## conferenceseries.com

## 17<sup>th</sup> World Congress on Nutrition and Food Chemistry

## 14th Euro **Obesity and Endocrinology Congress**

September 13-15, 2018 | London, UK

## Association of adipocytokines with cardio metabolic risk factors in normal weight obesity: A cross-sectional study

Ehsaneh Taheri, Afshin Ostovar, Saeed Hosseini, Mohammad Reza Mohajeri, Hamid Reza Aghaei Meybodi and Bagher Larijani Tehran University of Medical Sciences, Iran

**Background:** Subjects with excessive body fat and normal body mass index (BMI) are characterized as normal weight obese subjects (NWO), who are at increased risk of developing cardio metabolic dysregulation. The purpose of this study was to determine the prevalence of cardio metabolic risk factors in association with adipocytokines including leptin, vaspin and irisin in patients with NWO compared to the controls.

**Material & Methods:** We recruited 64 women with mean age of  $28.95\pm4.63$  in a cross-sectional study. A case group including 34 normal weight obese women (BMI <25 kg/m2, BF >30%) were compared with a control group including 30 women with BMI <25 kg/m2 and BF <30%. Body fat mass was measured by bio-impedance method and serum levels of insulin, irisin, leptin and vaspin were measured using ELISA method. Systolic and diastolic blood pressure, waist and hip circumference, lipid and glycemic profiles were measured. Serum levels adipocytokines were compared using non-parametric Mann-Whitney test between two groups and the correlation between the adipocytokines and measured parameters were investigated using the Spearman's correlation coefficient.

**Results:** Median leptin (39.78 vs. 21.87 ng/ml, P<0.001) and irisin (36.67 vs. 25.96 ng/ml, P<0.01) were significantly higher among NWO compared to controls. There was no difference in vaspin level between two groups. The mean (SD) values of waist circumference (WC) (74.77 $\pm$ 4.74 vs. 70.84 $\pm$ 3.03 cm, P<0.001) and hip circumference (HC) (98.90 $\pm$ 4.29 vs. 93.44 $\pm$ 2.99 cm, P<0.001) were higher in NOW than control, but not waist to hip ratio (WHR). Cases had higher concentration of fasting insulin (9.02 $\pm$ 4.75 µIU/ml) and HOMA-IR (36.92) compared to controls (6.31 $\pm$ 2.49 µIU/ml, P=0.01 and 25.42, P=0.01), respectively. Systolic and diastolic blood pressure, fasting blood level of triglycerides, total cholesterol, HDL-c, LDL-c and fating blood glucose were non-statistically significantly higher in NWO than controls. Serum level of leptin, vaspin and irisin showed statistically significant positive relationship with fasting insulin level (r=0.50, P<0.001, r=0.28, P=0.02 and r=0.30, P=0.01, respectively) and with HOMA-IR (r=0.51, P<0.001, r=0.27, P=0.03 and r=0.29, P=0.01, respectively). In addition, serum level of leptin had a positive relationship with WC (r=0.45, P=0.004), HC (r=0.51, P=0.01) and body fat mass (r=0.40, P=0.01) in NWO. We observed that irisin correlated directly with DBP (r=0.33, P=0.04) and indirectly with HC (r=-0.38, P=0.01) and fat mass (r=-0.40, P=0.03).

**Conclusion:** Despite having normal BMI, patients with normal weight obesity have impaired glycemic profile than controls with normal fat mass and BMI. According to the relationship between adipocytokines and glycemic profiles, it can be concluded that the levels of adipocytokines might be important mediators of impaired glycemic profile in NWO.

ehsaneh\_taheri@yahoo.com

Notes: