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P107 -Frailty, physical function, static balance and falls in CKD-5 patients on Haemodialysis

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Background: Frailty, poor physical function, physical inactivity, are prevalent in people on Haemodialysis (HD) as well as in younger patients (<65 years of age) and/or in pre-dialysis CKD stages. Frailty and physical dysfunction are strongly associated with a multitude of adverse clinical outcomes in the general population, such as falls, hospitalisations, disability, loss of independence and early mortality. However the impact of frailty and physical inactivity, on falls in particular as a clinical outcome in CKD, is not well documented. The main objective of this study was to perform a comprehensive assessment of frailty and physical function in people on HD, and to explore the relationship with the risk of falling.

Methods: Seventy-six (out of 93) HD patients, from two Renal Units, had complete data and were retained for analysis. Participants were classified as “fallers” and “non-fallers” based on the occurrence or not of at least one fall during a 12 month follow up and/or history of at least one fall in the previous 12 months.

Comprehensive physical function assessment consisted of objectively measured physical activity (PA) using the ActivPAL monitor, handgrip strength, isometric leg extension strength, gait speed, 3m timed up and go (TUG), chair sit to stand-5 (STS-5), and static postural balance, using a force platform. In addition, participants were classified as “frail” or “non-frail” following the Fried’s frailty phenotype criteria. All assessments were performed on a non-HD day.

Group based comparisons between fallers and non-fallers were preliminarily analysed by means of a Chi-square test and either parametric (independent t-tests) or non-parametric (Mann-Whitney U) tests, as appropriate. The association of frailty/physical function and falls (yes or no) was analysed by means of logistic regression.

Results: Forty four patients (57.9%) reported either a fall in the previous year or during follow-up. The most common activity leading to falls was walking (73.1%) followed by getting up from either a supine or a sitting position to upright standing (46.2%). The most commonly reported precipitating factors were dizziness/passing out (46.2%) and loss of balance/unsteadiness of the legs (57.7%). Patients classified as fallers had lower time spent standing (2.1 ± 1.1 h vs 2.7 ± 1.2 h, $p=0.034$), time spent stepping (0.6 ± 0.3 h vs 0.8 ± 0.4 h, $p=0.016$), and number of daily steps (2566 ± 1462 vs 3731 ± 1966 , $p=0.015$) compared to non-fallers. Fallers had worse static postural balance performance in all variables assessed in eyes open and eyes closed conditions. No differences in strength, gait speed, TUG or STS-5 were detected between groups, but Fried’s frailty was significantly more prevalent in fallers (48%) vs non-fallers (21%) groups. Frailty (OR: 3.15, 95% CI: 1.04-9.54, $p=0.04$) and postural balance (OR: 1.14, 95% CI: 1.02-1.28, $p=0.022$) were associated with increased odds of falling in multivariate logistic regression analysis.

Conclusions: Physical frailty as a composite score and postural balance are associated with falling status in patients on HD. Static postural balance is an outcome at least partially independent from frailty, and it may represent an additional risk factor for falls.