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P106 -THE RELATIVE IMPORTANCE OF PHYSICAL FRAILTY AND CARDIOVASCULAR FUNCTION AS MODIFIABLE PREDICTORS OF FALLS IN HAEMODIALYSIS PATIENTS: A PROSPECTIVE COHORT STUDY

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Introduction: Stage 5 chronic kidney disease (CKD-5) patients on haemodialysis (HD) are at higher risk of falls (1.18–1.6 falls/person-year) compared to non-uraemic, age-matched individuals (0.5 falls/person-year). Previous research has suggested that multiple risk factors such as older age, comorbidities, polypharmacy, and frailty contribute primarily to the increased risk of falling in the general population. In addition to these risk factors, HD patients are characterised by severe cardiovascular disease (CVD) burden that is often manifested with symptoms of orthostatic intolerance, impaired blood pressure (BP) control and syncope, all of which may be implicated in the aetiology of falling. Therefore, we aimed to explore the relative importance of frailty and CV function as potential modifiable predictors of falls. We hypothesised that: 1) frailty and CV function would predict a higher number of falls and 2) modelling the risk of falling by adding a modifiable BP variable to a frailty related variable only would improve the prediction of number of falls experienced by patients with CKD-5 over a 12 month period.

Methods: Ninety-three prevalent CKD-5 patients on HD were recruited from two Renal Units for this prospective cohort study, which was conducted between October 2015 and August 2018.

Frailty was assessed by means of the Fried's frailty phenotype. Additional physical function components were assessed using the: 1) timed up and go test (TUG), 2) sit-to-stand 5 (STS-5) test, 3) ActivPal monitor for physical activity levels, 4) handgrip strength, and 5) knee extension isometric strength. Cardiovascular function was assessed using the Task Force monitor to determine baroreflex and haemodynamic function at rest and in response to a 60° head-up tilt test (HUT-60°). The number of falls experienced during a 12-month follow-up were recorded by a researcher on a monthly basis. The association between all potential predictors and number of falls was analysed using negative binomial regression modelling.

Results: Sixty-nine out of 93 patients were included in the final analysis. A total number of 80 falls were recorded, resulting in an incidence of 1.16 falls/patient-year. Frailty, physical and cardiovascular function components were associated with a higher number of falls in univariate negative binomial regression analysis. In multivariate analysis adjusted for frailty and CV function, only baroreflex function (RR: 0.963, 95%CI: 0.939-0.987, p= 0.003), and the change response of BP to HUT-60° (RR: 0.920, 95%CI: 0.854-0.991, p= 0.028) remained significantly associated with a greater number of falls.

Discussions: Results from this prospective study confirm previous research observations that physical frailty and CV function during a passive orthostatic challenge predict a higher number of falls in patients with CKD-5. Adding a baroreflex function variable implicated in the short-term regulation of BP to a frailty-only model significantly improved the prediction of number of falls. Moreover, baroreflex function showed a greater relative importance than frailty in predicting falls in this clinical population.