

ABSTRACT

Objective: To determine factors associated with cognitive impairment in patients on Maintenance hemodialysis

Study Design: Cross-sectional

Methodology:

Patients of either gender, aged 40 to 80 years on maintenance hemodialysis for more than 3 months were selected by convenience sampling. Exclusion criteria included stroke, psychiatric disorders and active sepsis. Key parameters noted were the age, gender, frequency and vintage of hemodialysis, comorbidities, educational status and lab parameters including hemoglobin, serum calcium levels, serum phosphate levels and albumin. Montreal cognitive assessment version 8.3 was administered in direct face to face interviews to assess cognitive function. A score less than 25 signified cognitive impairment.

Results: There were 71 patients aged 58.00 (53.00-62.00) years. Cognitive impairment was present in 46 (64.79%) patients, using a cutoff score of 25. Patients with higher serum calcium levels were 0.666 times less likely to have cognitive impairment (95% confidence interval= 0.456- 0.974; $p=0.036$). Age, gender, comorbidities, monthly income, frequency or vintage of haemodialysis, haemoglobin, phosphate or albumin levels could not predict cognitive impairment. The median MOCA® score was 29.00 (27.00-30.00) in the impaired group vs 23.00 (22.00-24.00) in the normal cognition group (<0.001). The serum calcium is 0.666 (95% Confidence Interval 0.456, 0.974) times more likely to predict cognitive impairment in ESRD patients ($p=0.036$). However, the frequency of hemodialysis sessions (95% Confidence interval 0.107, 0.934; $p=0.037$) and serum haemoglobin (95% Confidence interval 0.646, 1.103; $p=0.214$) are risk factors for cognitive impairment. Efforts should

thus be made to screen for cognitive impairment in people with hypocalcemia and to correct serum calcium levels in such patients.

Conclusion: lower serum calcium levels predict cognitive impairment in patients on maintenance hemodialysis.

Keywords: Cognitive Dysfunction, Chronic Kidney Disease, End-stage renal disease, Hemodialysis, Renal Replacement Therapy