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Effects of Planned Exercise Training on Glomerular Filtration Rate in Patients with CKD Undergoing Haemodialysis

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Objectives: To evaluate the effects of planned exercises during haemodialysis in patients with CKD on estimated glomerular filtration rate(eGFR) and Creatinine(Cr)

Methods: This study was a secondary analysis of data from a previous trial on effects of exercises on physical function and quality of life. CKD patients undergoing haemodialysis (HD) were enrolled for the experimental study for nine months. Thirty (n=30) participants were assigned to the experimental (EG) and control group (CG) by block randomization. The baseline outcome measures of creatinine (Cr) and estimated glomerular filtration rate (eGFR) were recorded. A validated individualized exercise protocol that included strengthening exercises, aerobic exercises during hemodialysis and a home exercise program (HEP) were prescribed for the experimental group(EG). The control group(CG) underwent normal activities. The outcome measures (GFR,Cr) were recorded at the end of 36 weeks. The effectiveness was analyzed using a paired sample t test, P value <0.05 considered statistically significant.

Results: Out of thirty enrolled patients (n=30), the baseline data was obtained only for 28 patients among 15 were experimental and 13 from control groups. At the end of 36 weeks, out of 30 participants, 26 completed the study were aged 48.5(11.3) years, 4 from EG and 12 from CG. Consistent eGFR data of <15ml/min of 26 participants were included for the analysis. The eGFR of 5.99± 1.99 ml/min. There were no significant baseline differences between the two groups. There was a lower eGFR mean difference after exercises intervention (exercise 0.08 ±1.33, control= 1.85±2.15ml/min) compared to creatinine (-1.11±5.33, control= -1.40±3.41). There was no difference in the change in kidney function (eGFR between standard care and exercise intervention (eGFR p= 0.14, Cr p=0.72)

Conclusions: Inspite of the benefits of exercise on function and QoL in the preliminary study, this secondary analysis conclude that there was no difference in change in kidney function after exercise intervention.