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EFFECT OF ICODEXTRIN OR GLUCOSE PERITONEAL DIALYSIS SOLUTIONS ON TRIGLYCERIDE AND OLEIC ACID LEVELS IN PATIENTS WITH PERITONEAL DIALYSIS

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Objectives:

Dyslipidemia is a major cause of cardiovascular disease (CVD) and CVD incidence is definitely increased according to peritoneal dialysis (PD) vintage. The PD solutions contained glucose may affect on dyslipidemia including hypertriglyceridemia. The oleic acid (OA) content in the erythrocyte membrane was increased in patients with acute coronary syndrome and is significantly higher in PD patients than HD patients. We conducted this trial for comparing effect of icodextrin or glucose PD solutions on triglyceride and oleic acid levels in PD patients (EXIT trial).

Methods:

This EXIT trial is an open label, randomized, cross-over multicenter trial. Twenty-two patients were enrolled and 15 patients finished this trial. Glucose group was initially exposed to glucose PD solutions for 6 months and then exposed to icodextrin PD solution for 3 months. Extraneal group was initially exposed to icodextrin PD solution for 3 months and then exposed to glucose PD solutions for 6 months.

Results:

The enrolled patients were aged 63.6±9.5 years old and mean PD duration was 10.8±5.9 months. There were no significant differences of baseline clinical and laboratory data between both groups. There was no significant decrease of triglyceride levels, erythrocyte membrane OA and monounsaturated fatty acid (MUFA) contents after 3 months exposure of icodextrin PD solution compared to baseline. However, there was a tendency of triglyceride levels decrease after 3 months exposure with icodextrin PD solution and there was a tendency of triglyceride levels increase after 3 months exposure with glucose PD solutions compared to baseline levels. Continuous 6 months exposure with glucose PD solution significantly increased triglyceride levels, LDL-cholesterol levels, erythrocyte membrane OA and MUFA contents compared to baseline levels.

Conclusions: Continuous exposure of glucose PD solutions may negatively affect on triglyceride and erythrocyte membrane OA contents. Combined use of icodextrin and glucose PD solutions may prevent lipid derangement (ClinicalTrial.gov number; NCT 02166359).