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Relationship Between Anthropometric Parameters and Hypertension in an Algerian Adult Population According to BMI, Waist Circumference, and Waist circumference-to-Height Ratio

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Abstract **Background**—Obesity and Overweight are frequently associated with high blood pressure (HBP). The aim of our study was to analyze the associations between anthropometric measures and HBP in Algerian patients. **Methods**—A cross-sectional study was conducted among 785 adults with normal BMI (248), overweight (253), and obese (284), who were assessed with measurement of systolic and diastolic blood pressure, weight, height, and waist circumference (WC). Body mass index (BMI) and waist circumference-to-height ratio (WHtR) were calculated. We released ROC curves for each anthropometric parameter to assess its discriminant power predictive of HBP in patients. **Results**—Obese had a higher mean weight, WC, WHtR, SBP, DBP, FG, TC, and TG than overweight and normoponderal. The prevalence of hypertension and diabetes was higher in obese than overweight and normoponderal. Results showed that obesity increased the risk of hypertension by a factor of 1.54 (95% CI [1.15, 2.06], $p = 0.004$). Pearson's correlation data analysis showed that there was no relationship between systolic blood pressure and anthropometric parameters (BMI, WC, and WHtR). Only DBP was negatively associated with WHtR in the overweight group. All these parameters had areas under the curve between 0.409 and 0.618. Their contributions were thus low. The Cutoff value of anthropometric WHtR parameters associated with the risk of hypertension was higher among women than men regardless of the BMI group considered. **Conclusion**—Contrary to the data of the literature, the discriminating power of anthropometry in

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