

Anthropometric Measurements in Peritoneal Dialysis Patients

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INTRODUCTION: Glucose and lipid metabolism disorders like weight gain, glucose intolerance, decreased muscle mass, increased fat mass, and hyperlipidemia may be observed in peritoneal dialysis (PD) patients. We aimed to investigate whether there is a correlation between anthropometric and metabolic parameters of PD patients.

METHODS: The study included patients in our PD unit, who had consecutive anthropometric measurements. Age, gender, presence of diabetes mellitus and body mass index (BMI=height/weight²) were recorded. The biceps skin fold thickness (SFT), triceps SFT, mid-arm, waist, hip and neck circumferences were recorded by the same physician using skin caliper and measuring tape. Total, LDL and HDL cholesterol, triglyceride, glucose and hemoglobin A1c (HbA1c) were recorded. Daily glucose exposure was calculated. SPSS 20.0 program was used for statistical analysis. Pearson's test was used for data with normal distribution and Spearman correlation test was used for abnormal parameters in the correlation analysis.

Table-1: Anthropometric measurements of the patients.

	First evaluation	Second evaluation	p
BMI (kg/m ²)	30.3±6.3	30.1±5.7	0.64
Neck circumference (cm)	38.7±3.4	39.2±4.2	0.42
Triceps SFT (mm)	31.6±13.8	24.1±11.2	0.07
Biceps SFT (mm)	26.8±12.4	21±13.2	0.20
Waist circumference (cm)	106.8±13.8	104.3±12.1	0.19
Hip circumference (cm)	105.8±11.4	107.3±10.9	0.37
Mid-arm circumference (cm)	28.3±7.3	29.7±6.3	0.39

SFT: Skin fold thickness

CONCLUSION: We did not detect significant change in the anthropometric measurements although the number of patients with BMI over 30 have increased. Glucose and lipid parameters did not change significantly in one year, and was not correlated with daily glucose exposure. A long term study involving more patients is planned.

Table-2: Metabolic parameters of the patients at the first and second evaluations

	First evaluation	Second evaluation	p
HDL cholesterol (mg/dl)	40.0±8.5	39.2±6.1	0.529
LDL cholesterol (mg/dl)	130.2±45.7	120.8±41.2	0.331
Total cholesterol (mg/dl)	228.1±74.9	219.9±63.2	0.483
Triglyceride (mg/dl)	251.3±183.6	249.3±144.7	0.908
Glucose (mg/dl)	123.0±38.8	118.9±33.9	0.422
HbA1c (%)	6.1±1.1	6.1±1.3	0.916
Glucose exposure (g/day)	170.5±83.7	185.1±87.5	0.08

RESULTS: A total of 24 PD patients (14 APD, 10 CAPD patients; female/male ratio: 13/11) were included. The mean age was 61.88±10.8 years. 10 patients (41.7%) were diabetic. Anthropometric measurements of the patients are presented in Table-1. No significant difference was found between the measurements at the beginning of the treatment and the second year. The number of patients with a BMI over 30 kg/m² was nine in the first measurement and 11 in the second measurement (p<0.001).

Metabolic parameters of the patients at the first and second evaluations were not statistically different (Table-2). Although the mean glucose exposure increased slightly in the second measurement, the difference was not significant.