

PERITONEAL ULTRAFILTRATION WITH A STABLE GLUCOSE CONCENTRATION USING THE CARRY LIFE® UF SYSTEM

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INTRODUCTION

Chronic fluid overload is common in Peritoneal Dialysis (PD) patients and is associated with increased mortality.

Carry Life® UF is a new portable device intended to achieve an efficient and gentle ultrafiltration (UF) in patients that require improved volume management.

Throughout the treatment a small portion of the intraperitoneal fluid is moved from the patient to the device and back (via the PD catheter).

In the device, concentrated glucose is added to and diluted in the fluid before it is returned to the patient.

The fluid returned to patient has a glucose concentration in the range of standard PD solutions.

Therapeutic concept Carry Life® UF

- Administration of glucose throughout the treatment to compensate for glucose uptake by the patient
- Adjustable glucose dose based on individual patient need
- Stable intraperitoneal glucose concentration
- Maintained osmotic pressure and ultrafiltration

AIM

A feasibility study to evaluate:

- maintenance of intraperitoneal glucose concentration
- ultrafiltration volume and total fluid output
- patient tolerability

METHOD

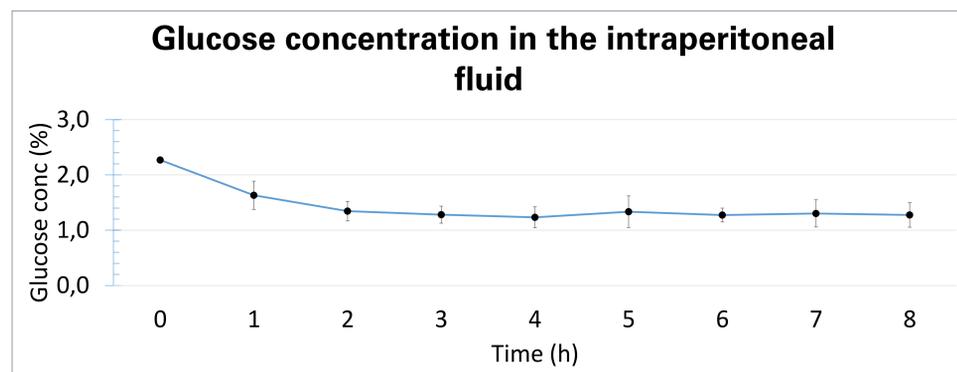
- Five patients on stable PD therapy were treated with the Carry Life® UF for two eight hour sessions.
- After filling the patient with 2 L PD solution (2.27% glucose), the Carry Life® UF was connected to the PD catheter and the treatment started.
- Glucose administration rate was set at 9 -11 g/h dependent on transporter type.
- Intraperitoneal fluid was drained regularly during the treatment session.
- Achieved UF volume was compared with the patient's regular CAPD regimen
- Data is expressed as mean ± ST DEV.

PATIENT DEMOGRAPHICS

P#	Gender	Age	Diagnosis	Transporter	Regular treatment 4 CAPD exchanges/24 h
1	M	76	Nephrosclerosis	High	2 x 2.3%, 1.36%, Icodextrin overnight
2	M	67	Nephrosclerosis	Medium	2 x 2.3%, 1.36%, Icodextrin overnight
3	M	73	Nephrosclerosis	Medium	2 x 2.3%, 1.5%, Icodextrin overnight
4	F	59	Chronic glomerulonephritis	Low Medium	2 x 1.5%, 2 x 2.3%
5	M	78	Nephrosclerosis	Not known	3 x 2.3%, Icodextrin overnight

RESULTS

- All patients tolerated the treatment well - no discomfort associated with the intermittent transfer of intraperitoneal fluid.
- Glucose concentration in the intraperitoneal fluid was maintained at around 1.3% (see Figure below).
- Treatment with Carry Life® UF for eight hours resulted in a net UF in all patients, on average 613± 685 ml, compared with 860 ± 641 ml during 24 hours with the patients' regular CAPD regimen.



UF volume, total fluid output (8 hours treatment) and average UF rates

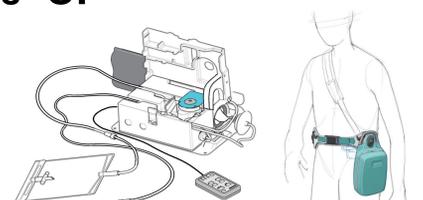
P#	UF volume (ml)	Total fluid output, UF+urine (ml)	Average UF Carry Life® (ml/h)	Average UF CAPD regimen (ml/h)
1	760±232	785±4	95±4	57±16
2	168±93	1288±48	21±12	3±8
3	293±202	883±852	37±25	13±7
4	1714±797	1852±850	214±100	63±15
5	129±35	1739±78	16±4	44±8

CONCLUSIONS

- Carry Life® UF provides a peritoneal ultrafiltration treatment that maintains a stable intraperitoneal glucose concentration
- With a glucose administration of 9-11 g/h throughout the treatment session, a net ultrafiltration was achieved in patients normally requiring Icodextrin
- The average UF rate increased in 4 out of 5 patients compared to their regular CAPD regimen
- In one patient, the average UF rate using Carry Life® UF was comparable to hemofiltration rates
- Further studies are necessary in order to understand the relationship between a stable intraperitoneal glucose concentration, ultrafiltration and individual patient characteristics

Carry Life® UF

- Cyclor
- Line set with drain bag
- Glucose solution



Carry Life® UF is not available for sale