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## OBJECTIVES

Studies indicate the presence in kidney transplanted patients excessive weight gain. Disturbances in secretion of adipokines caused by obesity have an influence on development of metabolic complications and increase the risk of cardiovascular disease (CVD).

The aim of this study was an investigation of adipokines profile in overweight or obese kidney transplanted patients with metabolic syndrome.

## METHODS

The studied groups consisted of 176 kidney transplanted (KT) patients (42M, 47F). Mean age of patients was 64.8±13.6 yr., mean BMI was 25.4±4.2. In 115 patients was recognized metabolic syndrome (MS) according to IDF (*International Diabetes Federation*) criteria (see Table 1).

All individuals underwent following examination:

- anthropometrical (height, weight, BMI, waist circumference)
  - clinical (medical history, blood-pressure)
  - biochemical (serum concentrations of adiponectin, leptin, IL-6, CRP measured by ELISA method) and total cholesterol, HDL cholesterol, triglycerides, glucose, creatinine measured by routine laboratory methods)
- eGFR was calculated acc. MDRD formula.

**Table 1: The new International Diabetes Federation (IDF) definition**

According to the new IDF definition, for a person to be defined as having the metabolic syndrome they must have:

Central obesity (defined as waist circumference\* with ethnicity specific values)

plus any two of the following four factors:

Raised triglycerides	≥ 150 mg/dL (1.7 mmol/L) or specific treatment for this lipid abnormality
Reduced HDL cholesterol	< 40 mg/dL (1.03 mmol/L) in males < 50 mg/dL (1.29 mmol/L) in females or specific treatment for this lipid abnormality
Raised blood pressure	systolic BP ≥ 130 or diastolic BP ≥ 85 mm Hg or treatment of previously diagnosed hypertension
Raised fasting plasma glucose	(FPG) ≥ 100 mg/dL (5.6 mmol/L), or previously diagnosed type 2 diabetes If above 5.6 mmol/L or 100 mg/dL, OGTT is strongly recommended but is not necessary to define presence of the syndrome.

\* If BMI is >30kg/m<sup>2</sup>, central obesity can be assumed and waist circumference does not need to be measured.

