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Cardiovascular risk factors evolution during 6 months intradialytic aerobic cycling program in hemodialysis patients: Hypertension, hyperlipidemia, hemoglobin stability and cardiovascular morbidity in hemodialysis patients

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Background: Cardiovascular diseases are the main cause of morbidity and mortality in hemodialysis patients. Chronic Kidney Disease is a Cardiovascular Risk Factor (CVRF) associated with Hypertension (HTA), Dyslipidemia (low HDL), Haemoglobin (Hb) variation. Oxidant stress also plays a central role in the development of cardiovascular diseases. Physical activity is well known in cardiology to allow a control of the CRF and a better survival. The impact of physical exercise on blood pressure levels, Dyslipidemia and Hb variation has been investigated intervention studies of cycling exercise program during haemodialysis. We already showed that intradialytic aerobic cycling training protocol exerts beneficial effects in CKD patients by reducing the most sensitive and reliable marker of OS (IsoP).

Aim: The aim of this study was to determine if PA may allow a better control of the CVRF and decrease cardiovascular hospitalization.

Methods: We studied 84 haemodialysis patients in a hemodialysis center. They were voluntarily assigned to either intradialytic exercise training (cycling) group (EX; n=42) or a control group (CON; n=42).

Results: Statistics comparisons: ANOVA 2 and post-hoc with Newman Keuls. In EX Hb remains stable $\Delta=0.11\text{g/dl}$, with lower ESA dose: -10.8%; on the contrary, Hb in CON do not remain stable $\Delta=-0.76\text{g/dl}$ ($p<0.05$). HDL-C rise up significantly in EX: 13.13% ($p<0.05$) and is stable in CON. The average of antihypertensive treatment is lower in EX after 6 months exercise period. Despite a higher number of total hospitalizations in EX, there are less cardiac causes compared to CON.

Conclusion: Our results show that per dialysis cycling improves HTA and dyslipidemia control. Hb is more stable. So we can conclude that PA lowers CVRF: With a longer follow-up, the cardiovascular events may be reduced. But certainly randomised studies are needed on the subject.

Biography

Rouchon-Isnard Myriam has completed her MD in Clermont-Ferrand Auvergne University, her Master in Nutrition in Clermont II University. She works in a Non-Profit Association for Dialysis Patients in France. She is involved in clinical research, teaching at the University of Science and Technical for Physical and Sportive Activity, member of the Liaison Committee for Food and Nutrition in Auvergne. She has a good experience in physical activity for dialysis patients with 150 patients involved in her program among 400 dialysis patients (HD & PD), and began an educational program for kidney transplant patients. The results are yet to be published, and have been presented in the ASN Kidney Week in 2013 and 2014 (Posters).

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