

## INCREASED PERITONEAL ULTRAFILTRATION AT A LOWER METABOLIC COST DURING STEADY CONCENTRATION PD

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### Objectives

Fluid overload is a major issue in PD, leading to increased use of hypertonic PD fluids and may cause technique failure. Carry Life® UF is a novel portable PD device utilizing steady concentration PD for patients requiring enhanced fluid removal. The therapeutic concept is to maintain a stable dialysate glucose concentration by administering glucose throughout the dwell, to compensate for glucose uptake. A small amount of the dialysate is drained cyclically into the device and glucose is added before the fluid is returned to the patient. The aim of this study was to investigate ultrafiltration (UF) and glucose absorption with Carry Life® UF.

### 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 1500 ml, 1.36% glucose PD solution was used. A small volume of dialysate was drained hourly to avoid overfill. A standard 4-hour Peritoneal Equilibration Test (PET) (2000 ml, 2.27% glucose) was used as control. Data expressed as mean ± SD, statistical analysis using one-way ANOVA, \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

### Results

Treatment		Average UF rate (ml/h)	Glucose absorption (g/h)	UF efficiency (ml UF/g glucose)
PET		40±60	7.8±1.1	5.9±7.8
Carry Life® UF	11 g/h	124±49**	8.2±2.0	17.0±10.6**
	14 g/h	146±63***	10.4±1.0***	14.5±7.7*
	20 g/h	168±78***	14.0±1.5***	12.4±6.8

### Conclusions

The Carry Life® UF therapy increased UF rates significantly compared to control and the amount of UF per gram of glucose absorbed was higher at all doses; 11g/h was most efficient. Carry Life® UF provided a significantly improved UF efficiency by maintaining a stable dialysate glucose concentration throughout the dwell. In conclusion, Carry Life® UF may improve the care of PD patients by enabling higher UF rates at a lower metabolic cost.