HYPERTENSION, LIPIDS AND PREVENTION

CENTRAL OBESITY SEEMS TO HAVE THE HIGHEST PREDICTIVE VALUE AMONG ALL OTHERS ANTHROPOMETRIC INDICES FOR THE FIVE-YEAR INCIDENCE OF HYPERTENSION IN APPARENTLY HEALTHY INDIVIDUALS: THE ATTICA STUDY

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Background: To evaluate the role of anthropometric indices in the 5-year incidence of hypertension, in a sample of cardiovascular disease-free adults.

Methods: 1514 men and 1528 women (>18 years) without any clinical evidence of cardiovascular disease, living in Attica area, Greece, were enrolled in the ATTICA study from May 2001 to December 2002. In 2006, the 5-year follow-up was performed. Hypertension was defined as systolic / diastolic blood pressure measurements > 140/90 mmHg or use of anti-hypertensive treatment. Weight, height, waist and hip circumferences, as well as body mass index and waist-to-height and waist-to-hip ratio were tested in relation to the development of hypertension.

Results: During 2001-2006, 86 men and 102 women were diagnosed as having hypertension. Thus, annual incidence rate is 2.86 per 100 men and 2.68 per 100 women. From the anthropometric indices, waist, and hip circumferences, BMI, weight and waist-to-height ratio were associated with the development of hypertension, while hip and waist-to-hip ratio were not associated. Particularly, for every 1 cm difference in baseline measurements of waist a 2% higher risk of hypertension was observed; while abnormal waist at baseline examination was associated with 1.92-times (95%CI 1.35 to 2.77) higher risk of hypertension, in both genders. Moreover, presence of obesity at baseline examination was associated with a 2.4-fold (95% CI 1.62-3.79) of the risk of hypertension. All the aforementioned relationships were independent from age, sex, and various other confounders, while the model that contained waist had the best diagnostic ability, followed by BMI, hip circumference and weight.

Conclusions: Among various anthropometric measurements that showed a significant association with hypertension incidence, waist circumference was the best predictor. The latter finding may lead to new pathophysiological mechanisms for the development of hypertension.