**Introduction**

• Hepatic encephalopathy (HE) is the most frequent cirrhosis complication leading to hospital admissions and is associated with significant mortality.

• The aim of this study was to determine the ability of the CyberLiver-Animal Recognition Test (CL-ART) to predict future hospitalisation due to decompensation, especially through HE, comparing its performance to established HE tests.

**Results**

• 43 healthy controls and 103 cirrhosis patients at risk of decompensation were included (CL-ART time 15.7s vs 24.0s).

• Baseline characteristics of cirrhosis patients:
  - 65% male; median 58 years
  - Child-Pugh Score 8 [IQR 7-10]
  - MELD-Na 15 [IQR 11-19]
  - CLIF-AD score 48 [IQR 45-52].

• CL-ART demonstrated a good correlation with EncephalApp (r=0.81, p<0.001) and PHES (r= -0.63, p<0.001) although demonstrated superior participant useability (Figure 1).

• When analysing patients admitted due to HE during their follow-up, baseline CL-ART was significantly higher compared to participants who were not hospitalised (31.5 vs 22.6s, p<0.001).

• The AUROC for predicting future HE admissions for the CL-ART was 0.85 (95% CI 0.77-0.93), compared to EncephalApp (AUROC 0.83, 95% CI 0.74-0.92) and ammonia (AUROC 0.81, 95% CI 0.71-0.91).

• In multiple logistic regression, CL-ART remained an independent predictor of future HE admissions (Figure 2).

• Using the Youden index, the optimal CL-ART cut-off for predicting HE-related admissions is 26s (sensitivity 91.7%, specificity 71.4%)

• When analysing all subsequent admissions due to any decompensation event, baseline CL-ART scores were significantly higher in those subsequently hospitalised (27.0 vs 21.3s, p<0.001) with an AUROC of 0.76 (95% CI 0.66-0.85).

**Conclusions**

• CL-ART can help predict hospitalisation due to all decompensation, with highest sensitivity and specificity for HE-related admissions.

• Its rapid testing, smartphone application and high useability mean it can be used remotely, and therefore, play a crucial role in predicting decompensation, enabling early community intervention.