Lipid Accumulation Product (LAP), Waist to Hip Ratio (WHR) and Waist Circumference to Height Ratio (WGtR) associated with hormonal profile in women with Polycystic ovary syndrome

A Atanasova Boshku (MK) [1], D Panova Ivanova (MK) [2]

Context: As a part of endocrinological disturbances, PCOS is frequently associated with high prevalence of central obesity and metabolic syndrome what increased risk of cardiovascular diseases (CVD).

Objective: There is no simple and accurate method for the assessment of CVD risk in PCOS in young women. Lipid accumulation product (LAP) is based on the assessment of waist circumference and serum triglycerides and reflects lipid accumulation. Also, it was shown that waist circumference to height ratio (WHtR) is a good risk factor for CVD in women. The aim of our study was to assess the utility of LAP and WHtR as new markers of increased risk of CVD in PCOS women.

Methods: Study group consists of two groups: 89 women with PCOS diagnosed according to the Rotterdam criteria aged 24.7±4.9 and 60 healthy, BMI- and age-matched women (control group). We assessed anthropometric indices of obesity – body mass index (BMI, kg/m2), waist to hip ratio (WHR, cm) and WHtR (waist to height ratio, cm). Lipid profile was assessed using standard laboratory assays. LAP was calculate using formula: waist circumference (cm) – 58 x triglycerides (nmol/l).

Results: Mean WHR value in PCOS group was 0.86± 0.15 and was significantly higher than in control group (0.81 ± 0.06), p<0,05. Mean WHtR value in PCOS group was 0.45± 0.1 and was significantly higher than in control group 0.40±0.09, p<0.05. LAP in PCOS group was significantly higher than in control group and was 49.8± 37.9 and 23.96 ± 17.11 respectively, p<0,05.

Conclusion: Our results indicated that WHtR and LAP are accurate indicators for the prediction of developing CVD in PCOS women.

[1] University Clinic of Gynecology and Obstetric, [2] University Clinic of Gynecology and Obstetric