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Symptom-burden and health-related quality of life in patients living with frailty and chronic kidney disease

Dr Andrew Nixon[1,2,3], Dr Thomas Wilkinson[4], Mrs Hannah Young[4], Mr Daniel Nixon[4], Professor Neil Pendleton[5], Professor Sandip Mitra[6,7], Dr Mark Brady[1], Dr Ajay Dhaygude[1], Professor Alice Smith[4]
[1]Department of Renal Medicine, Lancashire Teaching Hospitals NHS Foundation Trust, Preston, United Kingdom, [2]Centre for Health Research and Innovation, NIHR Lancashire Clinical Research Facility, Preston, United Kingdom, [3]Division of Cardiovascular Sciences, University of Manchester, Manchester, United Kingdom, [4]Department of Health Sciences, University of Leicester, Leicester, United Kingdom, [5]Division of Neuroscience and Experimental Psychology, University of Manchester, Manchester, United Kingdom, [6]Manchester Academy of Health Sciences Centre, University of Manchester, Manchester, United Kingdom, [7]NIHR D4D MedTech & In-vitro Diagnostics Co-operative, , United Kingdom

Introduction

Frailty is more common in chronic kidney disease (CKD) than in the general population and is independently associated with adverse health outcomes. The association between frailty and patient-reported outcomes, such as symptom-burden and health-related quality of life (HRQOL), are not well-described in patients with CKD. Understanding how living with frailty and CKD influences patient-reported outcomes could inform the development of management strategies that aim to improve quantity and quality of life of this vulnerable patient group. This study evaluated symptom-burden and HRQOL in patients living with frailty and CKD.

Methods

One-hundred and forty-four participants with CKD were recruited from Primary Care. Participants completed physical activity (GP Physical Activity Questionnaire, GPPAQ), symptom-burden (Kidney Symptom Questionnaire, KSQ) and HRQOL (Short Form 12, SF-12) questionnaires. The GPPAQ provides a 4-level Physical Activity Index reflecting current physical activity. The KSQ is a measure of symptom perception and provides symptom total frequency (TF) and total impact (TI) scores, with higher scores denoting greater symptom-burden. The SF-12 produces an 8-scale profile of health and well-being, as well as 2 physical and mental health summary measures: Physical Component Summary (PCS) and Mental Component Summary (MCS). Higher SF-12 scores represent better HRQOL.

A modified version of the Frailty Phenotype was created using principles described in the literature [1-4]. Frailty was diagnosed if two of the following criteria were present: (1) weakness/slowness, defined as a SF-12 Physical Functioning scale score <75, (2) exhaustion, defined as a SF-12 Vitality score <55, and (3) low physical activity, defined as 'inactive' using the GPPAQ.

Results

The mean age of participants was 73±11 years and mean eGFR was 48±10 ml/min/1.73m². There were 63 (44%) female participants. Eighty-nine (62%) participants were categorised as frail. Frail participants were older (77±9 vs. 69±11 years, p<0.001), had a lower eGFR (46±11 vs. 51±8 ml/min/1.73m², p=0.002) and were prescribed more medications (4±2 vs. 3±2, p=0.002) than non-frail participants. There was not a significant gender difference between frail and non-frail groups.

Frail participants had higher symptom TF (26±10 vs. 15±8, p<0.001) and TI scores (25±11 vs. 19±13, p=0.02, n=98). Frail participants also had worse PCS (38±12 vs. 53±5, p<0.001) and MCS scores (50±10 vs. 55±6,

p<0.001). Table 1 demonstrates the association between frailty, symptom-burden and HRQOL. Frailty, when adjusted for age, gender and eGFR, was associated with an increase in symptom TF and TI scores and a decrease in PCS and MCS scores. Frailty was the most important predictor of higher symptom TF score and lower PCS and MCS scores.

Conclusions

Frailty is an independent predictor of high symptom-burden and worse HRQOL, particularly physical health-related quality of life, in patients with CKD. Therefore, patients with CKD should routinely be screened for frailty and symptom-burden should regularly be assessed in those identified as frail. The identification of high symptom-burden provides an opportunity to develop a person-centred care plan tailored towards most troublesome symptoms to maximise HRQOL.