European Respiratory Society
Annual Congress 2012

Abstract Number: 2058

Publication Number: P249

Abstract Group: 4.1. Clinical physiology and Exercise

Keyword 1: Exercise **Keyword 2:** Respiratory muscle **Keyword 3:** No keyword

Title: A six months low intensity home-based walking program prevents respiratory muscle impairment in dialysis patients: The EXCITE study

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Body: Changes of lung function in dialysis patients are well known, particularly a progressive deterioration of vital capacity which could be due to respiratory muscles weakness. Regular exercise improves physical capacity in these patients (Heiwe, 2011) with poorly described effects on lung function. AIM to evaluate the effect of regular low intensity exercise on lung function and respiratory muscle strength (MIP) in dialysis patients enrolled in a 6-month exercise program prescribed at hospital and performed at home. METHODS 42 patients (14 F, age 64.3±13) were recruited and divided in 2 groups: prescribed exercise (E = 20), performing every second day two 10-min walking sessions at intensity below the self –selected speed maintained at home by a metronome, and control (C = 22) i.e. well matched dialysis patients who did not enter the exercise program. Physical performance was assessed by the 6- minute walking distance (6MWD), spirometry was measured by Spiropalm (COSMED, Italy) and MIP by MicroRPM (Carefusion, USA). A progressive deterioration of MIP was observed in C. Remarkably, no such deterioration was observed in E.

RESULTS

	E		C	
mean ± SE	pre	post (+ 6 months)	pre	post (+ 6 months)

FVC L (%)	2.8 ± .1 (90)	2.7 ± .1 (85)	2.8 ± .2 (89)	2.5 ± .2 (81)
FEV1 L (%)	2.2 ± .1 (93)	2.2 ± .1 (93)	2.3± .2 (93)	2.1 ± .2 (88)
MIP kPa	7.9 ± .6	8.2 ± .6	7.7 ± .5	7.2 ± .5*
6MWD m	343 ± 18	390 ± 23**	334 ± 23	325 ± 22

** p <0.01 *p <0.05 Conclusions: in dialysis patients a 6-month home walking program improves physical capacity with no changes in spirometry and may prevent progressive deterioration of respiratory muscle function which is observed in the C group.