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Abstract Discussion Forum **(0)**

Number: Sa1466

ESSENTIAL: EFFICACY AND SAFETY OF NON-TRANSPLANT THERAPIES FOR ACUTE LIVER FAILURE SYNDROMES DUE TO INFECTIVE AETIOLOGIES – A REAL-WORLD EXPERIENCE

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Background and Aims: Acute liver failure (ALF) in India primarily stems from infective causes, unlike drug-induced etiologies prevalent in the West. We present a real-world experience of non-transplant therapies like plasma exchange (PLEX) and continuous veno-venous hemofiltration (CVVH) as potential rescue strategies in managing ALF, given the high mortality rate and limited access to orthotopic liver transplantation (OLT) in resource-constrained settings.
Method: Retrospective analysis of a prospectively-maintained database of 76 patients with ALF (infective aetiologies) from April 2021 to July 2024 at a single center. Patients were grouped: A) only CVVH, B) PLEX [B1: without CVVH, B2: with CVVH], C) standard medical treatment (SMT). Primary outcome was transplant-free survival at discharge or day 21. We evaluated severity indices: Model for End-Stage Liver Disease (MELD), Sequential Organ Failure Assessment (SOFA), Acute Physiology and Chronic Health Evaluation (APACHE), Acute Liver Failure Study Group (ALFSG) index, and Acute Liver Failure caused by hepatitis A (ALFA) Score. A probability score model predicted optimal treatment modality. Probability calculation: $1/(1+e^{-score})$. The model was validated using an independent patient cohort from another center.
Results: Groups A, B & C showed similar demographics except presenting creatinine, significantly high in A vs B or C (3.1 vs 1.4 vs 1.4, p=0.001). Among B, creatinine for B2 > B1 (2.9 vs 1.4, p<0.001). ALFSG Score was high for A and B2, lower for B1 and C. Group C had significantly lower bilirubin, ammonia, International Normalized Ratio (INR), and lactate than Groups A and B.
Improvement in creatinine, bilirubin, Aspartate Aminotransferase (AST), and ammonia at 7 days was highest with Group B (B2>B1) > A > C (p<0.05). Survival at 7 days was 78.9% vs 87.8% vs 85.7%. Improvement was seen in 45% vs 71% (81% vs 56%) vs 86% (p=0.031).
Multivariate analysis revealed significant outcome differences for ALFA score, ALFSG index and SOFA. Regression analysis showed probability score for worsening = 3.2475+ (âˆ’1.3688Ã—ALFSG Index) + (0.0169Ã—SOFA), with 90.9% accuracy. On multinomial logistic regression, individual probability scores: A = âˆ’1.3337 + (0.4471Ã—ALFSG Index) + (0.0507Ã—SOFA); B = 1.3571 + (âˆ’0.0504Ã—ALFSG Index) + (âˆ’0.0937Ã—SOFA); C = âˆ’0.0234 + (âˆ’0.3967Ã—ALFSG Index) + (0.0429Ã—SOFA). Models showed 90% sensitivity and 72% accuracy on validation cohort (Hosmer-Lameshow p=0.69). Patients with high creatinine and high SOFA or ALFSG index (unstable) showed better outcomes with CVVH, while those with high ammonia benefited from PLEX.
Conclusion: PLEX remains the best treatment for unstable infective ALF patients, with CVVH as a valuable addition for acute kidney injury. The predictive models effectively guide individualized treatment approaches.

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