

19<sup>th</sup> Global

# Nephrologists Annual Meeting

May 14-15, 2018 | Rome, Italy

## Evaluation of the quality of life, physical efficiency and muscle function in dialysis patients participating in the exercise program

Wioletta Dziubek-Rogowska<sup>1</sup>, Rogowski L<sup>2</sup>, Kuztal M<sup>2</sup>, Bulińska K<sup>1</sup>, Zembroń-Łacny A<sup>3</sup>, Gołębiowski T<sup>2</sup>, Ochmann B<sup>4</sup>, Pawlaczyk W<sup>1</sup>, Klinger M<sup>2</sup> and Woźniowski M<sup>1</sup>

<sup>1</sup>University School of Physical Education, Wrocław, Poland

<sup>2</sup>Wrocław Medical University, Poland

<sup>3</sup>University of Zielona Góra, Poland

<sup>4</sup>University Physical Education, Wrocław, Poland

Frequent dialysis and a number of comorbidities that accompany patients with chronic renal failure (CRF) causes a reduction in their overall fitness. A decrease in muscle mass and malnutrition not only increases the likelihood of injuries, but also limits the performance of everyday activities, reducing the quality of life of patients. Programming rehabilitation, considering the progressive process of skeletal myopathy in patients with CRF, it is directed to increase muscle strength and endurance, that is, factors conditioning physical exercise tolerance, and consequently also the quality of life and physical fitness in the patient's everyday life. That is why the importance of physical exercise is so important, not only in the period between dialysis, but also in non-dialysis days. The main aim of the research is to assess the impact of six-month training on muscle function, physical efficiency and the quality of life of patients undergoing dialysis. The dialysis patients were divided into three groups. Trainings with each of the three groups were conducted for six months, three times a week (1st and 2nd group) and twice a week (3rd group), 60 minutes. 90 people were qualified for the study; 45 patients aged 40 to 80, completed the training cycle. The average age of the respondents was 62.2 years. Patients were divided into three groups: group I – patients with endurance training (16 people); group II - patients with strength training (15 people); group III - patients who trained Tai Chi (14 people). At the beginning of the program and after six months, the patients were subjected to the following tests: Strength of the lower limbs in the statics and dynamics - isokinetic and isometric tests (multi joint 4 by Biodex); exercise stress test (VO<sub>2</sub>max) on the Cosmed K4b2 ergospirometer; assessment of the quality of life- KDQoL questionnaire. All tests were performed with the participation of a nephrologist and cardiologist. The research was carried out as part of a project from the National Science Center - grant no. 2011/03/B/NZ7/01764. As a result of six months of training in all groups of patients, the endurance parameters and muscle strength-speed parameters improved their quality of life and the cardiovascular system's performance improved. After six months of training, hemodialysis patients showed an increase in the strength-speed and spiroergometric parameters. In some cases these differences were statistically significant. There were no significant differences between group I (training on the rotor) and group II (resistance training) in strength-speed parameters. In group I there was a significant increase in the average values of all spiroergometric parameters after six-month training on the rotor. The peak torque at both speeds of movement correlated with the spiroergometric parameters. The age of subjects tested negatively correlated with all strength-speed parameters. Improvement in the quality of life has been observed in all groups studied.

### Biography

Wioletta Dziubek-Rogowska completed her Master of Physiotherapy at University of Physical Education in Wrocław in 1999 and PhD in Physical Education at University of Physical Education in Wrocław in 2005. She is Scientist and Adjunct in the Department of Physiotherapy at University of Physical Education in Wrocław from 2005. From 2007-2016, she was Senior Lecturer and from 2016 to present working as a Professor at Karkonosze College in Jelenia Góra, Faculty of Natural Science and Technology. From 2005-Present, he is Head of Laboratory of Functional Tests in Internal Diseases, Department of Physiotherapy, and University of Physical Education in Wrocław. From 01.09.2016-present, she is Head of the Scientific Research Laboratory Department of Physiotherapy, University of Physical Education in Wrocław. Her area of interest includes "End-stage renal disease, dialysis and kidney transplantation".

wioletta.dziubek@awf.wroc.pl