Summary and Conclusion

Up to 40-50% of patients presenting with end-stage renal disease (ESRD) are not aware of any preexisting renal disease. ESRD was defined as a serum creatinine concentration four or more times higher than normal for age and gender, or a GFR below 10ml/min/1.73m^2 for at least three months.

Indeed, growth failure persists in a substantial proportion of children with renal failure and those treated with maintenance dialysis. In children with renal insufficiency, the growth rate diminishes when the GFR falls below 50% of normal. The precise cause of growth failure is unknown; a major factor is inadequate caloric intake (<70% of recommended dietary allowance).

In order to study the clinical, laboratory and radiological changes in children with renal osteodystrophy associated with chronic renal failure, this study was conducted on 20 children suffering from renal failure and on maintenance dialysis compared with 16 normal age-matched children as a control group.

BUN, serum creatinine, ALP, and PTH were significantly higher in patients' group, while serum calcium, serum albumin, Hb, serum iron, TIBC, GFR, blood pH and HCO_3 were significantly higher in the control group.High turnover bone disease was the most common type of the bone disease 8 cases(40%) . While the low turnover bone disease was 7cases (35%)and the mixed bone disease type was 5 cases (25%).

Parathyroid hormone was found the most predictive sensitive and specific parameter and the most common manifestation of renal osteodystrophy was bone ache .

On comparison of age, weight, blood pressure, serum potassium, serum phosphorus, and total proteins between both groups, there were no significant difference.

In conclusion, clinical, radiological and biochemical markers of renal bone disease should be monitored regularly, with close monitor to hyperphosphatemia and hypocalcemia in children on maintenance dialysis, with special emphasis on parathyroid hormone and other hormonal changes related to bone development.