SUMMARY

In CRF patients, mechanical and haemodynamic changes could occur in the lung without obvious pulmonary symptoms and findings, and their effects could pave way to pulmonary function disorders, also RRT may result in complications which may affect the lung directly or through interference of lung mechanics.

A large number of pathological changes have been described in the lungs of uremic patients, such as; uremic pleuritis, pleural fibrosis, uremic pneumonia, interstitial fibrosis, pulmonary arteriosclerosis and thromboembolism, pulmonary haemorrhage, metastatic pulmonary calcifications, and pulmonary infections.

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

In this study we aimed to identify the pulmonary function disorders in CRF patients and study the need for testing for them in certain patients groups.

The study included 25 patients with different degrees of renal impairment. Their age varied between 9 and 18 years. 11 were males and 14 were females. It was carried out in the pediatric department, Benha University Hospital.

They were subjected to :

- Basic laboratory investigations including CBC, blood gas analysis, BUN, creatinine, albumin and electrolytes.
- Estimation of GFR level.

- PFT including (flow volume loop curve), DLCo and lung volumes (TLC & RV).

Patients were classified according to their GFR into 3 groups; GFR: < 10, 10 – 24, 25 – 49 ml /min/ 1.73 m^2. Mostly all patients had affected PFT parameters with mild deterioration at the higher GFR levels and the worst PFs were in patients with ESRF.

Patients on RRT who had GFR < 10 ml / min / 1.73 m^2 had the most affected PFT with lowest levels of FVC, FEF_{25-75}, PEF, TLC and DLCo adj. with the most significant increased level of RV and RV/TLC ratio.

The spirometric disorder in patients implied as restrictive ventilatory defect and this alteration in spirometric function was continuous with reduction of GFR.

FEF_{25-75} and PEF were the most deteriorated parameters even at higher GFR levels, that demonstrate small airway dysfunction, which was affected early at the onset of kidney function impairment, and deteriorate with progression of RF.