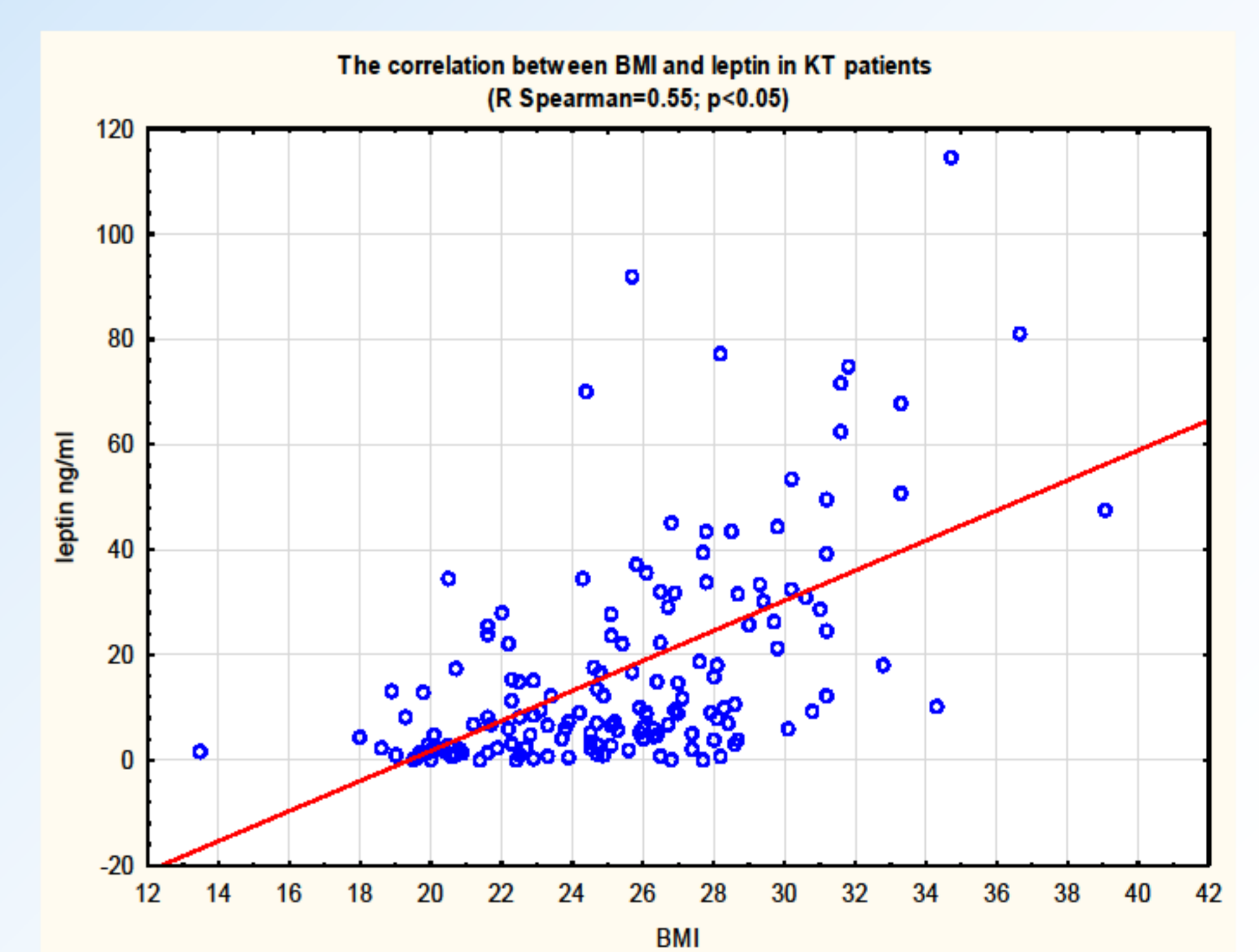
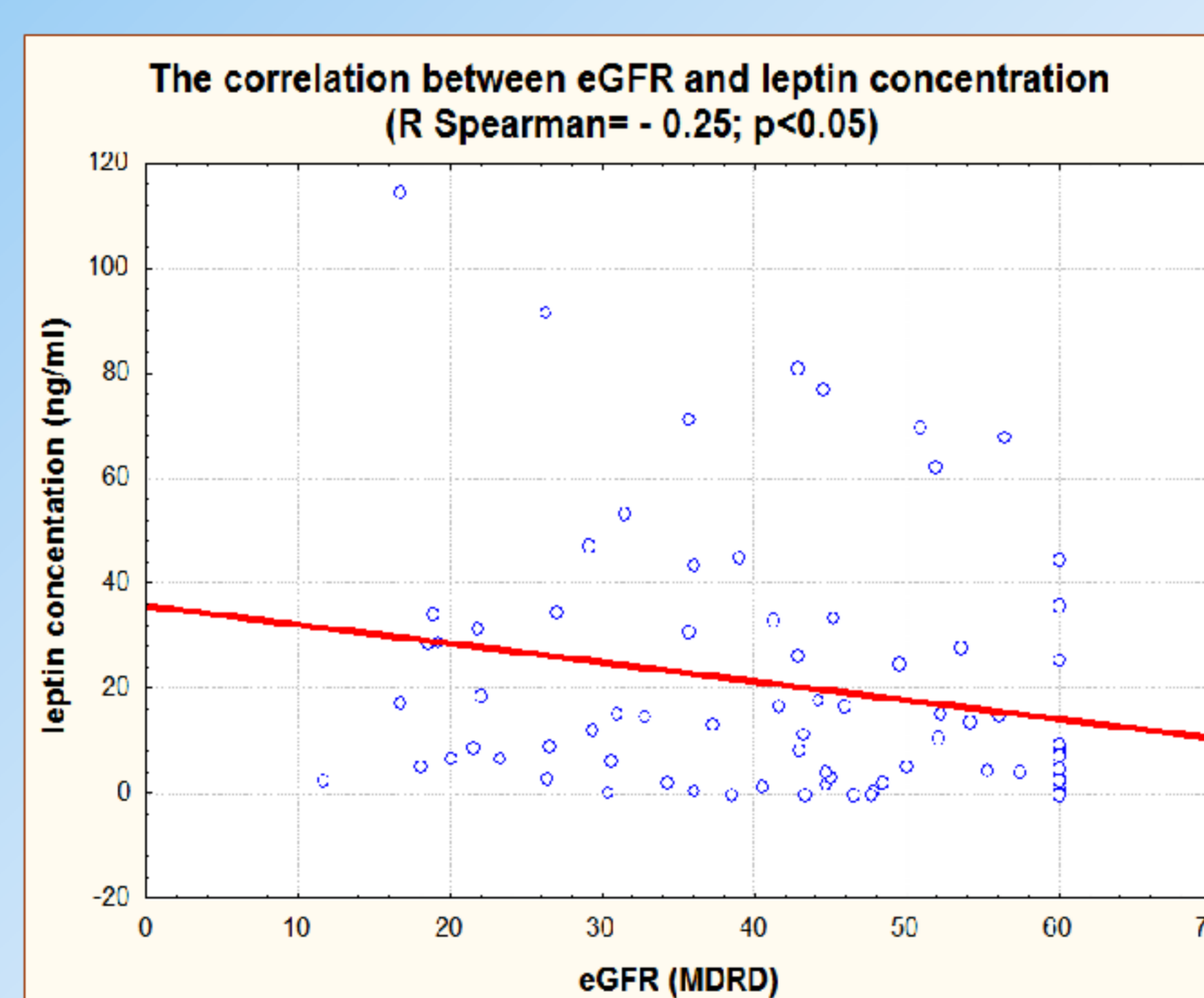
## RESULTS

A significantly higher concentration of leptin, and higher concentration of CRP was observed in KT patients with metabolic syndrome (MS) in comparison to patients without metabolic syndrome (non MS) (21.2 vs 7.3 ug/l respectively).

The correlation between leptin and eGFR was noticed (R Spearman = -0.2; p<0.05) and between leptin and BMI. Also, the multiple regression analysis for eGFR in all kidney transplant population indicated relationship between leptin level and graft function (p<0.01). The adiponectin level not differ significantly in MS and non MS group.

**Table 1. The characteristic of the studied groups**

Parameters	MS N=115	non MS N=61	p
Age (years)	54.8 ± 11.5	45.3 ± 14.5	0.05
Time after TX (months)	58.4 ± 61.6	51.8 ± 59.1	0.54
BMI (kg/m <sup>2</sup> )	27.4 ± 3.5	21.4 ± 2.5	0.00
eGFR (ml/min)	39.8 ± 15.4	42.2 ± 14.0	0.31
Leptin (ug/l)	21.2 ± 12.2	7.3 ± 11.8	0.00
Adiponectin (ng/ml)	8.5 ± 5.2	9.4 ± 4.7	0.31
IL-6 (pg/ml)	9.1 ± 17.2	5.6 ± 6.2	0.23
CRP (mg/dl)	8.2 ± 22.5	3.7 ± 6.8	0.15



## CONCLUSIONS

The high level of leptin accompanying obesity may be a risk factors for CVD in studied KT population.

These findings point to the importance and necessity of thorough nutritional evaluation and appropriate nutritional interventions in kidney transplant patients.

