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Effect of Intradialytic Aerobic exercise on clinical outcomes of hemodialysis patients in the United Arab Emirates

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Rationale: Examine the effect of intradialytic aerobic exercise (IDE) on hemodialysis (HD) patient clinical outcomes and the barriers to physical activity in the United Arab Emirates (UAE).

Methods: The largest HD unit in Sharjah emirate was chosen; ethical approval was received from Zayed University and Ministry of Health's ethical committees. Patients were their own controls, and study parameters were collected before and after the study. Inclusion criteria were: stable HD patient ≥ 18 years, dialyzing 3 times per week, cognitively aware, able to sign a consent form and received a clearance from nephrologist to enter the study. The intervention included a low intensity aerobic IDE of 45 minutes per HD session, tailored to each patient's fitness scale (BORG scale) for 6 months. Patients were educated on the importance of exercise, its effect on quality of life and efficacy of dialysis. Main outcomes measures were serum phosphorus (P), urea reduction ration (URR), malnutrition inflammation score (MIS), barriers to exercise and quality of life (QOL using euroqol5) collected at baseline and post intervention.

Results: 41 patients were included in the study. At 6 months, drop out rate was $\frac{1}{4}$. The intervention resulted in a significant decrease in P ($p=0.01$) and $\text{Ca} \times \text{P}$ ($p=0.03$) in patients who were hyperphosphatemic at baseline; this decrease was non-significant in the whole sample ($p>0.05$). IDE at the prescribed magnitude increased the URR but not significantly ($p=0.96$). There was a significant increase in the MIS ($p=0.005$). Four patients had no barriers to exercise post intervention, a category that was non-existent at baseline. Furthermore, the QOL visual analogue scale increased ($p=0.32$).

Conclusion: This is the first trial in the UAE to introduce IDE. Aerobic IDE for 45 minutes is safe and proved to be beneficial especially for hyperphosphatemic patients.

Keywords: intradialytic exercise, quality of life, serum phosphorus, urea clearance

Biography

M Karavetian earned her PhD in "Health Promotion" from Maastricht University, Netherlands; and her dietetics degree from American University of Beirut, Lebanon. She has extensive experience in nutrition management of the chronically and critically ill patients; she shares her experience in conferences and workshops locally and regionally in the aim of training health care professionals for better health care. She also is trained and specialized in health care quality (setting policies and procedures and training staff on the new set of rules in health care settings). Her research is focused on finding effective strategies to change dietary behavior in chronically ill patients. Her publications focus on dietary management of hemodialysis patients and finding the optimal dietitian-to-patient ratio needed in the hemodialysis unit in the Arab world for optimal clinical outcomes. She has shared her experience in national and international conferences. She currently is an Assistant Professor in the department of Natural Sciences in Public Health, College of Sustainable Sciences and Humanities, Zayed University, Dubai.

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