26th World Nutrition Congress
&
15th Euro Obesity and Endocrinology Congress

June 17-18, 2019 London, UK

Association between omentin and chemerin levels and their changes within one year in non-morbid overweight and obese adults

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Background: About half of EU adult population is overweight, including 16% being obese (21% in Latvia). Early recognition and monitoring of individuals that are at high risk of developing diabetes and cardiovascular diseases is essential. Positive correlation of serum chemerin and negative correlation of omentin with weight, lipids and insulin resistance indicators has been described; however, information on inter-relation between changes in these parameters is scarce, especially in non-morbid overweight and obese adults.

Objective: To determine the association between chemerin and omentin levels at baseline and their changes in clinically healthy overweight and obese individuals within a year

Materials & Methods: We used data from our randomised controlled study with 123 clinically healthy individuals with a BMI above 25 m^2/kg in the age group of 30 to 45: (47% men, age 36,8±4,2 years, BMI 32,0±4,3 kg/m^2; total cholesterol 5,4±0,9 mmol/L; HDL-cholesterol 1,4±0,3 mmol/L; fasting glucosae 5,2±0,5 mmol/L; HOMA-IR 3,1±1,7; 46% metabolically unhealthy according to metabolic syndrome definition; 32% smokers; 38% diagnosed with liver steatosis on CT scan). All participants received a consultation for lifestyle changes to support weight loss. All group showed slight weight and waist circumference decrease after 1 year. Biochemical parameters (lipids, fasting glucose and insulin) and cytokines (omentin, chemerin) were assessed at baseline and after 1 year using Spearman's correlation test.

Results: We found a weak positive correlation between chemerin and omentin (rs=0.295; p=0.001) at baseline, contradicting our expectations. Multiple linear regression adjusted by age and gender retained significant relationship between omentin and chemerin (B=0.088; 95% CI 0.033, 0.143; p=0.002). After one year there was a weak positive correlation of omentin changes with chemerin changes (rs=0.186; p=0.042). However, multiple linear regression adjusted by age and gender showed no association between omentin and chemerin changes.

Conclusion: A positive rather than negative relationship between chemerin and omentin in non-morbid overweight and obese adults imply that other factors besides anthropometric and metabolic indicators might be affecting omentin and chemerin levels in this group.

Biography

Vija Silina is a lecturer of the Department Family Medicine of Riga Stradins university since 2011 teaching both students and residents. Her current research includes preventing obesity related non-communicable diseases. She is working in the private practice as a family physician.

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