IS PHYSICAL ACTIVITY ASSOCIATED WITH LOW BACK PAIN AND PHYSICAL FUNCTION IN PATIENTS UNDERGOING DIALYSIS?

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INTRODUCTION AND AIMS: Physical inactivity may be associated with muscular skeletal pain and reduced physical function in patients undergoing dialysis. The aim of this study was 1) to compare physical activity, low back pain frequency and physical function in patients undergoing dialysis with age and gender matched data from the general population, and 2) to assess the association between physical activity, low back pain frequency and physical function in patients undergoing dialysis.

METHODS: Adult patients undergoing dialysis in the Capital Region, Denmark, were recruited to the cross sectional study. Inclusion criteria were dialysis treatment for minimum three months and ability to walk 50 meters. Exclusion criteria were hospital admission within the past month, dementia and inability to speak Danish. Clinical data were collected from electronic databases. Self-reported physical activity level categorized as active and inactive, pain, and socioeconomic position assessed as educational level were reported in a questionnaire. Data for the general population were reported by The Danish Health and Morbidity Survey and they were matched to the patients using the patients’ age, gender and national region as weights. Physical function was tested using the 30-seconds Chair Stand Test. Data analyses included multinomial regression analyses adjusted for age, gender, dialysis modality, socioeconomic position, body mass index, and haemoglobin and albumin levels.

RESULTS: 343 patients participated in the study (haemodialysis/peritoneal dialysis n=281/62; male/female n=204/139; age (mean ± SD) 63 ± 14 years). Being physically active was reported by 63.2% of the patients versus 80.1% in the general population (p<0.01). Low back pain was reported by 53.5% versus 52.8% in the general population (p=0.05). The patients performed 10.4 ± 5.7 rises in the 30-seconds Chair Stand Test versus 14.4 ± 4.4 rises in the general population (p<0.001). The association between physical activity (dependent variable) and low back pain (independent variable) was not significant in a logistic regression analysis, in which female gender and increasing body mass index were associated with low back pain (OR 2.3 (1.4-4.0), 95% CI) and (OR 1.07 (1.02-1.12), respectively). The association between physical activity (dependent variable) and physical function (independent variable) was not significant in a linear regression analysis, in which lower age and a higher p-albumin level were associated with good physical function (β -1.4 (-1.8–-0.9) and (β 0.14 (0.02-0.26), respectively).

CONCLUSIONS: Even though physical activity may have a positive impact on pain related to the musculoskeletal system, physical activity was not associated with the frequency of low back pain in the mobile patients undergoing dialysis in the present study. The increasing prevalence of obesity may however induce low back pain, which was associated with increasing body mass index. Surprisingly, physical activity was neither associated with the patients’ reduced physical function, whereas an increased nutritional status determined by p-albumin was associated with physical function. The relatively reduced percentage of physically active patients may have other negative implications, among them impaired metabolism.