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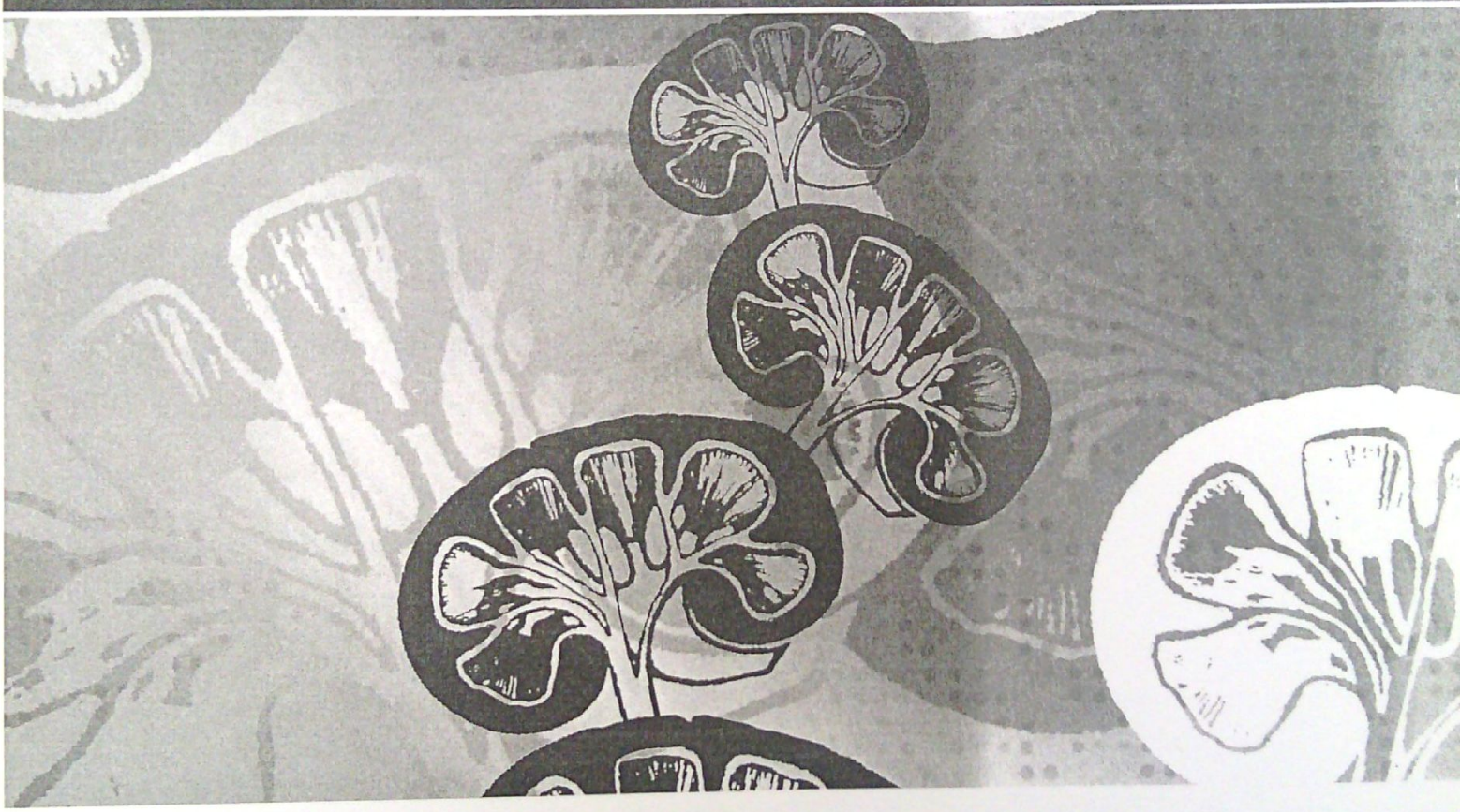

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ASSOCIATION OF ENDOTHELIAL DYSFUNCTION, PLASMA ADMA LEVELS, CARDIAC FUNCTIONS, AND METABOLIC PARAMETERS IN PERITONEAL DIALYSIS PATIENTS

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BACKGROUND: Chronic kidney disease (CKD) is associated with endothelial dysfunction and increased cardiovascular events. Asymmetric dimethylarginine (ADMA) is accepted as a risk factor for coronary artery disease by causing endothelial dysfunction and vasospasm. We aimed in the present study to investigate the relationship between flow-mediated dilatation (FMD) as an indicator of endothelial dysfunction and ADMA levels, echocardiographic and metabolic parameters in PD patients.

METHODS: This is a cross-sectional study in which PD patients aged 18-80; with at least three-month duration of dialysis and without active cardiac, infectious or malignant diseases, and clinically evident hypervolemia were included. FMD measurement, ADMA levels and echocardiographic parameters were recorded.

RESULTS: Fifty-five patients were included in the study. Their mean age was 53 ± 15 years. Mean FMD level was 10.7 ± 6.5 %, and the mean ADMA level was 81.9 ± 48.0 μmol/L. There was no statistically significant relationship between ADMA levels and FMD ($p = 0.873$). We detected negative correlation of FMD with systolic and diastolic blood pressures ($p = 0.001$ and $p < 0.001$, respectively). Patients with hypertension had lower FMD values ($p = 0.012$). Hypertension was the main determinant of FMD among all parameters ($p = 0.037$). FMD was not correlated with echocardiographic findings, laboratory results and parameters of dialysis adequacy.

CONCLUSION: The major risk determinant for cardiovascular disease in peritoneal dialysis patients is the presence of hypertension.

