

## Resolution of exercise-induced Hyperkalemia in Hemodialysis patients

R. Michael Culpepper

University of South Alabama School of Medicine, USA

### Abstract:

Hyperkalemia occurs with intense exercise in individuals with normal renal function. Exercise is deemed beneficial to patients on hemodialysis to forestall frailty and improve overall well-being. We examined the magnitude of rise in serum [K<sup>+</sup>], any accompanying electrocardiographic effects and hemodynamics in functionally a nephric hemodialysis patients subject to brief, exhaustive exercise. The time course of changes in [K<sup>+</sup>] in both venous blood and arterial blood were charted and correlated to changes in arterial pH, blood glucose, blood glucose, serum [Na<sup>+</sup>] and hematocrit. The study was approved by the Committee for Protection of Human Subjects and all participants gave their written informed consent. None of the subjects has known active cardiac disease and none were taking  $\beta$ -adrenergic blocking agents, digitalis preparations or potassium sparing drugs. Arterial [K<sup>+</sup>] peaked at 3.5 minutes with a mean rise of 1.67 mEq/L. Venous [K<sup>+</sup>] peaked about 1 minute earlier, averaging 0.84 mEq/L increase yielding a mean A-V difference in [K<sup>+</sup>] of 0.81 mEq/L. All values returned to baseline within 3 minutes of rest. There were significant falls in arterial pH averaging -0.15u and rises in serum lactate with a mean increase of 8.14 mmol/L at 5 minutes. Changes in serum glucose, insulin, serum [Na<sup>+</sup>] and hematocrit were insignificant throughout the study. We conclude that resting skeletal muscle buffers rises in exercise-induced hyperkalemia in hemodialysis patients as has seen in normal persons.

### Speaker Publications:

1. "Clearance of 131I by hemodialysis"; September 1992 Clinical nephrology 38(2):110-4
2. "Remnant kidney oxygen consumption: Hyper metabolism or hyperbole?" September 1992 Journal of the American Society of Nephrology 3(2):151-6
3. "Case report: a novel form of free protein S deficiency in an HIV-positive patient on hemodialysis"; July 1992 The American Journal of the Medical Sciences 303(6):402-4
4. "A Novel Form of Free Protein S Deficiency in an HIV-Positive Patient on Hemodialysis"; June 1992 The American Journal of the Medical Sciences 303(6):402-403
5. "Radiation Exposure from Radionuclide Use in Dialysis Patients"; April 1992 Seminars in Dialysis 5(2):129-135.



[21<sup>st</sup> Global Nephrology, Urology and Kidney Failure Congress](#); June 10-11, 2020.

### Abstract Citation:

R. Michael Culpepper, Resolution of Exercise-induced Hyperkalemia in Hemodialysis Patients, Nephrologists 2020, 21st Global Nephrology, Urology and Kidney Failure Congress; June 10-11, 2020 (<https://nephrologists.insightconferences.com/abstract/2020/resolution-of-exercise-induced-hyperkalemia-in-hemodialysis-patients>)



### Biography:

Dr. Culpepper is Professor of Medicine at the University Of South Alabama School Of Medicine, past Director of the Division of Nephrology and has served on the Board of Directors of the National Kidney Foundation and Network 8 of the ESRD surveillance organization. He has published works in renal physiology and clinical nephrology.