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P125 -The effect of glucose absorption on changes in body composition in peritoneal dialysis patients

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TITLE

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Introduction

Mortality is greater for kidney failure patients who lose lean muscle mass and increase their body fat (1). Previous studies in peritoneal dialysis (PD) patients investigating the effect of glucose exposure from PD dialysates on body composition changes report mixed results. It is unclear whether calculating glucose administered in fresh dialysates is an accurate measure of glucose absorption. In our study we measured the glucose absorption in 143 PD patients and compared this with body composition changes over a year of treatment with PD.

Methods

We measured the body composition of 143 patients one month after starting peritoneal dialysis using multi-frequency segmental bio-impedance (MFBI). We then repeated the MFBI measurements 11-13 months later and calculated change in percentage body fat and soft lean mass index. We also measured glucose absorption by deducting the glucose in drained out peritoneal dialysate effluent from total instilled. We then used Spearman's correlation coefficient to assess the relationship between glucose absorption and body composition changes.

Results

Our cohort included 143 PD patients with 89 (62.2%) males, 54 (37.8%) females, average age of 61 with 53 (37.1%) diabetics. 106 (74.1%) patients were treated by automated PD cyclers (APD) and 37 (25.9%) by continuous ambulatory PD (CAPD). Spearman correlation coefficients demonstrated a significant association between the increase in percentage body fat ($r=0.214$, $p<0.05$, Fig. 1) and reduction in lean body mass index ($r=-0.231$, $p<0.01$, Fig. 2) with glucose absorption.

Discussion

Increased percentage body fat and reduced lean body mass are associated with increased mortality in dialysis patients (1). Our data supports a link between increased glucose absorption from peritoneal dialysates and increased body fat and reduced lean mass in PD patients. Although the correlation between glucose exposure and glucose absorption needs to be established, our data suggests that changes in peritoneal dialysis prescriptions designed to minimize glucose absorption could reduce harmful changes in body composition.

References

(1) Lean Body Mass and Survival in Hemodialysis Patients and the Roles of Race and Ethnicity. Jialin Wang et al. J Ren Nutr. 2016 Jan; 26(1): 26–37.