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Theme : Clinical Research on PD Fluids and Regimens

Carbohydrate Metabolism Disturbances in Non-diabetic Patients on Peritoneal Dialysis

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Background: Peritoneal dialysis (PD) patients are exposed to glucose based dialysis solutions, which can be associated with glucose absorption from the peritoneal cavity and potential alterations in the carbohydrate (CH) metabolism, despite the presence of diabetes. The aim of this study was to evaluate disturbances in CH metabolism in non-diabetic PD and HD patients.

Material and methods: We evaluated 80 hemodialysis patients and 74 PD patients in a university based clinic. Diabetic patients were excluded based on detailed medical history and fasting glucose levels (>126mg/dL). Fasting glucose, HbA1c, fructosamine and HOMA index assessed CH metabolism.

Results: 47 (58%) non-diabetic patients in HD (mean age of 46.10 years-old, BMI of 23.4) and 39 (52%) non-diabetic patients in PD (mean age of 59.15 years-old, BMI of 25.5) were included in the analysis.

The results are as follows:

	PD	HD	P value
Fasting glucose (mg/dL)	90.16	81.14	<0.005
Fructosamine ((mol/L)	300.48	314.60	ns
HbA1C (%)	6.1 ± 0.8	5.4 ± 0.5	<0.0001
HOMA index	3.3 ± 3.2	2.1 ± 2.0	<0.05

In addition, 6 (15%) non-diabetic patients on PD presented HbA1c above 7%, in contrast to the absence of altered HbA1c in HD patients.

Conclusions: Nondiabetic PD patients present significant alterations in several aspects of CH metabolism in comparison to HD patients, most likely due to the glucose absorption from the peritoneal cavity. Future studies will need to analyze the impact of these disturbances on clinical outcome, as well as the potential benefits of non-glucose osmotic agents in improving these parameters in PD patients.