

RESISTANCE TO STIMULATING ERYTHROPOIESIS IN PATIENTS ON PERITONEAL DIALYSIS

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OBJECTIVES

Several studies indicate a satisfactory response to treatment of anemia with erythropoiesis-stimulating agents (ESAs) in patients with chronic kidney disease. Resistance to these agents is associated with increased morbidity and mortality.

The aim of this study is to identify possible factors involved in resistance to ESAs in patients on peritoneal dialysis.

METHODS

A retrospective observational study in one year. Included 53 patients on peritoneal dialysis with minimum of 10 months. Patients with active infection, cancer, surgery or transfusion in the last 3 months were excluded.

The study divided the patients into two groups: untreated and treated with ESAs. Treated patients were subdivided, based on the resistance index (RI) in sensitive or resistant to ESAs, being resistant those with IR > 9.

RESULTS

The mean age of patients was 50.2 years, 57% were male. 49% were on automated peritoneal dialysis and 51% on manual therapy. Statistically significant differences were found in the group treated with ESAs (77,4%) versus non treated group. 17% of the patients treated showed resistance to ESAs compared to the sensitive patients.

	NOT TREATED WITH ESAs ¹	TREATED WITH ESAs ¹	P VALUE
Time on PD (months)	16,6 (11,7-21,6)	29,9 (22,9-37,0)	0,038
Kt/V	2,48 (2,1-2,8)	2,03 (1,98-2,1)	0,076
Weekly CCr	113,55 (85,7-141,3)	76,26 (64,1-88,3)	0,007
RRF	18,1 (-1,8 - 38,1)	3,76 (2,4-5,0)	0,001
Not Fe	16,7% (n=2)	43,9% (n=18)	0,001
Oral Fe	41,7% (n=5)	2,4% (n=1)	
IV Fe	41,7% (n=5)	53,7% (n=22)	
Albumin	4,1 (3,8-4,4)	3,7 (3,63-3,92)	0,026
Prealbumin	46,7 (41,4-52,0)	39,5 (36,7-42,4)	0,019
β2 mcg	16,8 (13,9-19,7)	32,1 (26,3-38,0)	0,012
Creatinine	6,5 (5,3-7,7)	9,0 (8,0-10,0)	0,040
Tryglicérides	165,4 (122,5-208,3)	127,2(109,1-145,2)	0,041

	ESAs RESISTANT ¹	ESAs SENSITIVE ¹	P VALUE
Resistance index to ESAs	14,2 (10,4-17,9)	3,2 (2,6-3,9)	0.001
Weekly dosing (UI/Kg)	254,5 (62,6-446,3)	63,4 (47,3-79,5)	0.001
Prealbumin	32,4 (22,9-41,9)	41,1 (38,3-44,0)	0,030
Tryglicérides	91,5 (56,4-126,7)	135,2 (114,9-155,5)	0,038
Bicarbonate	29,3 (28,14-30,5)	26,2 (25,1-27,3)	0,003
Hemoglobin	10,5 (9,83-11,3)	11,6 (11,2-12,1)	0,028

(¹)Media: IC 95% ((lower limit, upper limit)

CONCLUSIONS

The need to administer ESAs depends on several factors. In our study the time on peritoneal dialysis, proved to be a determining factor in whether or not receiving ESAs, so that patients receiving ESAs remained almost twice as long on a dialysis program than those who are not treated with ESAs.

Preserving residual renal function and adequate nutritional status are key factors for not needing treatment with ESAs and if it is necessary, an optimal quality of dialysis as assessed by Kt/V and weekly CCr, will mean that exogenous erythropoietin requirements are lower consequently the costs aren't as high.

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