

STEADY CONCENTRATION PERITONEAL DIALYSIS INCREASES ULTRAFILTRATION AND SODIUM REMOVAL COMPARED WITH CONTINUOUS AMBULATORY PERITONEAL DIALYSIS (CAPD)

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Background:

Fluid and sodium removal (NaR) may be a challenge during glucose-based PD, leading to increased use of high glucose solutions to maintain sufficient fluid removal. This may lead to increased sodium sieving, resulting in reduced NaR. Carry Life[®] UF uses steady concentration PD (SCPD), where the intraperitoneal (IP) glucose concentration is maintained by infusion of glucose to provide a continuous ultrafiltration (UF) throughout the dwell. The present study investigated the effect of Carry Life[®] UF vs. CAPD regarding UF, NaR and glucose absorption.

Methods:

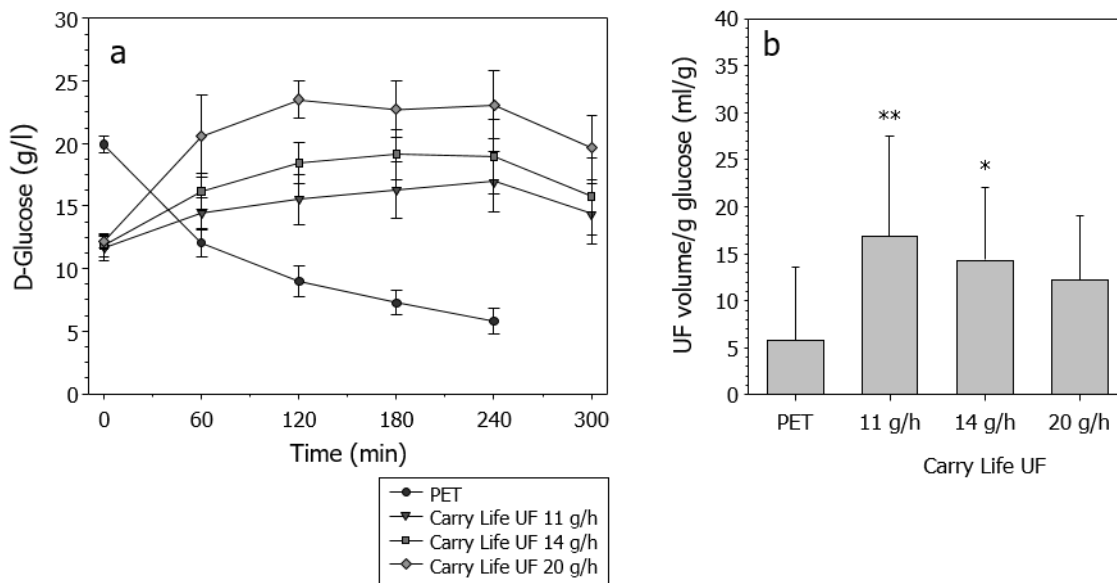
Eight stable PD patients were included in the study. Subjects were treated with 5-hour Carry Life[®] UF treatments using three different glucose doses (11, 14, 20 g/h). An initial fill with 1.5 l, 1.36% glucose PD solution was used. A small volume of dialysate was drained hourly to avoid overflow. A 4-hour peritoneal equilibration test (PET) (2.0 l, 2.27% glucose) served as control. Data expressed as mean±SD, statistical analysis using ANOVA.

Results:

UF volumes were significantly increased during Carry Life[®] UF treatments (646±256, 739±312, 863±380 ml for 11, 14 and 20 g/h) vs. PET (162±242 ml, p<0.01). NaR increased significantly during Carry Life[®] UF treatments (86±27, 92±33, 110±37 mmol/dwell for 11, 14, and 20 g glucose/h) compared to PET (22±33 mmol/dwell, p<0.001).

Conclusions:

SCPD performed with Carry Life[®] UF maintained a stable IP glucose concentration during the treatment (figure a) which generated significantly higher UF volumes compared to PET. During the Carry Life UF treatments glucose was used more efficiently, particularly for the two lowest doses, in comparison to PET (figure b). In summary, SCPD using Carry Life[®] UF increases the efficiency of PD compared to standard, glucose-based CAPD with respect to UF and NaR.



IP glucose concentration in g/l during treatments (a).

UF efficiency expressed as UF volume in ml per gram of glucose absorbed during treatments, * $p < 0.05$, ** $p < 0.01$ (b).