outcomes following hemoadsorption in pts with acute liver dysfunction with multi-organ failure.	N/A	Systematic Review	CytoSorb® was the main hemoadsorption technique used contributing 232/335 pts (69%). Pooled data showed a significant reduction in total bilirubin levels post treatment (mean difference of −4.79 mg/dL, p = 0.002). Use of hemoadsorption appears safe with an apparent improvement in liver function after therapy.
Riva et al., J Artif Organs 2024; 27(3):261-268	Extracorporeal Liver Support Techniques: a comparison	Compared 17 pts who had 28 CytoSorb treatments with; 19 pts who had 37 coupled plasma filtration adsorption (CPFA) treatments; 1 pt who had 3 MARs treatments; 1 pt who had 5 prometheus treatments; and 1 pt who had 2 plasma adsorption perfusion treatments.	39	Retrospective comparative analysis	CytoSorb® showed a significantly higher adsorption ability for Total Bilirubin (TB) and direct bilirubin (DB) compared to CPFA. Comparing all techniques, CytoSorb® was the most efficient system.

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Popescu et al., J Clin Med 2023; 12(6):2258	Artificial Liver Support with CytoSorb® and MARS in Liver Failure: A Retrospective Propensity Matched Analysis	Comparison CytoSorb® & Molecular Adsorbent Recirculating System (MARS) in liver failure patients	30 (15 v 15)	Retrospective cohort study	CytoSorb® associated with decreased bilirubin, ammonia, lactate and transaminases compared to MARS gp with a 10 point decrease in the Model for End-State Liver Disease (MELD) score
Tomescu et al., Int J Artif Organs 2021; 4(8):560-564	Haemoadsorption by CytoSorb® in patients with acute liver failure: A case series	Assess clinical effects of CytoSorb® in biochemical paramters in patients with acute liver failure. Patients had 3 consecutive 24 hr sessions	28	Prospective case series	Suggest use of CytoSorb® as an option for management of liver impairment, for biochemical control, aiding bridge to liver transplant, or till spontaneous remission.

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