CORRELATION OF BMI AND BLOOD PRESSURE WITH CAROTID ARTERY INTIMA MEDIA THICKNESS(CIMT) IN ADULTS

ABSTRACT

Background:

Obesity is an emerging major health problem in India. Obesity is also a main risk factor for the development of metabolic disorders and cardiovascular disease (CVD.It can be assessed by the body mass index(BMI).Part of the systemic inflammation, adipose tissue-derived inflammatory factors impinge on vascular cells to promote atherosclerosis. Atherosclerosis in arterial wall is also initiated by fat retention, oxidation, and modification resulting in intima-media thickening (IMT).Hypertension,a risk factor for development of atherosclerosis, involves elastic arteries like carotid, aorta, and iliac arteries. Extra cranial carotid arteries (CCA ,ICA) are chosen for IMT assessment because of their easy accessibility. Few Indian studies are available to correlate these atherosclerotic changes occurring in the vascular system with the body mass index and blood pressure. Hence this study is undertaken.

This Study Aimed To Examine The Correlation Between Body Mass Index (Bmi) And Blood Pressure With Carotid Artery Intima-Media Thickness (Imt)

METHODOLOGY

It is a hospital_based, cross sectional study involving 100 adult subjects, aged 30-60 years of both the sex, attending the NCD outpatient department of TVMCH.IEC clearance and informed written consent obtained from the subjects before inclusion. Height,weight,BMI measured and BP recorded.IMT of the extracranial carotid arteries was measured by ultrasonography. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS),Version 22 and P value < .05 is considered statistically significant.

RESULTS:

A total of 100 subjects (41males,59females) between 31–60 years were included in the study. Mean age(46.23±8.56)years. Mean BMI (26.53±4.03). Mean SBP (136.76 $\pm$ 7.17)mmHg and Mean DBP (88.46 $\pm$6.32) mmHg. Mean CIMT(0.77 $\pm$.16)mm.Pearson correlation analysis with CIMT shows Age (r value–0.80, P value - <0.001),Gender (r - 0.12,P <0.001), BMI (r- 0.418,P <0.001), SBP (r – 0.419,P <0.001) and DBP (r– 0.473,P <0.001) have statistically significant positive correlation.

CONCLUSION

From this study we conclude that Age, obesity, Hypertension were found to have an impact on carotid IMT, which is a strong marker for the early development of atherosclerosis.

Keywords: Body mass index, Blood pressure, Atherosclerosis,Carotid artery intima media thickness