

# **A STUDY OF THYROID FUNCTION ABNORMALITIES IN PATIENTS WITH CHRONIC KIDNEY DISEASE**

## **ABSTRACT**

### **BACKGROUND AND OBJECTIVES:**

Chronic Kidney Disease is a worldwide health problem with an increasing incidence and prevalence. Abnormalities in the structure and function of the thyroid gland and in the metabolism and plasma concentration of thyroid hormones are common in patients with Chronic Kidney Disease. In view of variability of thyroid profile in CKD patients in previous studies, a prospective study of various thyroid function has been undertaken to establish a correlation if any between thyroid dysfunction and severity of renal diseases.

### **METHOD:**

Total number of 50 patients with Chronic Kidney Disease on conservative management fulfilling the criteria for CKD who were admitted in Department of Medicine, Coimbatore medical college & hospital, Coimbatore during the period of July 2014-July 2015 were selected in this prospective study.

### **RESULTS:**

Out of the 50 patients with CKD 29 patients had low T3 syndrome (0.2-2.0ng/ml, mean 0.67) which accounts for 58% of the patients, 12 patients had low T4 syndrome (0.5-8.5µg/ml, mean 5.65) which accounts for 24% of the patients and 4 patients had primary hypothyroidism TSH >20µIU/ml. Excluding

Primary Hypothyroidism, analysis of serum T3, T4 and TSH in the study subjects shows very high significance  $\chi^2 = 12.715$ ,  $p < 0.001$ . Distribution of Thyroid Dysfunction in this study among various creatinine clearance levels showed that as glomerular filtration rate declines, number of patients with low T3 syndrome increased. In patients with low T3 syndrome, the mean values of TSH in various stages of renal disease are within normal range, values of TSH did not show any linear correlation with GFR. Number of patients with low T4 syndrome did not correlate with severity of renal disease.

### **CONCLUSION:**

Thyroid Dysfunction occurred in 66%% of the patients with chronic kidney disease in our study, it does not indicate a state of hypothyroidism, but a reflection of the state of chronic illness/malnutrition. The low T3 state of CKD can be viewed as being protective, promoting conservation of protein. The number of patients with low T3 syndrome progressively increases with the severity of renal failure.

### **KEY WORDS:**

Thyroid dysfunction, chron  
ic kidney disease, low T3 syndrome