EFFECT OF BODY MASS INDEX AND WAIST CIRCUMFERENCE ON RENAL FUNCTION IN HYPERTENSIVE CHRONIC KIDNEY DISEASE
ABSTRACT
ABSTRACT

**TOPIC :** Effect of body mass index and waist circumference on renal function in hypertensive chronic kidney disease.

**Aim :**

The aim of the study is to investigate the association of Body Mass Index (BMI) and Waist Circumference (WC) with Hypertensive Chronic Kidney Disease.

**Materials & Methods :**

40 study group with Hypertensive Chronic Kidney Disease (HT-CKD; Stage I–II) in the age group of between 18-70 yrs and 40 control group of same age were included in this study. In the study group, group-1 included HT-CKD (stage I-II) patients with normal BMI, normal waist circumference, group-2 included patients with normal BMI, high waist circumference and group-3 included patients with normal waist circumference and high BMI. This case-control study was conducted in Thanjavur Medical College, Thanjavur. Patients with Chronic Kidney Disease (stage I-II) and Hypertension, patients who were non-diabetic and free from cardiovascular complications were included. Subjects with history of malignancies, or with inflammatory disorders, patients with the presence of major cardiovascular events during last 3 months prior to study, Diabetes Mellitus, heart failure and hereditary renal diseases were excluded from this study. Informed written consent from the study and control groups was obtained. Ethical committee approval was obtained before starting the study. For this study clinical history was recorded and physical
examination including body weight, height, waist & hip circumferences were measured. Waist hip ratio (WHR) was calculated. Blood Pressure was recorded. 24 hrs urine sample was collected for Albumin Excretion Rate (AER). Blood urea and Serum creatinine were estimated. Glomerular Filtration Rate (GFR) was estimated by using the Modification of Diet in Renal Disease (MDRD) formula. The results were analyzed by using student ‘t’ test and ANOVA study. Correlation of BMI and WC, WHR with various renal functions were done using Pearson’s Correlation test. P < 0.05 was considered as statistically significant.

**Results:**

There was statistically significant (p < 0.05) correlation between BMI with e GFR decline and increased blood urea level and no significant correlation between BMI with serum creatinine level elevation and elevated AER level. However, statistically significant correlation exist with waist circumference (p < 0.01) and waist hip ratio (p < 0.01) for the parameters like e GFR, serum creatinine and AER. So WC and WHR (central obesity) were statistically significantly (p < 0.01) correlated with renal function decline.

**Conclusion:**

This study revealed that abdominal obesity was statistically significantly correlated with renal function decline than increase in BMI in hypertensive chronic kidney disease (stage I-II).

**Keywords:** Body Mass Index, Waist Circumference, Hypertension, Chronic Kidney Disease, Renal function.