

24-HOUR BLOOD PRESSURE HOMEOSTASIS AND RENAL FUNCTION IN SUBJECTS WITH AND WITHOUT METABOLIC SYNDROME

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OBJECTIVES

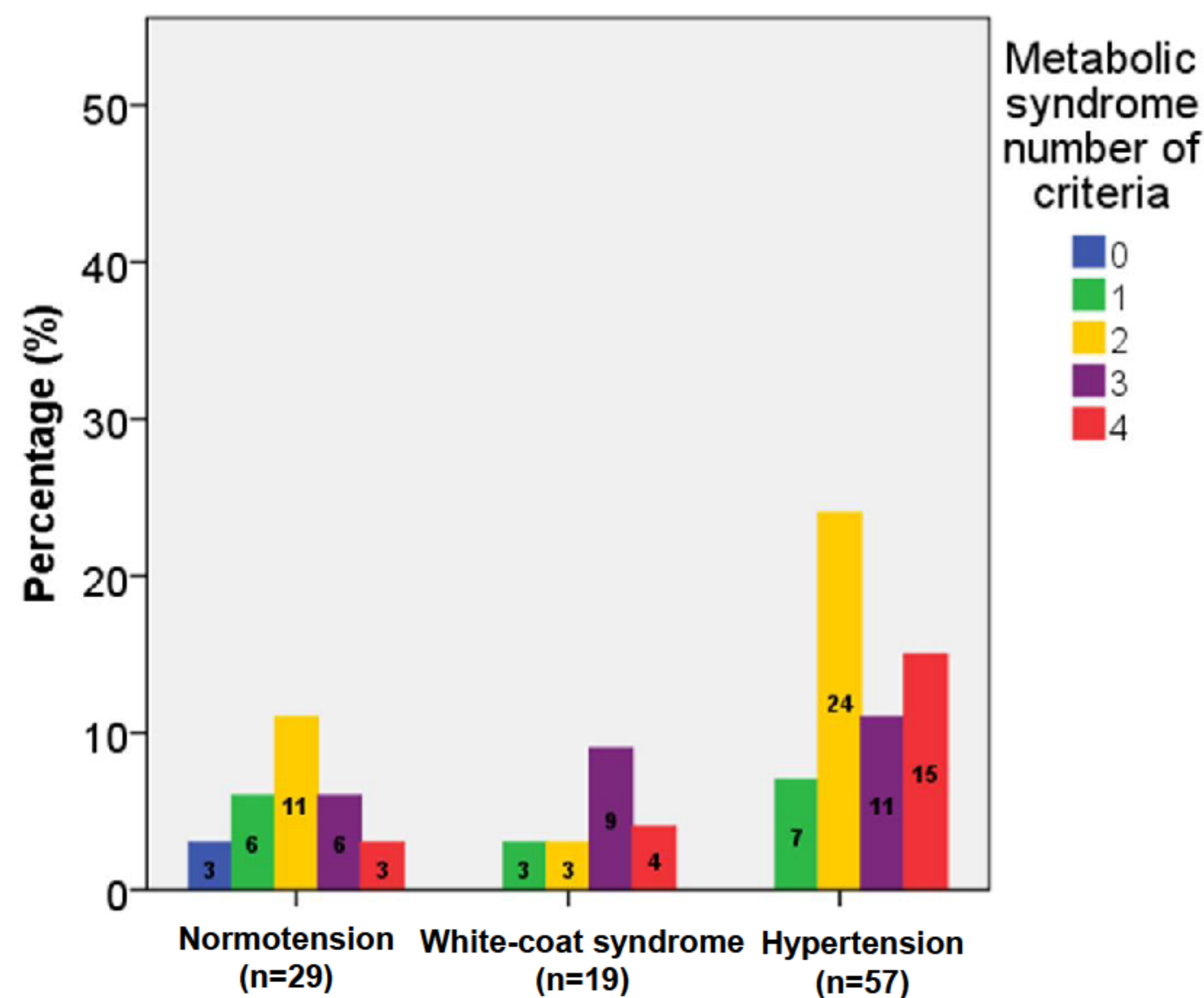
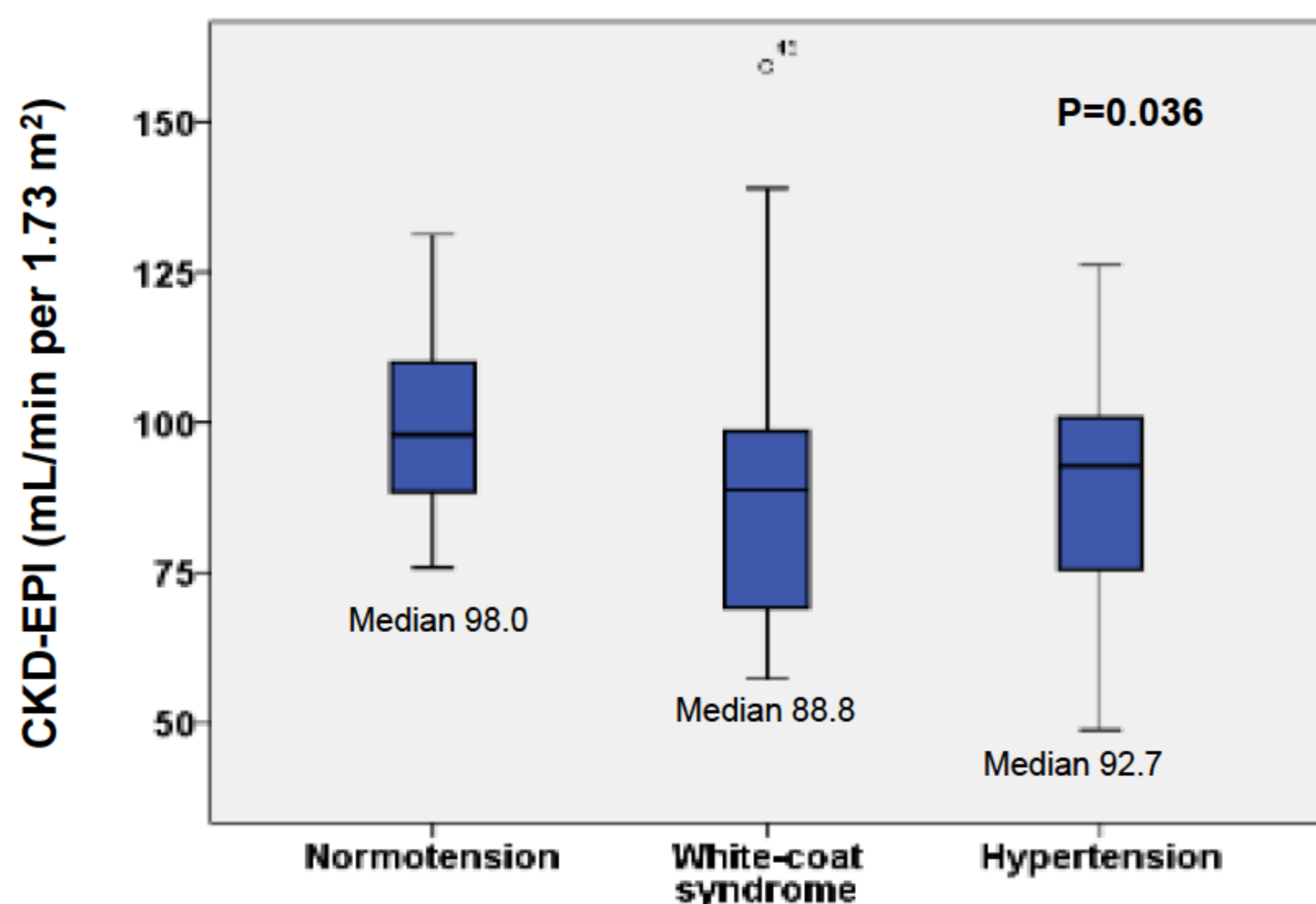
Metabolic Syndrome (MS), which is characterized by abdominal obesity, hypertriglyceridemia, low HDL-cholesterol levels, high blood pressure, and hyperglycemia, is related with progressive decrease of renal function. Although hypertension has a major role on this relationship, it is not clear how its behavior is related to decreased renal function.

