

## Metabolic syndrome in end stage renal disease

Sir,

One of the major causes of mortality in patients with kidney failure requiring dialysis is cardiovascular disease.

Metabolic syndrome (MetS) refers to a collection of metabolic disorders that causes systemic inflammation and therefore plays an important role in increasing the incidence of cardiovascular disorders and mortality and morbidity due to it.

Metabolic syndrome is present in an individual when three or more criteria of the disorder (abdominal obesity, hypertension, hyperglycemia, hypertriglyceridemia and reduced high density lipoprotein [HDL]) are present.<sup>[1,2]</sup> Uremia causes progressive insulin resistance<sup>[3]</sup> which may aggravate the MetS.

We assessed the prevalence of MetS in patients with end stage renal disease (ESRD) who were on peritoneal dialysis (PD).

Inclusion criteria were; age >20, history of dialysis for >1-month and patient's permission. Blood sampling was done in all patients and triglyceride, cholesterol, HDL, fasting blood glucose, albumin, calcium, phosphorus, hemoglobin and parathyroid hormone (PTH) were analyzed data were analyzed using SPSS-16 (Chicago, IL, USA).

A total of 130 individuals were evaluated. 95 (73%) patients in PD group had MetS. The most prevalent metabolic disorder was hypertension (91%). Diabetes, hypertriglyceridemia and abdominal obesity was observed in 70%, 65% and 37% respectively. HDL had reduced in 33% of patients.

There was no significant difference between duration of renal insufficiency and duration of dialysis comparing patients with MetS and those without MetS ( $P > 0.05$ ). Serum PTH level, hemoglobin, calcium and phosphorus reveal no differences between MetS patients and non-MetS patients ( $P > 0.05$ ), however cholesterol, albumin and white blood cells showed differences between

mentioned groups ( $P < 0.05$ ). Albumin level was higher in non-MetS patients but cholesterol and white blood cells had higher level and number in MetS patients.

We found the prevalence of MetS in PD patients was 73%. Young *et al.* showed the prevalence of MetS between dialysis patients was 69.3% which had no significant difference comparing general population.<sup>[4]</sup> Previous studies demonstrated that MetS is higher in PD.<sup>[5]</sup> We also found that the presence of MetS in PD is high. It might be due to absorption of PD fluid's glucose and subsequent hyperglycemia in PD patients.<sup>[6,7]</sup> Inflammatory markers such as Interleukins were not evaluated in our patients which could be one of our limitations.

We suggest further studies in ESRD population patients to assess the risk factors of progression of MetS.

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