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The 24 months changes of body fat mass and adipokines in patients starting peritoneal dialysis

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Background: Peritoneal dialysis (PD) is characterized by the gain in fat mass. The fat tissue is a complex endocrine organ to release various adipokines. In this study, we prospectively examined serial changes of fat composition and adipokines in patients undergoing PD.

Methods: Body composition was assessed by computed tomogram (CT). Nutrition status and adipokines (leptin, adiponectin, interleukin [IL]-6, and tumor necrosis factor [TNF]-a) were assessed on the seventh day, 6 months, 12 months and 24 months after the start of PD.

Results: Fifty four patients (28 men), with a mean age of 53.2 ± 13.2 years, were enrolled. Baseline fat mass, especially subcutaneous fat mass, defined baseline leptin (r = 0.547), adiponetin (r = -0.477), and IL-6 (r = 0.391). Visceral fat mass was correlated with leptin (r=0.545) and adiponectin (r = -0.514). Baseline adiponectin was negative correlated with baseline leptin (r = -0.363). While body weight and leptin increased continuously during the 24 months, serum adiponectin decreased in that period. The changes of visceral and subcutaneous fat mass were greater in first 12 months and 6 months, respectively. There was no difference of IL-6 and TNF-a. Eight patients expired during follow up period (mean 47. 4 months). Twenty seven patients continued PD. Increased baseline and serial change of IL-6 level was risk factors for mortality. After adjusting age, sex, DM, and CVD, the significance of IL-6 level became weak.

Conclusion: Baseline subcutaneous fat in patients who starting PD defines baseline adipokine levels. While leptin and adiponectine increased and decreased respectively, IL-6 didn't change in first 24 months. Only IL-6 levels at baseline and time change influenced the patient survival.

Keywords: adipokines, body fat mass, peritoneal dialysis