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Aging, alkaline phosphatase and fat mass index are associated with fluid overload in haemodialysis patients

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The chronic Fluid Overload (FO) is considered a major cause of hypertension, heart failure and mortality among patients with end-stage renal disease. The aim of the present study was to investigate whether aging, anthropometric, and biochemical parameters are associated with FO in haemodialysis patients. One hundred ninety-eight adult patients undergoing haemodialysis (20-97 years-old, 64% male) were included in the analysis. Body composition was measured by bioimpedance spectroscopy (Body Composition Monitor - BCM, Fresenius Medical Care, Germany) and blood samples were assessed before dialysis session. FO was assessed by the time-average fluid overload (TAFO). Data were analysed by Pearson's correlation, and linear regression model was applied. Significance was set at $p < 0.05$. Correlation analysis including all the 198 haemodialysis patients showed age, post-dialysis systolic blood pressure, and alkaline phosphatase to correlate positively, whereas BMI, fat mass index and albumin levels correlated negatively with TAFO. The linear regression model showed positive association of TAFO with age ($p < 0.001$) and alkaline phosphatase ($p < 0.001$), and a negative association with fat mass index ($p < 0.001$). To the best of our knowledge, this is the first demonstration of an important association between FO and alkaline phosphatase. Our findings showed that the fluid overload can be associated with several factors, and that the higher the age and phosphatase alkaline levels, and the lower the fat mass, the more severe is the FO in haemodialysis patients. Further studies are necessary to better understand these associations.

Keywords: End-stage Renal Disease, Hypervolemia, Dialysis, Bioimpedance, Heart failure and Anthropometry.

Biography:

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