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RED BLOOD CELL DISTRIBITION WIDTH AND RELATED FACTORS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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BACKGROUND: Diabetic nephropathy (DN) is a major microvascular complication of diabetes mellitus and the leading cause of end-stage renal disease. Recent data demonstrated that elevated red blood cell distribution width (RDW) was associated with the incidence of both micro and macrovascular complications in diabetic patients. However, no studies have investigated the relationship between RDW and diabetic nephropathy in a defined diabetes population. We aimed to investigate the RDW measurements in patients with type 2 diabetes mellitus (DM), in patients with DN, and in healthy volunteers.

METHODS: Group 1 consisted of healthy control participants. Group 2 consisted of patients with uncomplicated DM. Group 3 consisted of patients with DN and normal GFR values (>90 mL/min). Fasting blood glucose, HbA1c, proteinuria level, serum albumin, creatinine, uric acid, lipid parameters, and RDW values were measured.

RESULTS: A total of 563 patients composed of 3 different groups were recruited to the study. The mean age of group 1 patient ($n = 157$, 76 male, 81 female) was 42.41 ± 16.8, group 2 patients ($n = 210$, 106 male, 114 female) was 52.12 ± 10.8, and group 3 patients ($n = 196$, 99 male, 97 female) was 52.02 ± 11.1 years. The RDW values in group 1 participants were significantly lower than those in group 2 and group 3 ($p < 0.05$). The RDW values of group 3 patients were higher than in group 2 and group 1 patients ($p < 0.05$). There was statistically significant positive correlation between RDW value and proteinuria level in group 3 patients ($p < 0.05$).

CONCLUSION: The RDW values were higher in diabetic groups, particularly in patients with DN than in normal participants. Proteinuria was the most powerful determinant of RDW.

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IS RED BLOOD CELL DISTRIBUTION WIDTH A PREDICTOR OF RESPONSE TO TREATMENT IN ADULT PATIENTS WITH NEPHROTIC SYDNROME?

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BACKGROUND: Novel biomarkers for predicting the treatment response (TR) in patients with nephrotic syndrome (NS) are needed. Documentation of noninvasive biomarkers that exactly distinguish between treatment sensitive NS and treatment resistance NS is essential to preventing their exposure to high-dose or ineffective immunosuppressive drugs. We aimed to investigate the relationship between red cell distribution width (RDW) values and TR in patients with NS.

METHODS: We conducted a retrospective study of adult patients with NS due to primary glomerulonephritis. Patients were divided into three groups on the basis of their TR. Group 1 was composed of patients with complete remission. Group 2 was composed of patients with partial remission. Group 3 was composed of patients resistant to treatment.

RESULTS: A total of 173 patients were recruited to the study. The highest baseline mean RDW value was found in group 3 patients (17.8 ± 1.8) ($p < 0.05$), and the lowest mean RDW value was found in group 1 patients (13.4 ± 0.7) before treatment ($p < 0.05$). We found significant decrease in RDW value after successful treatment in group 1 and group 2 ($p < 0.05$). In group 3 patients, there was no change in RDW value after treatment ($p > 0.05$). Most of the patients with remission ($n = 49$, 89%) have baseline RDW values under 14% ($p < 0.001$, Kendal Tau = −0.86). The highest resistance to treatment was seen in patients who have RDW levels > 15 % at diagnosis (86.1 %) ($p < 0.001$, Kendal Tau = −0.87).

CONCLUSION: Our results suggest that pretreatment RDW value is a promising novel biomarker for treatment responsiveness in adult patients with NS due to primary glomerulonephritis.

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THE RELATIONSHIP BETWEEN SERUM CYSTATIN-C LEVELS AND MICROALBUMINURIA IN PATIENTS WITH METABOLIC SYNDROME

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BACKGROUND: Metabolic syndrome (MS) is a group of metabolic disorders in which insulin resistance plays a pivotal role. Microalbuminuria (MA) is a strong indicator of morbidity related to cardiovascular disorders, and is currently considered a novel diagnostic criterion for MS. Cystatin C is a useful marker in measuring glomerular filtration rate. Moreover, recently it has been suggested that cystatin C may be a potential biomarker for detecting MA. In this study, we attempted to investigate the relationship between serum cystatin C levels and MA in patients with MS.

METHODS: A total of 50 patients with MS and 25 control patients were included in this study. We defined MS by the NCEP criteria among nondiabetic outpatients. Patients with MS were further divided into two groups based on MA status. Overall 25 of the participants with MS did not have MA (group I), while the remaining 25 had MA (group II). Serum cystatin C levels were measured by ELISA.

RESULTS: Age, distributions of sex, BP and LDL cholesterol levels were similar among all groups. BMI, waist/hip ratio, fasting blood glucose, homeostatic model assessment of insulin resistance (HOMA-IR), total cholesterol, triglyceride, and C-reactive protein levels were significantly higher in group I and II patients compared to controls. In group II, the cystatin-C levels were higher than controls and group I (Table 1). Moreover, cystatin-C concentrations were positively correlated with microalbuminuria ($r = 0.50$, $p = 0.0001$).

CONCLUSION: In our study, we found that MS patients with MA had high levels of cystatin-C. In conclusion, we suggest that determination of cystatin C levels could be a useful marker as an early indicator of renal injury in patients with MS.

Table 1 | Comparison of the groups according to microalbuminuria and cystatin levels

Parameter	Group 1 mean ± SD	Group 2 mean ± SD	Control (mean ± SD)	p
Microalbuminuria (mg/day)	6.56 ± 5.66	146.68 ± 157.24	3.3 ± 2.2[a,b]	0.0001
Cystatin-C (ng/ml)	1067.61 ± 217.7	1501.28 ± 494.08	1032 ± 233[b]	0.0001

[a]$p > 0.05$ as compared with group 1, [b]$p < 0.05$ as compared with group 2.