

Anthropometric Indices of Obesity and Coronary Artery Atherosclerosis: An Autopsy Study in South Indian population

Authors : Francis Nanda Prakash Monteiro, Shyna Quadras, Tanush Shetty

Abstract : The association between human physique and morbidity and mortality resulting from coronary artery disease has been studied extensively over several decades. Multiple studies have also been done on the correlation between grade of atherosclerosis, coronary artery diseases and anthropometrical measurements. However, the number of autopsy-based studies drastically reduces this number. It has been suggested that while in living subjects, it would be expensive, difficult, and even harmful to subject them to imaging modalities like CT scans and procedures involving contrast media to study mild atherosclerosis, no such harm is encountered in study of autopsy cases. This autopsy-based study was aimed to correlate the anthropometric measurements and indices of obesity, such as waist circumference (WC), hip circumference (HC), body mass index (BMI) and waist hip ratio (WHR) with the degree of atherosclerosis in the right coronary artery (RCA), main branch of the left coronary artery (LCA) and the left anterior descending artery (LADA) in 95 South Indian origin victims of both the genders between the age of 18 years and 75 years. The grading of atherosclerosis was done according to criteria suggested by the American Heart Association. The study also analysed the correlation of the anthropometric measurements and indices of obesity with the number of coronaries affected with atherosclerosis in an individual. All the anthropometric measurements and the derived indices were found to be significantly correlated to each other in both the genders except for the age, which is found to have a significant correlation only with the WHR. In both the genders severe degree of atherosclerosis was commonly observed in LADA, followed by LCA and RCA. Grade of atherosclerosis in RCA is significantly related to the WHR in males. Grade of atherosclerosis in LCA and LADA is significantly related to the WHR in females. Significant relation was observed between grade of atherosclerosis in RCA and WC, and WHR, and between grade of atherosclerosis in LADA and HC in males. Significant relation was observed between grade of atherosclerosis in RCA and WC, and WHR, and between grade of atherosclerosis in LADA and HC in females. Anthropometric measurements/indices of obesity can be an effective means to identify high risk cases of atherosclerosis at an early stage that can be effective in reducing the associated cardiac morbidity and mortality. A person with anthropometric measurements suggestive of mild atherosclerosis can be advised to modify his lifestyle, along with decreasing his exposure to the other risk factors. Those with measurements suggestive of higher degree of atherosclerosis can be subjected to confirmatory procedures to start effective treatment.

Keywords : atherosclerosis, coronary artery disease, indices, obesity

Conference Title : ICFSPC 2024 : International Conference on Forensic Science, Pathology and Criminology

Conference Location : New York, United States

Conference Dates : August 08-09, 2024