Is malnutrition a determining factor of health-related quality of life in hemodialysis patients? A cross-sectional design examining relationships with a comprehensive assessment of nutritional status

ABSTRACT

Purpose: To identify relationships between health-related quality of life (HRQOL) and nutritional status in hemodialysis (HD) patients. Method: Secondary data from a cross-sectional survey was utilized. HRQOL was assessed for 379 HD patients using the generic Short Form 36 (SF-36) and disease-specific Kidney-Disease Quality of Life-36 (KDQOL-36). Malnutrition was indicated by malnutrition inflammation score (MIS) ≥ 5, and presence of protein-energy wasting (PEW). The individual nutritional parameters included the domains of physical status, serum biomarkers, and dietary intake. Multivariate associations were assessed using the general linear model. Results: MIS ≥ 5 was negatively associated with SF-36 scores of physical functioning (MIS < 5 = 73.4 ± 8.0 SE vs MIS ≥ 5 = 64.6 ± 7.7 SE, $P < 0.001$), role-limitation-physical (MIS < 5 = 65.3 ± 14.3 SE vs MIS ≥ 5 = 52.9 ± 14.0 SE, $P = 0.006$), general health (MIS < 5 = 53.7 ± 7.5 SE vs MIS ≥ 5 = 47.0 ± 7.1 SE, $P = 0.003$), and PCS-36 (MIS < 5 = 40.5 ± 3.3 SE vs MIS ≥ 5 = 35.9 ± 3.1 SE, $P < 0.001$); and KDQOL-36 score of symptoms/problems (MIS < 5 = 78.9 ± 5.6 SE vs MIS ≥ 5 = 74.8 ± 5.4 SE, $P = 0.022$), but not with PEW by any tool. Of individual nutritional parameters, underweight (68.1 ± 5.4 SE, $P = 0.031$), normal weight (63.8 ± 2.8 SE, $P = 0.023$), and overweight (64.3 ± 2.9 SE, $P = 0.003$) patients had significantly higher physical functioning scores compared to obese patients (44.8 ± 5.5 SE). Serum albumin levels were positively associated with physical functioning ($P = 0.041$) score. HGS was also positively associated with physical functioning ($P = 0.036$), and vitality ($P = 0.041$) scores. Greater dietary phosphorus intakes were significantly associated with lower scores for role limitation-physical ($P = 0.008$), bodily pain ($P = 0.043$), and PCS-36 ($P = 0.024$). Conclusion: Malnutrition diagnosis by MIS, but not PEW, indicated associations with HRQOL in HD patients. Individual nutritional parameters that related to higher HRQOL were BMI < 30 kg/m2, better dietary phosphorus control, greater muscle strength and higher visceral protein pool.