Therefore, we aimed to evaluate which components of MS are related to decreased renal function and if there is a BP pattern linked to it.

SUBJECTS'S CHARACTERISTICS ACCORDING TO THE PRESENCE OR ABSENCE OF METABOLIC SYNDROME

| | Without MS (n = 27) | With MS (n = 78) | P |
|--|---------------------|------------------|------------------|
| Age (years) | 49.1 ± 13.6 | 54.7 ± 12.0 | 0.047 |
| Female - n (%) | 22 (81.5) | 55 (70.5) | 0.267 |
| Non-African - n (%) | 21 (80.8) | 68 (88.3) | 0.332 |
| Years of education | 10.0 (6.0 – 13.0) | 8.0 (5.0 – 11.2) | 0.281 |
| Sedentarism - n (%) | 10 (38.5) | 41 (57.7) | 0.092 |
| BMI (kg/m ²) | 27.7 ± 5.2 | 33.2 ± 6.4 | <0.001 |
| 2h-plasma glucose (mg/dL) | 125.5 ± 46.6 | 194.3 ± 88.1 | <0.001 |
| A1c (%) | 5.4 ± 0.5 | 6.5 ± 1.3 | - |
| eGFR (mL/min per 1.73 m ²) | 98.8 ± 16.5 | 90.0 ± 20.0 | 0.043 |
| Creatinine (mL/dL) | 0.8 ± 0.2 | 0.8 ± 0.2 | 0.118 |
| 24-h UAE (mg/24h) | 1.0 (0 – 6.7) | 5.9 (1 – 16.0) | 0.620 |
| LDL-cholesterol (mg/dL) | 118.8 ± 25.1 | 126.4 ± 38.6 | 0.252 |
| US-CRP (mg/L) | 1.6 (0.6 – 3.2) | 4 (1.5 – 10.5) | 0.003 |
| HOMA-IR | 1.9 (1.1 – 3.0) | 3.4 (2.0 – 4.8) | 0.006 |

