

Abstract

This pilot study aimed to establish if an exercise programme utilizing the world's first manual compression foot-pump, commonly known as "Venous Anti-Stasis Slippers", could be used as an intervention to improve dialysis efficacy (Kt/V) and the quality of life (QOL) of patients with end stage renal disease (ESRD).

The entire population of 34 self-care renal patients at the Flora Clinic renal unit were screened and 19 patients who met the inclusion criteria for the study were invited to participate in this 16 week pilot study. Baseline dialysis efficacy values were obtained from the analysis of routine blood tests and quality of life values were established with the use of the South African English version of the EQ-5D health questionnaire. This was followed by an eight week non-intervention period. Pre-intervention values were then established prior to the implementation of an eight week exercise programme using the manual compression foot pumps.

A single group time series design was used and 12 of the initial 19 subjects completed the study by performing seated calf raising exercises, with manual compression foot pumps on their feet, for 20 minutes per hour during the first three hours of their routine dialysis sessions (2 - 3 times per week) over a period of eight weeks. Exercise diaries were kept to record exercise times, heart rates and exercise intensities.

At the end of the eight week exercise programme, dialysis efficacy and quality of life values were re-measured. An intention to treat analysis of routine blood test results revealed statistically significant changes in dialysis efficacy (Kt/V) values between baseline (1.70 ± 0.48), pre-intervention (1.39 ± 0.43) and post intervention (1.50 ± 0.47) with a resultant 7.91% improvement in Kt/V values as a result of the exercise programme. There were however no statistically significant changes observed in overall quality of life (QOL) values, but noticeable improvements in self-care ability and a reduction in depression/anxiety scores were observed during this pilot study. The frequency of exercise per week had no significant effect on the changes in Kt/V.