Serum potassium and handgrip strength as predictors of sleep qualtiy among hemodialysis patients in Malaysia

ABSTRACT

Background and Objectives:Poor sleep quality is prevalent among hemodialysis (HD) patients and leads to adverse health outcomes. This study investigated the association of nutritional parameters with sleep quality among Malaysian HD patients. Methods and Study Design:A cross-sectional study was conducted among 184 Malaysian HD patients. Anthropometric measurements and handgrip strength (HGS) were obtained using standardized protocols. Relevant biochemical indicators were retrieved from patients' medical records. Nutritional status was assessed using the dialysis malnutrition score. The sleep quality of patients was determined using the Pittsburgh Sleep Quality Index questionnaire on both dialysis and non-dialysis days. Results: Slightly more than half of the HD patients were poor sleepers, with approximately two-third of them having a sleep duration of <7 hours per day. Sleep latency (1.5±1.2) had the highest sleep component score, whereas sleep medicine use (0.1±0.6) had the lowest score. Significantly longer sleep latency and shorter sleep duration were observed in the poor sleepers, regardless of whether it was a dialysis day or not ($p<0.001$). Poor sleep quality was associated with male sex, old age, small triceps skinfold, hypoproteinemia, hyperkalemia, hyperphosphatemia, and poorer nutritional status. In a multivariate analysis model, serum potassium ($\beta=1.41, p=0.010$), male sex ($\beta=2.15$, $p=0.003$), and HGS ($\beta=-0.088$, $p=0.021$) were found as independent predictors of sleep quality. Conclusions: Poor sleep quality was evident among the HD patients in Malaysia. The sleep quality of the HD patients was associated with nutritional parameters. Routine assessment of sleep quality and nutritional parameters indicated that poor sleepers have a risk of malnutrition and may benefit from appropriate interventions.

Keyword: Hemodialysis; Sleep quality; Nutritional parameters; Hyperkalemia; Pittsburgh sleep quality index