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LIPID ACCUMULATION PRODUCT INDEX (LAP), BODY ADIPOSITY INDEX (BAI), NECK CIRCUMFERENCE AND TYPE-2 DIABETES IN SUBJECTS WITH HYPERTENSIONAline Marcadenti^{1,2}, Flavio Danni Fuchs^{1,2}, Leila Beltrami Moreira^{1,2}, Sandra Costa Fuchs^{1,2}¹Postgraduate Studies Program in Cardiology, School of Medicine, UFRGS, Porto Alegre, RS, Brazil; ²Division of Cardiology, HCPA, and IATS, Porto Alegre, RS, Brazil.

Background: No-traditional anthropometric indexes have been proposed to detect cardiovascular risk factors as type-2 diabetes among general population, since traditional indicators as BMI and waist circumference seems not discriminate visceral adipose tissue (VAT), a fat depot closely associated with cardiovascular disease.

Objectives: To evaluate the association between no-traditional anthropometric indexes - Lipid Accumulation Product Index (LAP), Body Adiposity Index (BAI) and neck circumference - with type-2 diabetes in patients with hypertension.

Methods: 430 patients (145 men and 285 women) with hypertension (systolic and/or diastolic blood pressure $\geq 140/90$ mmHg or use of lowering BP agents) were investigated. Type-2 diabetes was diagnosed according to the American Diabetic Association criteria. Weight (kg), height (m), waist, hip and neck circumferences (cm) were measured and body mass index (BMI, kg/m²) was calculated. Serum triglycerides were measured using calorimetric enzymatic method and LAP (cm.mmol.l) was calculated separately for men and women (waist circumference plus serum triglycerides). BAI (%) was evaluated in percentiles and calculated according to formula: $\text{hip (cm)} / [\text{height (m)}^{1.5}] - 18$. Data were expressed as mean \pm standard deviation (SD) or frequencies (%). The associations between anthropometric indexes and type-2 diabetes were analyzed using modified Poisson's regression and expressed as risk ratio and 95%CI, after the control for confounding factors.

Results: Patients were aged 58.3 ± 11.7 years, had SBP 154.2 ± 24.9 mmHg, DBP 89.0 ± 14.7 mmHg, BMI 30.1 ± 6.0 kg/m² and overall prevalence of diabetes mellitus was 32.5%. Analyses by gender showed that among men BAI at the 75th Percentile (31.57 %) increased about 60% the risk for type-2 diabetes [RR 1.60 (95%CI 1.04-2.49); P= 0.03], independently of age, physical activity, and smoking. Among women, those in the upper quartile of LAP and neck circumference had increased risk of type-2 diabetes, in comparison to those in the lowest quartile [RR 2.93 (95%CI 1.62-5.28) P< 0.001; RR 3.30 (95%CI 1.78-6.14) P= 0.001, respectively], independently of age, physical activity, smoking, and BMI.

Conclusions: LAP and neck circumference, highly correlated with visceral adipose tissue, were associated to type-2 diabetes among hypertensive women with overweight; BAI (an overall adiposity index) was associated with type-2 diabetes among men.