

Comparative Analysis of the Predictive Value of Multiple Obesity Indicators for Hypertension in Older Adults of Different Sexes

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Abstract

Objective: The aim of this study is to evaluate the predictive value of various obesity indices for hypertension among elderly individuals aged 65 and above of different genders, providing a scientific basis for timely identification of hypertension patients and high-risk groups, and offering strategic references for early intervention of hypertension in the elderly population. *Methods:* A total of 6873 elderly individuals who underwent health examinations at a community health service center in Wuhan from March 2022 to December 2023 were included as study subjects. Obesity-related indices such as the Chinese Visceral Adipose Index (CVAI), A Body Shape Index (ABSI), Cardiometabolic Index (CMI), and Conicity Index (CI) were calculated. The Area Under the Curve (AUC) of the Receiver Operating Characteristic (ROC) curve was used to analyze and compare the ability of each obesity index to identify the risk of hypertension among elderly individuals of different genders. *Results:* The AUC values of all obesity indices were above 0.52, and the differences among different genders were statistically significant ($p < 0.05$). For males, the AUC values for ABSI, CI, and CMI in identifying the risk of hypertension were 0.524, 0.575, and 0.611, respectively, while for females, the AUC values for CVAI, ABSI, and CI were 0.635, 0.530, and 0.565, respectively, with statistically significant differences ($p < 0.05$). Notably, the AUC values for the Cardiometabolic Index (CMI) in males and the Chinese Visceral Adipose Index (CVAI) in females were larger than those of other indices in identifying the risk of hypertension. *Conclusion:* The Cardiometabolic Index is the best predictor of hypertension risk among male elderly individuals, while the Chinese Visceral Adipose Index is the best predictor for female elderly individuals. In the daily management of elderly hypertension patients in the community, different obesity indices can be applied and promoted for different genders to enhance early intervention and prevention effects of hypertension.

Keywords

Obesity Indices, Hypertension, Elderly, Risk Identification