

Abstract Submission No.: A-0826

Frailty predicts adverse clinical outcomes in patients with moderate to severe chronic kidney disease

Chiung-Ying Huang, Hsiao-Mei Tsao, Shu-Ling Liang, **Tai-Shuan Lai**, Yung-Ming Chen
Department of Internal Medicine, National Taiwan University Hospital Bei-Hu branch, Taiwan

Objectives : Frailty is an age-related syndrome that predicts adverse outcomes in the elderly population. Its prognostic implication in individuals with specific illness has not been fully explored. This study prospectively investigated the impact of frailty in patients with moderate to severe chronic kidney disease (CKD).

Methods : Patients with CKD3b-5 and aged ≥ 55 years with a clinical frailty scale of ≤ 5 were enrolled. All completed frailty assessment at entry and 6 months by using an electronic, 80-item frailty index (FI80) which also contained the components of Fried's frailty phenotype and Study of Osteoporotic Fractures (SOF) index. Frailty was defined by a score of $\geq 17/80$ (FI80 > 0.21), $\geq 3/5$ (frailty phenotype), or $\geq 2/3$ (SOF index). Logistic regression, Kaplan-Meier analysis and Cox proportional hazards models were used to explore predictors and clinical outcomes of frailty.

Results : Among the 315 participants, the mean age was 73.1 years and eGFR was 22.2 ml/min/1.73 m². The overall prevalences of frailty were 6.2% by Fried's frailty phenotype, 0.6% by SOF index, and 26.7% by FI80. Logistic regression found that age was the most robust predictor of frailty across the 3 different measurements, more so than CKD severity or proteinuria. During an average follow-up of 1.7 years, the incidence of kidney failure, overall death, and hospital admissions was 10.5, 0.6, and 15.2 per 1,000 patient-month, respectively. Survival analysis found that frailty defined by FI80, but not Fried frailty phenotype or SOF index, exhibited the worse composite outcomes of overall death or dialysis. Multivariate Cox models confirmed that apart from proteinuria, FI80-defined frailty compared with robust counterparts, predicted adverse outcomes (HR 3.51, 95% CI: 1.20,10.2).

Conclusions : Frailty is common in non-dialysis CKD patients, and the prevalence of which increased with advancing age. Frailty status defined by FI80 effectively predicted ESKD or death in patients with moderate to severe CKD.