RENAL FUNCTION AND NUMBER OF MS CRITERIA ACCORDING TO BP BEHAVIOR

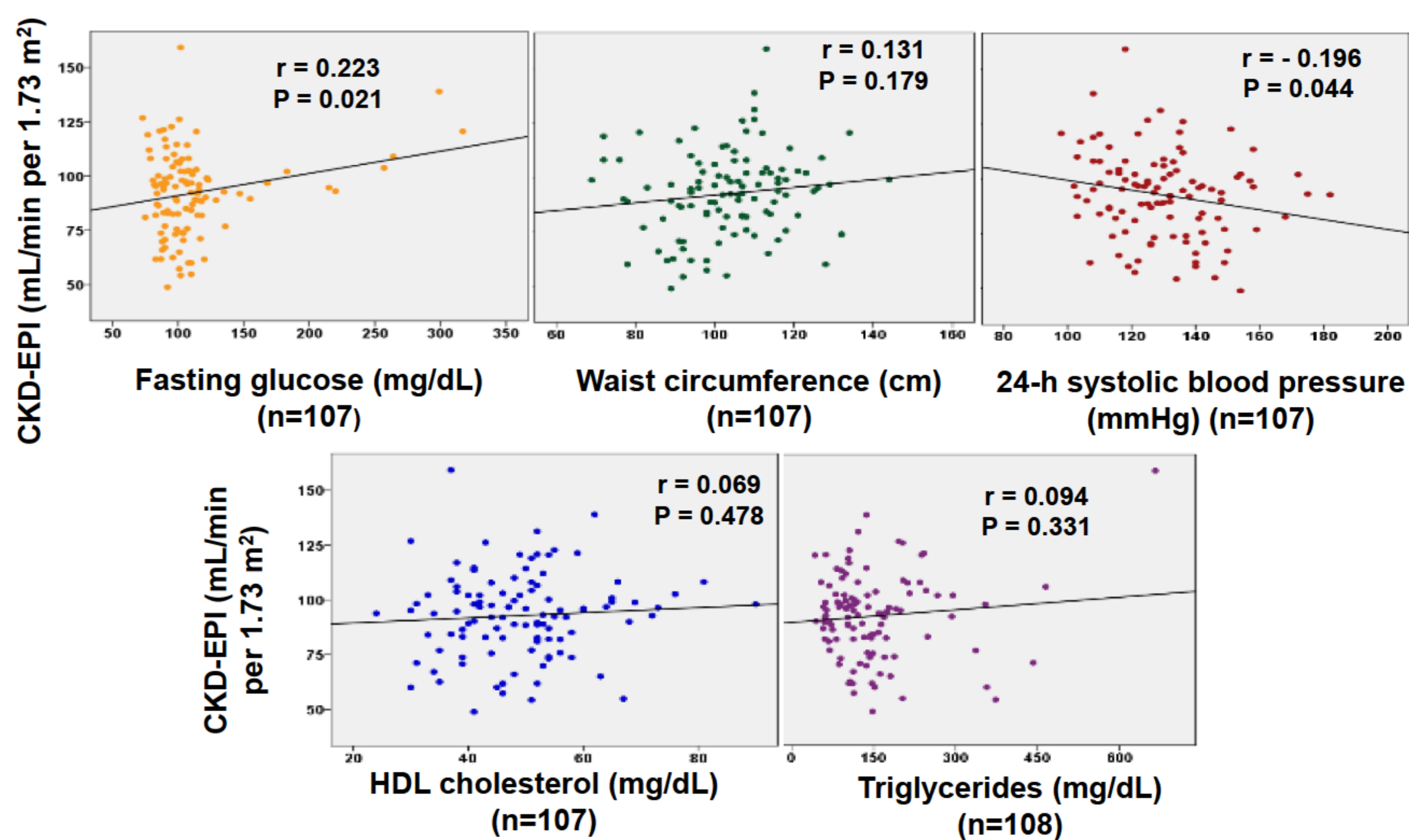


METHODS

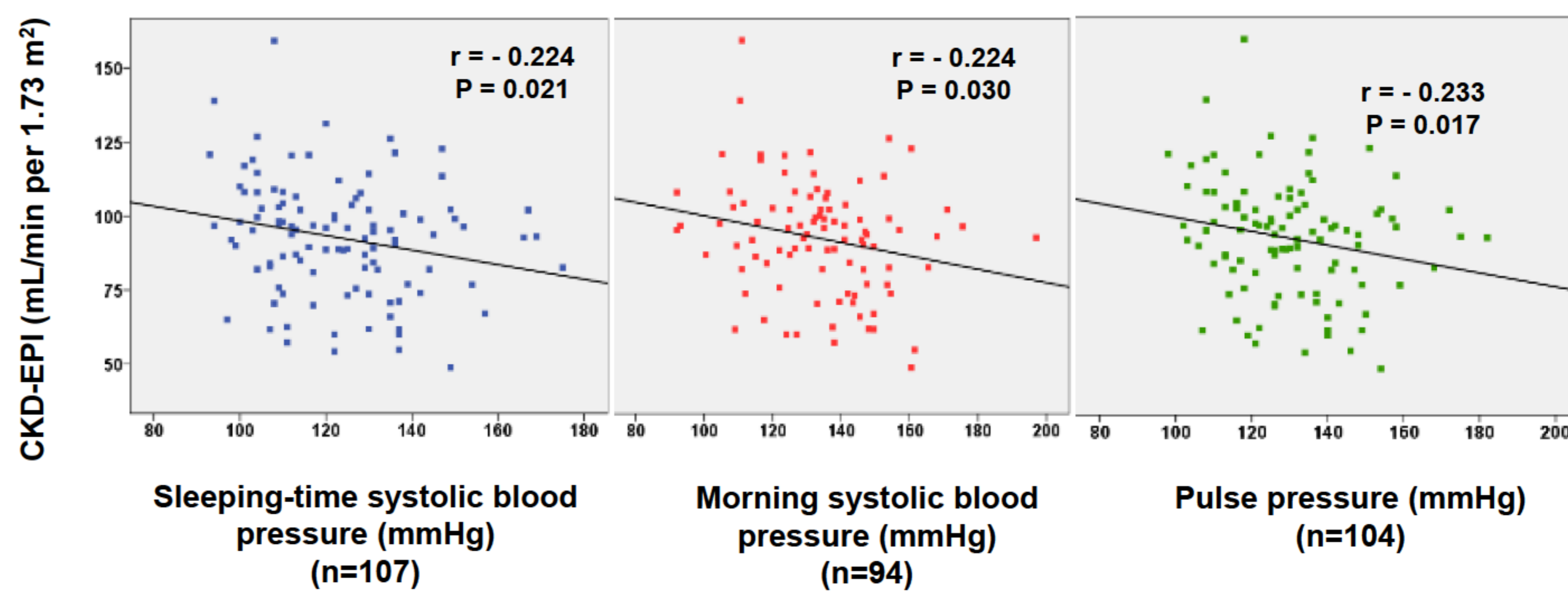
- Cross-sectional design
- 105 Brazilian subjects attending an endocrine outpatient clinic
- MS was defined by the International Diabetes Federation criteria.
- Patients were classified according to their BP pattern: normotension (NT; n=29), white-coat hypertension (WCH; n=19) and ambulatory hypertension (AHT; n=57).
- Fasting and 2h-plasma glucose levels, lipid profile, creatinine and 24-h urinary albumin excretion (UAE) were measured.
- Glomerular filtration rate (eGFR) was estimated by the CKD-EPI equation.
- Data are presented as mean ± standard deviation (SD), median (P25-P75), unless otherwise specified. A two-sided P value <0.05 was considered significant.

RESULTS

WHICH METABOLIC SYNDROME COMPONENTS CORRELATE WITH RENAL FUNCTION?



HOW DOES BLOOD PRESSURE PARAMETERS IMPACT ON RENAL FUNCTION?



CONCLUSIONS

Decreased renal function was determined mainly by age and presence of hypertension criteria. Pulse pressure, sleep-time BP and morning systolic BP correlated negatively to eGFR, suggesting that impaired mechanisms of BP regulation contribute to renal damage.

Patients with different BP patterns were different regarding eGFR, albuminuria and number of MS criteria, suggesting that white-coat hypertension is not a condition free of damage.

References

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SUPPORT: CNPq, CAPES, FAPERGS, FIPE-HCPA PROJECT N 09-194, approved by the HCPA Ethics Comittee