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Effect of parenteral glutamine supplement on blood albumin levels

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INTRODUCTION

Glutamine is an amino acid with several functions. It acts as a precursor of protein synthesis, regulates the transport of nitrogen between organs and tissues, and is involved in active cell replication. Several studies have found a significant increase in albumin levels in patients receiving parenteral nutrition supplemented with glutamine.[1,2]

OBJECTIVES

To compare differences in blood albumin levels between patients receiving glutamine-supplemented parenteral nutrition and patients receiving non-supplemented parenteral nutrition.

METHODS

Observational study performed from 01/01/2010 to 31/12/2010.
Study population: Surgical patients who started parenteral nutrition during the study period and whose blood albumin level had been assessed.
Patients were divided into two groups:
1. Glutamine group: patients receiving parenteral nutrition supplemented with glutamine for 7 days.
2. Control group: patients receiving parenteral nutrition without glutamine supplement.
We recorded blood albumin levels at the start of parenteral nutrition and after 7 days. We calculated the variation in albumin levels in both groups and applied the t test to identify significant differences between groups. Data were collected from the software used to prepare parenteral nutrition (Multicomp ®) and from the application used to record clinical laboratory data (IntraLAB ®). The statistical analysis was performed using SPSS ® version 15.

RESULTS

	Group	N	Mean	Standard deviation.	Standard error of the mean
Albumin variation	Control	30	,180	,3388	,0618
	Glutamine	30	,457	,3636	,0664

		Levene test for equal variances		T-test for equality of means						
									95% confidence interval for the difference	
		F	Sig.	t	gl	Sig. (bilateral)	Mean difference	Standard error of the difference	High	Low
Albumin variation	Equal variances assumed	,090	,766	-3,04	58	**,003**	-,276	,0907	-,458	-,095

The mean increase in albumin level was 0.457 g/dL in the glutamine group and 0.180 g/dL in the control group
(p = 0.003)

CONCLUSIONS

We found statistically significant variations in albumin levels in favor of the group receiving glutamine-supplemented nutrition. Further controlled studies are needed to confirm this finding.

REFERENCES

1- Fuentes-Orozco C, Cervantes-Guevara G, Muciño-Hernández I, López-Ortega A, Ambriz-González G, Gutiérrez-de-la-Rosa JL et al. L-alanyl-L-glutamine-supplemented parenteral nutrition decreases infectious morbidity rate in patients with severe acute pancreatitis. JPEN J Parenter Enteral Nutr. 2008;32(4):403-11.

2 - Ockenga J, Borchert K, Rifai K, Manns M P, Bischoff S C. Effect of glutamine-enriched total parenteral nutrition in patients with acute pancreatitis. Clinical Nutrition 2002; 21(5): 409–16

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