

Low G6PD activity in Patients with Chronic Kidney Disease of Unknown Aetiology in Sri Lanka

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Introduction : Chronic Kidney disease (CKD) is a growing worldwide health problem. In recent years investigators in Sri Lanka have noticed a very worrying increase of the number of patients with CKD in certain parts of the country. Studies performed so far suggest a common, although yet unknown aetiology, leading to marked tubulointestinal fibrosis of the kidneys that finally causes kidney failure. Glucose-6- phosphate Dehydrogenase (G6PD) deficiency is the commonest enzymopathy in the world. G6PD catalyzes the entry step of G6P into the Pentose Phosphate Shunt that is the only source for NADPH, which is required to maintain an effective redox potential protecting red cell membrane against oxidative stress and injury. The literature shows that G6PD deficiency is so far related only to acute renal failure and no association with chronic renal failure was found. **Objective :** The objective of the study is to assess the prevalence of G6PD deficiency among the CKD patients with unknown aetiology. **Material and method :** We selected 25 diagnosed CKD patients with unknown aetiology attending the nephrology clinic in General Hospital, Kandy as the study group and age matched healthy normal subjects as the control (20) group. The G6PD enzyme assay was determined by measurement of the absorbance change at 340 nm due to the reduction of NADP in peripheral blood samples. The normal G6PD levels in the population was assessed using the control group (225±23 mU/10⁹ RBC). **Results :** The CKD patients of unknown aetiology showed significantly low levels of G6PD activity than control group (p<0.005) Forty eight percent (48%) of the study group (n=12) had severe (n=1), moderate (n=7) to mild (n=4) G6PD deficiency. The deficient group included early, moderate as well as end stage renal disease patients. **Discussion :** The results show that there is a higher prevalence of the G6PD deficiency in patients with CKD of unknown origin and indicates the possibility that G6PD deficiency plays an important role in the pathogenesis of the disease.