INTRODUCTION

End stage renal disease (ESRD) is a common medical problem with increasing prevalence with time. As life expectation of patients with chronic renal failure (CRF) increases systemic complications of kidney disease are likely to become increasingly important that may affect virtually every system in the body, including the lungs.

Pulmonary edema & pleural effusion attributed to fluid overload and an increase in pulmonary capillary permeability are relatively common. Other complications include pulmonary fibrosis and calcification, pulmonary hypertension, haemosidrosis, pleuritis, and pleural fibrosis ***(Gavelli and Zompatori M. 1997).***

Renal replacement therapy (RRT) may also result in complications. Hemodialysis (HD) cause recurrent episodes of hypoxaemia due to partial blockage of pulmonary capillary bed by white cells or silicone micro emboli. Renal transplantation (RT) introduces the further hazards of lung infections and lung complications from immunosuppressive drug ***(Bush & Gabriel, 1991).***

In patients with CRF mechanical and hemodynamic changes could occur in the lungs without obvious pulmonary symptoms & findings and their alteration in respiratory drive, mechanics, muscle function and gas exchange are frequent if not invariable consequence of uremia. Pulmonary dysfunction may be the direct result of circulating uremic toxins or may results indirectly from volume overload, anemia, immune suppression, extra osseous calcification, malnutrition, electrolyte disorders, and /or acidbase imbalance ***(Prezant, 1990).***

The most common pathological condition of the lungs in CRF is pulmonary edema, usually due to a combination of fluid overload and abnormal permeability of the pulmonary microcirculation.

Although most patients are free from overt edema, minor degree of fluid retention are virtually impossible to detect clinically and interstitial pulmonary fibrosis secondary to recurrent pulmonary edema is usually developed ***(Kalender, et al., 2002).***

In patients with CRF, repeated pulmonary insults through various mechanisms could damage the alveolocapillary wall and introduce disturbance of lung function without obvious pulmonary symptoms & findings.

Although an increasing number of patients have a functioning renal transplant, the availability of organs for transplantation have not grown proportionately with the increase in patients treated for ESRD ***(Chan, et al.,1996).***

AIM OF THE WORK

This is a comparative study aiming in evaluating pulmonary function in uremic children on regular hemodialysis, compared to normal healthy children of the same age group (Reference values).