Cognitive Function Among Hemodialysis Patients in Saudi Arabia:

An Observational Study

Almalki A, Binladen F, Zahrani A, Albluwi F, Alharthi M

Abstract

Background

As kidney function deteriorates reaching to hemodialysis (HD) stage, higher rate of cognitive impairment (CI) is observed. No previous research was conducted on epidemiology and determinants of cognitive impairment among HD patients in Saudi Arabia. We aimed in this study to estimate the prevalence of CI using the Montreal Cognitive Assessment (MoCA) test and examine underlying factors among chronic HD patients.

Methods

A cross-sectional observation is conducted on patients >50 years of age, on regular HD for >6 weeks, with no recent hospitalization, no active sepsis, and no documented stroke, dementia or epilepsy. From 3 HD centers, patients were consented and assessed by 3 senior medical residents using pre-tested Arabic version of MoCA form. The diagnosis of CI was defined as a score of <26. Clinical, laboratory and dialysis data were collected to examine factors determining CI.

Results

Among the 161 patients (59% men, median age 60 [IQR 13] and median duration on HD 24 [IQR 24] months), 62% were diagnosed with CI, proportion of 0.62 (95% CI 0.55 to 0.70). Majority were mild and moderate in severity (54% and 44%, respectively). The most affected domains are recall, followed by executive functions. Logistic regression analysis showed significant association with age ≥65 years (adjusted OR 2.39; 95% CI 1.11 to 5.18; P value 0.027), female gender (adjusted OR 3.05; 95% CI 1.16 to 8.03; P value 0.024) and higher intact parathyroid hormone (iPTH) levels (adjusted OR 1.001; P value 0.049).

Conclusions

CI is common among HD patients above age of 50 years. Majority is mild to moderate impairment of recall followed by executive functions. Our study confirms association of CI with increasing age, female gender and higher levels of iPTH. We recommend further research to study the association between CI and iPTH.

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