This study on anaemia and its response to treatment with recombinant human erythropoietin (r-HuEpo) in patients with Chronic Kidney Disease (CKD) in AKTH was carried out over a period of one year (between January 2005 and December 2005), with a view to study the pattern of anaemia in CKD patients and also its response to treatment with recombinant human erythropoietin (r-HuEpo) in this environment as there is paucity of literature on this topic from this part of the country.

Twenty patients with CKD (10 on maintenance haemodialysis and 10 with early stages of CKD) who satisfied the inclusion criteria were recruited consecutively. Twenty apparently healthy, age and sex-matched adults were recruited to serve as controls. Each patient was administered a prepared questionnaire after an initial clinical evaluation. Series of haematological investigations including complete blood count, red blood cell indices, as well as clotting profiles (PT, PTTK, and Bleeding Time) were carried out in all the patients and the controls. Also biochemical investigations including serum urea electrolytes, creatinine, calcium, phosphate and albumin were measured in both the patients and the control subjects. Iron studies including measurement of serum iron, total iron binding capacity and Ferritin were done on each patient and also those in the control group. Other investigations carried out on both the patients and the control subjects included haemoglobin electrophoresis, G6PD status, stool test for occult blood and microscopy, malarial parasite and urine microscopy, culture and sensitivity. Bone Marrow aspiration for morphology and iron stain as well as echocardiography and electrocardiography were done on each of the study patients.

Subcutaneous r-HuEpo was administered in each of the study patients, starting with a weekly dose of 50iu/Kg and titrated according to haemoglobin (Hb) response, which was monitored fortnightly throughout the study period. All the patients studied were anaemic with mean Hb of 7.36 ± 1.05 g/dl compared to the controls with mean Hb of 14.9 ± 1.08 (p=0.03). The anemia was normocytic normochromic in 85% of the patients. The white blood cell count and the platelet counts were within
normal limits. Seventy percent had normocellular marrow. All the patients studied had
echocardiographic evidence of left ventricular hypertrophy.

All the patients responded to treatment with r-HuEpo with the mean Hb rising from 6.74g/dl ± 0.70 to
11.64g/dl ± 0.37 and 7.64 g/dl ± 1.19 to 11.98 g/dl ± 0.45 g/dl in those on maintenance haemodialysis
and those CKD patients not yet on dialysis respectively. The patients reached the target Hb of 11g/dl
within 8 weeks in predialytic CKD patients and within 10 weeks in those on maintenance
haemodialysis. The target Hb was reached on a mean weekly r-HuEpo dose of 151.1 iu/kg in
haemodialysis patients and 91.85 iu/kg in predialysis patients. Conclusions drawn from this study were
that anaemia is common in CKD patients both on maintenance haemodialysis and predialytic CKD
patients in our environment. The anaemia was predominantly hypoproliferative with normocytic
normochromic picture in most of them. R-HuEpo therapy was effective in correcting the anaemia in
these patients and target haemoglobin levels of 11-12 g/dl were reached with a weekly dosage of
151.1iu/ kg and 91.85iu/ kg in maintenance haemodialysis and predialysis CKD patients respectively.