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Serum T4 and T3 tends to be on the lower side in CRF. Since a major route of iodide elimination is by urinary excretion, the decreased renal clearance in advanced renal failure leads to high plasma level of iodide which may contribute to thyroid dysfunction. Accumulation of toxic substances in CRF also contribute abnormal thyroid functions. Peripheral production of T3 from T4 is decreased in CRF. Present study was done on 50 patients (comprising of 10 cases as control group and 30 cases as CRF patients on conservative medical management and 10 cases as CRF patients on hemodialysis), during a period of 26 Sep 2002 to 15th Nov 2003. The study was done to find out serum T4 and T3 levels in patients of CRF on conservative medical treatment and on hemodialysis. Thyroid function test were done by chemiluminscence immunoassay technique. Observations showed T3, T4, TSH 124±30.4 (82-168); 10.24±2.62 (5.7-11.8); 4.02±2.10 (0.6-5.0) respectively in the control group.

T3, T4 and TSH values in patients on conservative medical treatment were 108.33±28.32 (50-200); 6.57±3.02 (2.0-12.5); 3.6±1.76 (1.2-7.5) respectively. T3 and T4 were in hypothyroid range in 23.33% and 40% of patients respectively in cases of CRF patients on conservative medical treatment.
The mean serum T3, and T4 in CRF patients on medical treatment, (though in normal range) were lower in comparison to that of control group.

In hemodialysis group patients; predialysis value of T3, T4 and TSH 11.5±33.45 (65-180); 5.61±3.01 (2.2-8.2); 2.81±1.23 (1.4-5.5) respectively. Post dialysis values of T3, T4 and TSH were 123.8±39.28 (82-190); 7.64±3.53 (5-11); 2.31±1.3 (1.2-5) respectively. Mean serum T3 and serum T4 had risen marginally and serum TSH have marginally decreased in postdialysis group when compared to predialysis group. On comparing the T3, T4 and TSH between control group and patients on hemodialysis T4 values were statistically very significant in predialysis group and it was statistically significant in post dialysis group. T3 and TSH values were not significant statistically.

We concluded from the present study that serum T3 and T4 are decreased in CRF patients and there is increase in serum T4 value after hemodialysis.