

INFLUENCE OF NUTRITIONAL STATUS ON ANEMIA TREATMENT IN CROATIAN PERITONEAL DIALYSIS PATIENTS: A MULTICENTRE STUDY

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Objectives:

Malnutrition is common in patients with end stage renal disease (ERSD) and adversely affects their prognosis. Also, anaemia is very common among ESRD on peritoneal dialysis(PD) and has been shown to be associated with increased mortality and hospitalization. The aim of this study was to investigate is there correlation between nutritional status and anaemia treatment in PD patients.

Methods:

In this study 190 PD patients (78 (41.05 %) females, 112 (58.95 %) males; aged 57.35 ± 14.41 years; on PD treatment for 24.96 ± 24.43 months) were included. Biomarkers reflecting anaemia (erythrocytes, haemoglobin (Hb), iron, mean corpuscular volume, total iron binding capacity) were measured. Also, erythropoietin weekly dose (IU) per kg of body weight (EPO\_week) was calculated. To asses nutritional status Malnutrition inflammation score (MIS) was used. A lower MIS score denotes tendency towards a normal nutritional status and a higher score, however, is consider being an indicator of the presence of malnutrition elements.

Results:

The mean Hb level was 111.86±14.79 g/L and mean EPO\_week was 44.5±48.12 IU. Statistically significant difference in MIS score between subjects with Hb lower then 110 g/L (N=77, 40.5%) and subjects with Hb higher or equal than 110 g/L (N=113, 59.5%) was found (4.54±3.54 vs. 3.02±2.54; p=0.014). Also, statistically significant correlations between MIS score and EPO\_week was found (r=0.4392, p=<0.001). Correlations between MIS score and biomarkers reflecting anaemia are shown in Table 1.

**Table 1** Correlation between Malnutrition inflammation score (MIS) and biomarkers reflecting anaemia among all peritoneal dialysis patients (Pearson’s correlation coefficient, one-tailed significance level, significant correlations are marked)

	Malnutrition inflammation score	
	Correlation coefficient	P
Erythrocytes (x10 <sup>9</sup> L)	- 0.435	<0.001*
Haemoglobin (g/L)	- 0.332	<0.001*
Mean corpuscular volume (fL)	0.344	<0.001*
Iron (μmol/L)	- 0.229	0.021*
Total iron binding capacity (μmol/L)	- 0.362	<0.001*

Legend: p: significance; \*p < 0.05

Conclusions:

The study demonstrated that nutritional status and anaemia are significantly correlated in PD patients. Also, results have shown that PD patients with better nutritional status (lower MIS score) are receiving statistically lower EPO\_week. Therefore, simple methods of nutritional assessment and nutritional support could have favourable impact of anaemia treatment in PD patients.

References:

Kovesdy CP, Kalantar-Zadeh K. Accuracy and limitations of the diagnosis of malnutrition in dialysis patients. Semin Dial 2012;25:423-7.

