*Background*: Frailty is reported to be highly prevalent at 42% among CKD-5 patients receiving haemodialysis (HD), and has been linked to many adverse clinical outcomes, including an increased risk of falling. Additional risk factors for falls include polypharmacy, multi-comorbidities and also perhaps blood pressure (BP) dysregulation and orthostatic hypotension.

*Purpose*: To characterise the prevalence of established frailty components, and start developing a CKD-5 specific falls risk profile that could be used to tailor appropriate therapies and interventions.

*Methods*: Seventy-six patients on HD from two Renal Units were classified as “frail” (FG) and “non-frail” (NFG) using the Fried’s frailty phenotype and were included in this analysis.

Physical function was assessed by means of: 1) timed up and go (TUG), 2) 5 chair sit to stands (CSTS-5) 3) handgrip strength and 4) isometric knee extension strength tests. Static balance was assessed on a force platform, and centre of pressure (COP) variables were computed. Habitual physical activity (PA) was measured with the ActivPal® accelerometer over a period of minimum 5 days. Short term cardiovascular regulation during transitioning from a supine to passive 60o Head Up Tilt (HUT) was assessed by means of continuous heart rate (HR), continuous BP (contBP), and impedance cardiography using the Task Force® Monitor. Stroke volume (SV), cardiac output (CO), total peripheral resistance (TPR), and baroreceptor effectiveness index (BEI) were calculated. Self-reported history of falls in the last 12 months was recorded via a standardized falls survey instrument.

Independent t-tests, Mann-Whitney, and Chi square tests, as appropriate, were used to compare the two groups. Significance levels were set at alpha ˂ 0.05.

*Results*: 31 participants (40.8%) were classified as frail. Age (67±10.3 vs 57±14.8 years) and Charlson comorbidity index (CCI) (6.2±2.4 vs 4.4±1.9) were higher in the FG vs NFG.

The FG had worse scores for TUG (15.3±5.7 vs 8.9±1.8s), CSTS-5 (23.3±11.4 vs 13.3±3.3s), handgrip strength (22±8.1 vs 30.3±9.4Kg), knee extension strength (14.8±7.7 vs 23.2±8Kg) daily step counts (2377±1440 vs 3682±1803) and higher COP velocity in the anterior-posterior axis (28.5±5.8 vs 24.8±5.2mm/s) (p values ≤ .006).

No significant differences in contBP, HR, SV, and BEI were detected at rest or in response to HUT, while CO was significantly lower in the FG both in supine position (4.05±0.83 vs 4.9±1.41 L/min) and in HUT (3.96±0.74 vs 4.85±1.02 L/min) (p values ≤ .01). No significant association between the frailty status and history of falls was detected.

*Conclusions*: This cross-sectional study confirms the high prevalence of frailty among HD patients. Frail status was not associated with history of falls or impaired BP regulation during transitioning form supine to HUT. Future studies should establish whether frailty is a risk factor for falls in CKD-5 or other risk factors may be more prominent.