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Dialysis

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Oral Glucose Tolerance Test and Serum Insulin Levels in Patients Undergoing Continuous Ambulatory Peritoneal Dialysis

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Background: The aim was to evaluate the state of glucose intolerance in non-diabetic peritoneal dialysis (PD) patients.

Methods: The 75 gram Oral Glucose Tolerance Test (OGTT) was done in 41 PD patients without history of diabetes mellitus (22 males, 19 females, aged 53.8 ± 13.2 years (mean ± SD)). The results of the 75 gm OGTT were compared to that of the normal group (n=41) and impaired glucose tolerance (IGT) group (n=41), both with normal renal function.

Results: Among 41 patients, nine (22%) had IGT and three (7.3%) were newly diagnosed with diabetes. There was no difference in fasting glucose levels between the PD (95.4 ± 7.9 mg/dl) and the normal group. (93.2 ± 7.6 mg/dl, P=0.209). Glucose levels checked 2 hours after oral glucose intake (pp2hr) were significantly higher in the PD group (135.7 ± 38.5 mg/dl) compared to that of the normal group (103.2 ± 15.7 mg/dl, P=0.000) but lower than that of the IGT group (162.1 ± 16.3 mg/dl, P=0.000). Fasting and pp2hr insulin levels were significantly higher in the IGT group (13.8 ± 7.5 μU/ml and 93.6 ± 75.8 μU/ml, respectively) compared to the other 2 groups (normal group 7.5 ± 4.3 μU/ml and 36.6 ± 21.0 μU/ml, PD group 8.7 ± 4.3 μU/ml and 39.2 ± 20.7 μU/ml, P=0.001 and 0.000). Fasting C-Peptide levels were significantly higher in PD patients (7.0 ± 3.1 ng/mL) compared to those of the normal and IGT groups (2.2 ± 1.5 ng/mL, 2.9 ± 1.1 ng/mL, P=0.000). PP2hr C-peptide levels were higher in the IGT group (11.7 ± 3.0 ng/mL) compared to the normal group (7.2 ± 2.1 ng/mL), and highest in the PD group (14.6 ± 3.3 ng/mL) compared to the other 2 groups (P=0.000). There was no significant difference of HbA1C levels and lipid profiles (total cholesterol, triglyceride, LDL and HLDL) among the 3 groups.

Conclusion: Our results demonstrated that according to the 75 gram OGTT, most PD patients were non-diabetics, but they showed higher pp2hr glucose levels compared to that of the

normal group. Significantly higher fasting and pp2hr C-peptide levels were also observed in the PD group compared to the normal and IGT groups.

Keywords: Continuous Ambulatory Peritoneal Dialysis, glucose intolerance, oral glucose tolerance test