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Serum albumin is associated with fluid overload but not with BMI and muscle mass index in haemodialysis patients

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Hypoalbuminemia is a major concern among haemodialysis patients as it is associated with increased morbidity and mortality risk. Besides protein-energy malnutrition due to inadequate protein and/or caloric intake, hypoalbuminemia in patients with end-stage renal dialysis is also attributed to several other factors which can negatively influences the albumin synthesis. Thus, the aim of the present study is to investigate other variables that may influences albumin levels in patients on maintenance haemodialysis. 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. The patients were then allocated into two groups according to their serum albumin levels: normal-albumin (albumin ≥3.5g/dL; n=145) and hypoalbuminemia (albumin <3.5g/dL; n=53) groups. Fluid overload was calculated by the time-average fluid overload (TAFO). Data were analysed by either Student's t test or Mann-Whitney, for $p<0.05$. Pearson´s correlation were applied. The group with hypoalbuminemia were older and had higher pre-and postdialysis systolic blood pressure, and fluid overload. The correlations showed that age and TAFO were negatively associated with serum albumin levels, whereas BMI, muscle-mass index, urea levels and other biochemical and anthropometric parameters did not showed a significant correlation with serum albumin. We concluded that pre-dialysis albumin levels were more associated with fluid overload and aging than with body muscle mass and protein intake. We wonder that our results might be due to the impact of dilution on serum albumin levels in the pre-dialysis period in patients with fluid overload and if the post-dialysis analysis would be the more appropriate to mitigate such effect. Accordingly, fluid overload should always be considered when the patient is diagnosed with hypoalbuminemia.

Keywords: albumin, protein malnutrition, dialysis, chronic kidney disease, overhydration

Biography:

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