

Factors affecting health-related quality of life in persons approaching dialysis

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Background: End stage kidney disease (ESKD) and dialysis are associated with complications including fatigue, anxiety, reduced physical function, and reduced appetite, which may result in reduced health-related quality of life (HRQoL). Exercise, education, and nutritional interventions in pre-dialysis and dialysis patients have been found to prevent deterioration in HRQoL in persons with ESKD. "PREHAB" (Pre-emptive rehabilitation in persons approaching dialysis) is a prospective randomised trial aiming to determine the effect of a multi-component exercise, nutrition and educational intervention upon clinical and HRQoL outcomes in persons approaching dialysis. The aim of this work was to assess factors influencing HRQoL in participants prior to starting dialysis.

Methods: Patients with $eGFR \leq 15 \text{ ml/min/1.73m}^2$ who were able to exercise and anticipated to require dialysis within 6 months, were invited to participate in the "PREHAB" trial. Comprehensive baseline assessment of HRQoL, physical function and nutritional status was undertaken using validated methods. Factors which may influence HRQoL were assessed using Functional Assessment of Chronic Illness Fatigue Tool (FACIT-F), Duke Activity Status Index (DASI), Functional Assessment of Anorexia/Cachexia Therapy Appetite Scale (FAACT-A), Hospital Anxiety and Depression Scale (HADS), Kidney Disease Distress Thermometer, Montreal Cognitive Assessment (MoCA), Barthel Index and EQ5D.

Results: Data for 57 participants (35 male, 22 female, mean age 64.4 years) were analysed. Results are summarised in Table 1. Overall, there were trends towards increased levels of fatigue and anxiety, and reduced appetite, perception of physical function, and cognitive function. When results were analysed according to age, younger participants (≤ 65 years) reported increased fatigue (FACIT-F 27 vs 14; $p=0.0001$), increased anxiety (HADS-A 9 vs 3; $p=0.0003$), and increased disease-associated stress (Kidney Disease Distress Thermometer 5 vs 2; $p=0.005$) in comparison to older participants (>65 years). Participants with reduced nutritional status (as determined by Subjective Global Assessment (SGA) ≤ 5) were more likely to experience increased fatigue (FACIT-F 30 vs 18; $p=0.02$), increased anxiety (HADS-A 10 vs 6; $p=0.04$ and EQ5D Anxiety/Depression score 4 vs 2; $p=0.03$), increased difficulties doing usual activities (EQ5D Usual Activities score 3 vs 2; $p=0.01$), reduced physical activity (DASI 26.95 vs 35.95; $p=0.007$) and reduced appetite (FAACT-A 15 vs 10; $p=0.05$), in comparison to well-nourished participants (SGA 6-7), although these differences were no longer significant after correction for multiple comparisons. Unexpectedly, cognitive function (MoCA 27 vs 25; $p=0.04$) was better in those with reduced nutritional status.

Conclusion: Several factors which can negatively influence HRQoL are prevalent in this cohort of patients approaching dialysis, including increased fatigue and reduced physical activity. We also observed that younger patients are more likely to experience fatigue, increased anxiety and increased disease-associated distress. Malnutrition was associated with trends towards lower physical activity, reduced appetite, anxiety, increased difficulties with usual activities, and greater perception of fatigue. These findings are important for planning interventions to prevent deterioration in HRQoL, to ensure that they focus upon the relevant aspects most likely to be beneficial to patient care.