

## Neurological Complications in Patients on Chronic Dialysis Therapy

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**Background:** Neurological disease represents significant morbidity among chronic dialysis patients whether disease or dialysis associated. It has now been proven that stroke, dementia and uraemic myopathy are independent mortality predictors in this cohort of patients. We therefore undertook to ascertain the prevalence of neurological complications among chronic dialysis patients at a tertiary level hospital outpatient dialysis centre.

**Methods:** Sixty haemodialysis and ten peritoneal dialysis patients were consecutively recruited. All were subjected to questionnaire directed interviews and neurological examinations. A consultant neurologist confirmed the neurological complications based on clinical, biochemical, pathological and radiological parameters.

**Results:** Mean haemoglobin (Hb) concentration was  $10.0 \pm 1.8$  g/dl, mean urea reduction ratio (URR)  $75\% \pm 9\%$ , mean serum albumin  $41 \pm 6.4$ g/dl. Hypertension accounted for 40% of the aetiology of ESRD, followed by chronic glomerulonephritis and diabetes mellitus, 15.7% and 12.9% respectively. Peripheral sensory neuropathy had an overall prevalence of 77% compared with 4.3% and 8.6% respectively for peripheral sensorimotor and autonomic neuropathy. Age, duration of end stage renal disease, comorbidities of DM and hypertension were not risk factors for these neuropathies ( $p > 0.05$ ).

Overall prevalence for uraemic myopathy, dementia, stroke and transient ischaemic attack were 50%, 12.9%, 12%, 1.4% respectively. Stroke was a risk factor for dementia ( $p = 0.02$ , Odds ratio 1.52) There was a trend towards stroke in chronic haemodialysis patients (odds ratio 3.52,  $p = 0.109$ ).

Twenty-five (25%) per cent of cases had documented seizures with 80%, 12% and 8% being generalized tonic clonic, complex partial and simple focal seizures respectively. An insignificant trend was noted towards seizures in chronic haemodialysis patients ( $p = 0.47$ , odds ratio 2.297). No correlation was seen between stroke, seizures and uraemic encephalopathy ( $p > 0.05$ ). Uraemic encephalopathy was documented in 21.4% of cases with 72 % being seen at diagnosis of ESRD. Dialysis disequilibrium had an overall prevalence of 35.7%.

**Conclusion** Neurological complications are prevalent in ESRD patients on long term dialysis therapy. The translation to mortality outcomes requires further investigation.