

# PARENTERAL NUTRITION BETTER THAN ENTERAL NUTRITION IN PEDIATRICS INTENSIVE CARE ?

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## Introduction:

The Nutrition Support Team of Clínica del Niño PREVIANDES in Bogotá has been working since August 1996, led by a Gastroenterologist Pediatrician with Master in Clinical Nutrition and the help of Nutritionists and Nurses - Enterostomal therapist.

## Objective:

To compare clinical and biochemical parameters in children that received parenteral nutrition and the ones with enteral nutrition in pediatric intensive care unit (PICU).

## Patients and method:

121 hospitalized patients were analyzed in ICU due to different causes (January 2003 – December 2003) through a descriptive and retrospective study.

## Results:

56 patients received parenteral nutrition (PN) and 65 patients enteral nutrition (EN). The indications from PN were mostly gastrointestinal tract diseases and their complications (42%) while the EN occurred in patients with respiratory (54%) and neurological (45%) diseases (Figure N°1).

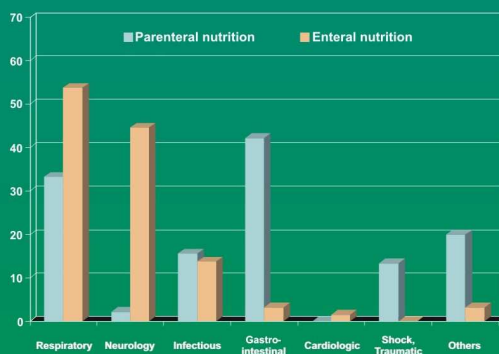


Figure No. 1. Indications for nutritional support.

The central vein access (97%) was the most used in the PN and the nasoduodenal tract (91%) in patients with EN. The metabolic complications were as frequent in EN as in PN.

After comparing both groups; we observed that neither of them had significant differences in the weight at the entry or at the exit (NE  $p=0.836$ ; NP  $p=0.737$ ). The values of albumin in the EN group improved, but not in the parenteral.

The lymphocyte count at exit compared with the lymphocyte count at beginning improved significantly as PN ( $p=0.042$ , t paired) as EN ( $p=0.036$ , t paired) but there was not significant difference when comparing the two types of nutritional support (entry  $p=0.633$ , exit  $p=0.24$ ) (Table N°1).

Table No. 1. Comparison between Parenteral Nutrition and Enteral Nutrition.

VARIABLE	PARENTERAL NUTRITION n= 56	ENTERAL NUTRITION n= 65	p
Duration (Entry vs exit)	7 ± 5.5 days	10 ± 8.5 days	NS
Hipoalbuminemia (Entry vs exit)	67% vs 33%	79% vs 65%	NS
Linfocytes (Entry vs exit)	$p=0.042$	$p=0.036$	NS
Weigth (Entry vs exit)	$p=0.737$	$p=0.836$	NS

NS= Not Significance

We observed a greater number of metabolic complications (hyponatremia, hyperkalemia, hypokalemia, hyperglycemia, hypercholesterolemia and hypertriglyceridemia) in patients with PN (Table N°2).

Table No. 2. Complications of the Parenteral Nutrition and Enteral Nutrition.

COMPLICATION	PARENTERAL NUTRITION %	ENTERAL NUTRITION %
Hypokalemia	25.5	37.5
Hyponatremia	25.5	31.3
Hypertriglyceridemia	25.5	12.5
Cholestasis	14.9	-
Hyperglycemia	19.1	6.3
Hyperkalemia	19.1	6.3
Thrombocytopenia	19.1	-
Hypocalcemia	17	-
Hypercholesterolemia	10.6	6.3
Hypernatremia	6.4	6.3
Hypermagnesemia	4.3	-
Hypophosphatemia	4.3	-
Hypoglycemia	2.1	6.3
Hyperphosphatemia	2.1	-
	n= 56	n= 65

The mortality was of 11% in the EN vs 32% in the PN.

## Conclusion:

There was not any change in the weight during the nutritional support, independent from type of nutrition (EN/PN) and in both the lymphocyte count improved. Both EN y PN are appropriate, however, EN presents less metabolic complications.