

**CHARACTERISTICS OF THE LIPID PROFILE, RENAL FUNCTION, AND
INFLAMMATORY MARKERS IN PATIENTS WITH
CARDIORENOMETABOLIC SYNDROME ACCORDING TO THE PRESENCE
OF DIABETES MELLITUS**

E.N. Nomozov, N.Z. Srojedinova

*Republican Specialized Scientific and Practical Medical Center of Cardiology
Tashkent, Uzbekistan*

To assess differences in lipid metabolism parameters, renal function, and markers of systemic inflammation in patients with cardiorenometabolic syndrome (CRMS) according to the presence of diabetes mellitus (DM).

A comparative analysis of clinical and laboratory parameters was performed in 140 patients diagnosed with CRMS at the Republican Specialized Scientific and Practical Medical Center of Cardiology in 2025. According to the presence of DM, patients were divided into two groups: 58 patients (41.4%) with DM and 82 patients (58.6%) without DM.

Lipid profile parameters included triglycerides (TG), HDL-C, LDL-C, VLDL-C, and lipoprotein(a) [Lp(a)]. Renal function was assessed by serum creatinine, urea, and estimated glomerular filtration rate (eGFR), while systemic inflammation was evaluated by C-reactive protein (CRP). CRMS was defined according to the 2023 American Heart Association (AHA) classification. Patients with chronic kidney disease stages 3B–5 were excluded. Biochemical analyses were performed using the RANDOX Daytona automated analyzer (UK). Quantitative variables were expressed as mean $\pm$ standard deviation ($M \pm SD$), and differences between two independent groups were assessed using Welch's t-test. A $p < 0.05$ was considered statistically significant.

Patients with CRMS and concomitant DM demonstrated higher levels of several atherogenic lipid parameters compared with patients without DM. TG levels were 2.38 ± 1.24 and 1.90 ± 1.18 mmol/L, respectively ($p = 0.023$). VLDL-C levels were 1.06 ± 0.57 mmol/L (41.18 ± 21.90 mg/dL) in the DM group and 0.84 ± 0.48 mmol/L (32.66 ± 18.53 mg/dL) in the non-DM group ($p = 0.017$).

LDL-C levels were significantly higher in patients with DM, reaching 3.64 ± 1.22 mmol/L compared with 2.59 ± 1.12 mmol/L in patients without DM ($p < 0.001$). The most pronounced difference was observed for Lp(a): 54.0 ± 12.2 nmol/L in patients with DM versus 26.4 ± 6.9 nmol/L in those without DM ($p < 0.001$). HDL-C levels were also higher in the DM group, at 2.17 ± 0.72 mmol/L compared with 1.39 ± 0.52 mmol/L in the non-DM group ($p < 0.001$). Analysis of laboratory parameters related to renal function showed that serum creatinine levels were 90.70 ± 31.21 μ mol/L in patients with DM and 79.05 ± 23.07 μ mol/L in patients without DM ($p = 0.018$). Urea levels were also higher in the DM group, at 7.70 ± 3.08 mmol/L versus 5.05 ± 1.90 mmol/L, respectively ($p < 0.001$). eGFR was 80.24 ± 19.59 mL/min/1.73 m² in patients with DM and 71.06 ± 22.13 mL/min/1.73 m² in patients without DM ($p = 0.011$). CRP levels, reflecting systemic inflammatory activity, were significantly higher in patients with DM, at 15.77 ± 6.36 mg/L compared with 7.80 ± 2.21 mg/L in patients without DM ($p < 0.001$).

Diabetes mellitus (DM) in patients with cardiorenometabolic syndrome was associated with significant differences in lipid metabolism, renal function, and systemic inflammation. Patients with DM had significantly higher TG, VLDL-C, LDL-C, Lp(a), creatinine, urea, and CRP levels than those without DM. Significant between-group differences were also observed in HDL-C and eGFR.