

Abstract Submission No.: A-0371**Association of Accelerometer-measured Physical Activity with All-cause and Cause-specific Mortality in Individuals with or without Chronic Kidney Disease: the UK Biobank Study**

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Objectives : Physical activity is important for human health and longevity. However, limited data are available on its role in patients with chronic kidney disease (CKD). We investigated the association between device-measured-physical-activity (DMPA) and adverse outcomes among individuals with or without CKD.

Methods : We included 56,511 participants without CKD (cohort 1) and 2,398 participants with CKD (cohort 2) who completed a 1-week accelerometer study from the UK Biobank cohort. CKD was defined as diagnostic codes before the accelerometer study, an estimated glomerular filtration rate <60 ml/min/1.73m², or random urine-albumin-to-creatinine-ratio >30mg/g. The main predictor was DMPA, categorized into quartiles. The primary outcome was all-cause death. The secondary outcomes included major cardiovascular adverse event and non-cancer-related death. All outcome events were ascertained based on diagnostic codes.

Results : Over a median follow-up of 7.9 years, all-cause death occurred in 1,739 (3.0%) participants with the corresponding incidence rate of 3.75 per 1000 person-years. In cohort 1, the adjusted hazard ratios (HRs) (95% confidence intervals [CIs]) for all-cause death were 0.76 (0.67-0.86), 0.67 (0.59-0.78), and 0.62 (0.53-0.73) for 2nd, 3rd, and 4th quartiles, respectively, compared with 1st quartile. This association was also observed in cohort 2, with the corresponding HRs (95% CIs) of 1.00 (0.67-1.49), 0.61 (0.37-1.01), and 0.28 (0.14-0.60), respectively. This tendency was consistent in secondary non-cancer-related death. However, DMPA was not associated with major cardiovascular events in patients with CKD, while a significant association was observed in those without CKD.

Conclusions : This study showed varying clinical implications of physical activity depending on CKD status. The null association of physical activity with major adverse cardiovascular outcomes in CKD patients suggests a complex pathogenesis of cardiovascular disease in this population.