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TOTAL AND ABDOMINAL OBESITY AMONG RURAL CHINESE WOMEN AND THE ASSOCIATION WITH HYPERTENSIONZhang Xingang *The First Affiliated Hospital of China Medical University, Shenyang, China*

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Background Obesity increases the risk of hypertension and other chronic diseases, with an increasing prevalence worldwide. However, little is known about obesity in rural Chinese. This study was designed to investigate the epidemiologic features and the association of hypertension in overweight and obese population in rural Chinese women.

Methods A cross-sectional survey was conducted during 2004–2006, which undertook multistage cluster sampling method to select a representative sample in Liaoning province, China. A total of 23,178 rural women with age ≥ 35 years were examined (the percentage of people over 64 years was 14.5%). Data on demographic variables (age, sex and race), smoking status, use of alcohol, physical activity and education level were obtained by interview. Overweight and obesity were defined according to the World Health Organisation classification. Hypertension was defined according to the criteria established by the Seventh Report of the Joint National Committee (JNC-7), and untreated hypertensive subjects were further classified into three subtypes: isolated systolic hypertension (ISH), isolated diastolic hypertension (IDH), and systolic-diastolic hypertension (SDH). The authors built multivariable models and performed Poisson logistic regression analysis to determine associations among body mass index, waist circumference and variables.

Results Overall, the prevalence of overweight and obesity was 24.4% and 2.7% defined by body mass index (BMI), whereas the prevalence was 48.6% and 4.9% defined by waist circumference. Among those with total obesity, 27.7% had ISH, 18.6% had IDH and 53.7% had SDH. The corresponding figures were 32.2%, 17.8% and 50.0% in those with abdominal obesity. Poisson regression revealed that high levels of physical activity (moderate: PR 0.976, 95% CI 0.965 to 0.988; high: PR 0.985, 95% CI 0.971 to 0.999) and current smoking status (PR 0.950, 95% CI 0.938 to 0.962) were protective factors and ethnicity was risk factor (Mongolian nationality: PR 1.042, 95% CI 1.030 to 1.054) for overweight or obese participants defined by either BMI. Select another definition by waist circumference, physical activity (moderate: PR 0.955, 95% CI 0.944 to 0.965; high: PR 0.973, 95% CI 0.960 to 0.985), current smoking status (PR 0.966, 95% CI 0.954 to 0.978) also as protective factors and ethnicity as risk factor (Mongolian nationality: PR 1.043, 95% CI 1.033 to 1.054) had significant association with obesity. High levels of education were shown as risk factor for overweight or obese participants defined by BMI alone (PR 1.033, 95% CI 1.010 to 1.058). The diet score was found as a risk factor for overweight or obese people only defined by waist circumference (PR 1.004, 95% CI 1.000 to 1.008). After adjustment, BMI and waist circumference were associated with greatest likelihood of SDH (for BMI ≥ 30 , PR=2.455, 95% CI 1.786 to 3.374; for waist circumference ≥ 88 , PR=1.517, 95% CI 1.133 to 2.031). BMI was more related with IDH than ISH; whereas, waist circumference was more related with ISH than IDH.

Conclusions Although the prevalence of overweight and obesity defined by BMI was low, it was relatively high defined by waist circumference in rural Chinese women. There were

several different risk factors for overweight or obesity between the two definitions, such as education levels, diet score. The associations between overweight or obesity and subtypes of hypertension were also different by the two definitions.