RELATIONSHIP BETWEEN ABDOMINAL OBESITY AND PLATELET INDICES IN PATIENTS WITH METABOLIC SYNDROME

Anna Furman, Pawel Rostoff, Radoslaw Rychlak, Karolina Golińska-Grzybala, Mateusz Golonka, Jadwiga Nessler
Department of Coronary Disease, Institute of Cardiology, Jagiellonian University Medical College, Krakow, Poland

INTRODUCTION
There is evidence that patients with the metabolic syndrome (MS) have altered platelet (PLT) indices including higher mean platelet volume (MPV). According to the 2009 IDF criteria of MS diagnosis, elevated waist circumference (≥94 cm in males, ≥80 cm in females), as a determinant of abdominal obesity, is not an obligatory component of MS. Little is known about the relation of abdominal obesity to platelet indices in patients with metabolic syndrome.

PURPOSE

to evaluate the relationship between abdominal obesity and platelet indices, such as mean platelet volume and platelet count in patients with metabolic syndrome.

METHODS
253 consecutive patients were enrolled based on MS diagnosis. According to the 2009 IDF definition, MS was diagnosed when three or more of the following parameters were present:
1) Elevated waist circumference ≥ 94 cm in males and ≥ 80 cm in females (IDF criteria for European)
2) Elevated triglycerides ≥150 mg/dL (1.7 mmol/L) or drug treatment of this lipid abnormality
3) Reduced HDL cholesterol <40 mg/dL (1.0 mmol/L) in males and <50 mg/dL (1.3 mmol/L) in females or drug treatment of this lipid abnormality
4) Elevated blood pressure: systolic ≥130 mmHg and/or diastolic ≥85 mmHg or antihypertensive drug treatment in patients with history of hypertension
5) Elevated fasting glucose ≥100 mg/dL or drug treatment of elevated glucose.

The patients were divided into two groups depending on waist circumference: group A – 218 pts with abdominal obesity (132 M, mean age 65.3±10.9 yrs), and group B – 35 pts without abdominal obesity (28 M, mean age 63.3±11.2 yrs).

RESULTS
- No significant differences were found between the groups with respect to PLT count (226.3±78.1 vs. 224.5±57.1 x109/L, p=0.745) and MPV (10.70±1.01 vs. 10.64±1.03 fL, p=0.448).
- In the group A, a significant association between waist circumference and MPV (r=0.15, p=0.045) was found.
- In patients with abdominal obesity MPV was significantly correlated with PLT count (r=0.36, p<0.001), total cholesterol serum level (r=0.22, p=0.004), triglycerides (r=0.18, p=0.017), LDL-cholesterol (r=0.20, p=0.009), and the occurrence of left ventricle diastolic dysfunction (r=0.21, p=0.005).
- In group B, MPV was correlated significantly only with PLT count (r=0.45, p=0.009).

CONCLUSIONS
1. There are no significant differences in PLT count and MPV between patients with metabolic syndrome and abdominal obesity and those without abdominal obesity.
2. In individuals with abdominal obesity there is a significant positive correlation between waist circumference and MPV.