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Presentation Abstract

Session: F-29-Obesity and Body Composition

Friday, May 30, 2014, 1:00 PM - 6:00 PM

Presentation: 2947 - **A New Approach to Express Regional Adiposity and Its Association with Blood Lipids, Inflammation and Insulin Resistance Markers**

Location: WB1, Poster Board: 233

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Category: 1104. Clinical Exercise Physiology - obesity/diabetes

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Abstract: Regional adiposity is classically related with inflammation, insulin resistance (IR) and an altered blood lipid profile. Traditionally, central adiposity expressed as a ratio (%FM) = fat mass/total mass of the region is the variable most used in research. However, this ratio does not account for total bodily fat mass (TFM). So, a great accumulation in a region, where lean mass is more important than fat, could be more associated with risk factors than other with less absolute fat (kg) but higher percentage (in instance abdomen). **PURPOSE:** To analyse the associations between the ratio (RW) = regional fat mass (kg) / TFM (kg) and blood lipid profile, IR and inflammation.

METHODS: Sixty-two pre-menopausal and healthy women were recruited for this study (age, 39.6 ±7.2 years; BMI, 29.2 ±4.2 kg.m⁻²; total %TFM, 42.0 ±5.9%). Weight and height were measured to the nearest 0.1 kg and 0.1 cm respectively, and body composition was estimated with dual energy x-ray absorptiometry. RWF were calculated for trunk (RWT), lower limbs (RWLL) and upper limbs (RWUL). Insulin, glycaemia and insulin sensitivity (HOMA) were the IR markers. C-reactive protein (CRP) and Tumour Necrosis Factor (TNF-α) were the inflammation variables. Total cholesterol (TC), low-density lipoprotein (LDL), high-density lipoprotein (HDL) and triglycerides (TG) were also measured. Partial correlations adjusted to TFM between RW and blood markers were carried out.

RESULTS: Significant correlations were found between RWUL and HOMA (r=0.276, P<0.05), TG (r=0.292, P<0.05) and insulin (r=0.271, P<0.05). RWT was also correlated with blood lipids: TG (r=0.278, P<0.05) and LDL (r=-0.318, P<0.05). Finally, RWLL was the ratio with more number of associations: HOMA (r=-0.274, P<0.05), TG (r=-0.342, P<0.01), LDL (r=0.317, P<0.05) and insulin (r=-0.253, P<0.05). Abdominal and trunk %FM were only

correlated with HOMA ($r=0.380$, $P<0.01$) and LDL ($r=0.264$, $P<0.05$) respectively.
CONCLUSION: In our sample, regional fat mass contribution (RW) for whole body FM showed more associations with blood markers than classical ratios (regional %FM). These findings highlighted RW ratios were well correlated with inflammatory and IR risk factors, which in turn could be useful to express positive or negative results in future studies. This issue requires further investigation.

Disclosures: **E.A. Carnero:** None.