# AB055. SOH21AS155. Clinical correlation of frailty measures and evaluation of complementary molecular frailty biomarker candidates in a prospective national cohort of liver transplant candidates

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**Background:** Frailty is a clinical condition characterised by loss of physiologic reserve and increased susceptibility to stressors. The prevalence of frailty is increased in cirrhotic patients. Molecular frailty biomarkers may reflect the dysregulation of physiological systems leading to this reduced physiological reserve, but as yet such complementary biomarkers have not been identified.
**Methods:** Seventy patients were prospectively evaluated while undergoing liver transplant assessment. Clinical assessments included Liver Frailty Index (LFI), Fried Frailty Index (FFI), and Rockwood Frailty Score (RFS). Serum irisin, S100B, leptin and PAI-1 concentrations were assayed (ELISA) in a subset of patients. Assessments were repeated at 3-monthly intervals whilst wait-listed and post-transplant. Outcomes included decompensation-related hospitalisations, time on the waiting-list and post-transplant outcomes.
**Results:** Clinical frailty ranged from 20% to 37%, depending on the frailty score. Increasing FFI and RFS scores were associated with increased S100B (P=0.02). There was also a positive correlation between higher MELD-Na (Model for End-Stage Liver Disease) and PAI-1 (P=0.014) and negative correlation between MELD-Na and Leptin (P=0.059). Increasing MELD-Na, RFS and female sex were associated with an increased likelihood of admission with liver decompensation while on the waiting list. Although Frailty increased on the waitlist, the frailest patients spent a significantly shorter period on the list (P=0.026).
**Conclusions:** This study adds objectivity to what was previously a nuanced aspect of patient selection. We have demonstrated the association of clinical frailty scores with novel molecular biomarkers of frailty for the first time. This has significant diagnostic and prognostic implications going forward and warrants validation in larger cohorts.
**Keywords:** Frailty; liver transplant; outcomes; ELISA

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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