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Regular water-based exercise program for patients with chronic kidney disease has postponed the progression of renal failure-10 year follow up

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It has been emphasised by various authors that patients (pts) with chronic kidney disease (CKD) can benefit from regular exercise by improving their cardio-respiratory capacity and quality of life. However, there are limitations for exercise use in CKD pts because pts have usually limited exercise tolerance and they are not motivated to physical activity. CKD pts have uremic symptoms that cause poor functional ability and lack of energy and deconditioning is more pronounced among older individuals. Therefore, exercise should be started as early as possible to postpone further worsening of physical conditioning. Experimental studies have shown that swimming exercise reduced proteinuria and glomerulosclerosis and better renal functional parameters were correlated with less focal glomerulosclerosis index in uraemic rats. We noted in our article in 2003 the beneficial influence of regular physical activity on physical fitness, quality of life, oxidative stress parameters and renal functional parameters after 12-week program.

Aim of the current study: The exploratory objective was to assess the effects of regular long-term supervised aquatic exercising on decrease in creatinine clearance and progression to end-stage renal disease.

Methods: We designed a prospective case-control study to examine the impact of long-term regular water-based exercise on renal functional status of pts with moderate renal failure (n=17, age 31-72, GFR 47.9 ml/min). The exercise group had regular low-intensity 30 minutes aerobic exercise in the pool twice a week during the follow-up period of 10 years. Matched control participants (n=9) remained sedentary. GFR and proteinuria and CKD category was observed at baseline and after 10 years.

Results: 42% of the exercise group (n=7) completed the study in 10 years. The decrease in GFR was significantly lower in exercise group. From the sedentary group 55% (n=5) reached end-point (33% death and 22% renal replacement therapy). From the exercise group only 5% (n=1) reached to renal replacement therapy.

Conclusion: The supervised regular long-time aquatic exercising has preserved renal function and postponed the progression of end stage renal disease observed in 10 years of follow up.

Biography

Ots-Rosenberg Mai has completed clinical fellowship training at Harvard Medical School and commencement of Ph.D. thesis in 1998 at Tartu University. She is a nephrology professor at Tartu University. She has published more than 46 papers in reputed journals. Her main fields of research include progression of CKD experimental and clinical as well as epidemiology. She is currently president of the Estonian Society of Nephrology.

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