Background and Aims Treatment of ACLF is an unmet need. DIALIVE is a novel liver dialysis device that replaces dysfunctional albumin and removes PAMPs and DAMPs. This RCT tests the hypothesis that DIALIVE improves the prognosis of ACLF patients. Primary endpoint was safety, and other endpoints included clinical and pathophysiological effects and device performance.

Method EUH2020 funded the RCT. Patients population had ACLF Grades 1–3a, and the main endpoints were evaluated at Day 10. For the patient to be evaluable, they had 3–5 DIALIVE sessions. No specific hypothesis was to be statistically assessed. 2-populations were defined: Safety: Patients having at least 1 DIALIVE treatment. Modified-safety (MS): Evaluating patients. A post-hoc inferential Mixed Models for Repeated Measurements analysis was performed to evaluate the differences between groups at Days 5 and 10. Log-rank and Wald tests were performed to assess ACLF resolution.

Results Study: 32-ACLF patients with alcoholic cirrhosis were randomised either to DIALIVE (N=17; 13M; age: 49 (12.4); CLIF-C ACLFs: 47.6 (7.3)) or SOC (n=15; 13M; age: 49.1 (10.2); CLIF-C ACLFs: 9.1 (12.2); CLIF-C ACLFs: 47 (6.5)). 30 patients (15 in each arm) comprised the MS set. DIALIVE was administered for a median of 3 sessions (range 1–5) in first 3-days (range 1–6) for a median of 8 hours (7–12) each day. Safety: 5 of 17 patients died in the DIALIVE group; 4 of 15 in SOC group. SAEs were seen in 64.7% in DIALIVE and 53.3% in the SOC group. Efficacy: CLIF-OF score: Significant improvement in the Liver (p=0.045) and Brain (p<0.001) subscores in DIALIVE; and deterioration of Lung subscore (p=0.002) in the SOC group (Day 10). This resulted in a significant overall treatment effect in CLIF-OFs (p=0.043). ACLF Grade: Significantly more cases reached ACLF 0 (33.3% vs 66.7%) favoring DIALIVE (logrank p=0.0357) and a 2.8x faster time to ACLF 0 (Wald test p=0.059) (figure 1). CLIF-C ACLF score: Difference of means (standard error) between DIALIVE and SOC at Day 10 was -5.4 (2.9) in favour of the DIALIVE group (p=0.064). MELD score: Significantly lower in DIALIVE at both Days 5 (p=0.049) and 10 (p=0.028) vs SOC.

Conclusions DIALIVE is safe and significantly increases proportion of patients resolving ACLF and reduces time to resolution. The data justify late phase clinical trials.

Abstract P076 Figure 1 This Kaplan Meier graph shows that significantly greater proportion of patients resolve ACLF with a faster resolution in the DIALIVE group.