

Correlation between Overweightness and the Extent of Coronary Atherosclerosis among the South Caspian Population

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Abstract : Background: Reported effects of obesity on the extent of angiographic coronary artery disease(CAD) have been inconsistent. The present study aimed to investigate the relationships between the indices of obesity and other anthropometric markers with the extent of CAD. Methods: This study was conducted on 1008 consecutive patients who underwent coronary angiography. Body mass index (BMI), waist circumference (WC), waist-to-hip ratio (WHR), and waist-to-height ratio (WHtR) were separately calculated for each patient. Extent, severity, and complexity of CAD were determined by the Gensini and SYNTAX scores. Results: According to the results, there was a significant inverse correlation between the SYNTAX score with BMI ($r = -0.110$; $P < 0.001$), WC ($r = -0.074$; $P = 0.018$), and WHtR ($r = -0.089$; $P = 0.005$). Furthermore, a significant inverse correlation was observed between the Gensini score with BMI ($r = -0.090$; $P = 0.004$) and WHtR ($r = -0.065$; $P = 0.041$). However, the results of multivariate linear regression analysis did not show any association between the SYNTAX and Gensini scores with the indices of obesity and overweight. On the other hand, the patients with an unhealthy WC had a higher prevalence of diabetes mellitus (DM) ($P = 0.004$) and hypertension (HTN) ($P < 0.001$) compared to the patients with healthy values. Coexistence of HTN and DM was more prevalent in subjects with an unhealthy WC and WHR compared to that in those with healthy values ($P = 0.002$ and $P = 0.032$, respectively). Conclusion: It seems that the anthropometric indices of obesity are not the predictors of the angiographic severity of CAD. However, they are associated with an increased risk of cardiovascular risk factors and higher risk profile.

Keywords : body mass index, BMI, coronary artery disease, waist circumference

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