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# Post-dialysis Fatigue And Symptom Burden Among Maintenance Hemodialysis Patients: A Multi-centre Study.

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**Objectives :** Patient Reported Outcome Measures (PROMs) which include post-dialysis fatigue is an important predictor among end-stage kidney disease (ESKD) patients that adversely affects their quality of life. Dialysis recovery time (DRT) is a reliable indicator of post-dialysis fatigue. This study aims to determine factors influencing DRT among in-center maintenance hemodialysis (HD) patients.
**Methods :** A cross-sectional study was conducted among prevalent ESKD patients aged >18 years, >3 months on HD in three different centers. Demographic data, comorbidities, dialysis parameters and laboratory investigations were recorded. All patients were asked regarding DRT and interviewed using a validated Integrated Palliative Outcome Symptom (iPOS) renal questionnaire. They were divided into three groups: Group 1: DRT <2 hours, Group 2: DRT between 2 to 4 hours, and Group 3: DRT >4 hours.
**Results :** A total of 123 patients were included in the study, with mean age of 57.62 ± 14.25 years. Seventy (56.9%) patients were male, and 53 (43.1%) were diabetics. Multivariate analysis revealed that mean hemoglobin levels were significantly lower in patients with DRT >4hrs at 9.72 ±1.53 g/L vs 11.00 ±1.93 g/L in group 1, and 10.58 ±1.66 g/L in group2, p= 0.07. Patients with DRT >4 hours also had lower serum magnesium levels and longer dialysis vintage compared to patients in groups 1 and 2, $p<0.05$. Results are shown in Table 1. There was no significant association between DRT and age, gender, race, diabetes, body mass index, employment status, dialysate sodium, ultrafiltration rate or serum albumin.
**Conclusions :** Anemia, lower magnesium levels and longer dialysis vintage significantly affected DRT. Patients with DRT >4 hours were also found to have much higher iPOS scores, translating to increased symptom burden. Practical, cost-effective measures in correcting anemia and maintaining high normal magnesium levels could potentially improve patient reported outcome in hemodialysis patients with post-dialysis fatigue.

Table 1.png

**Table 1. Relationship between DRT and dialysis, laboratory parameters**

| Parameter | Group 1 *n*= 80 | Group 2 *n*= 28 | Group 3 *n*= 15 | *p* value |
|---|---|---|---|---|
| Mean serum hemoglobin (g/dL) | 11.00 ± 1.93 | 10.58 ± 1.66 | 9.72 ± 1.53 | 0.07 |
| Mean serum magnesium (mmol/L) | 1.08 ± 0.17 | 1.01 ± 0.19 | 0.95 ± 0.22 | 0.018 |
| Dialysis vintage (months) | 58.60 ± 47.18 | 55.68 ± 52.82 | 100.13 ± 83.62 | 0.02 |
| POS-S renal score | 2.80 ± 3.33 | 4.50 ± 3.69 | 8.53 ± 11.76 | 0.001 |
| Age (years) | 56.50 ± 15.11 | 60.93 ± 13.31 | 57.41 ± 10.39 | 0.369 |
| Diabetes *n* (%) | 46 (57.5%) | 18 (64.3%) | 6 (40%) | 0.304 |
| Albumin (g/L) | 40.31 ± 3.90 | 39.97 ± 4.45 | 39.13 ± 3.46 | 0.565 |