

IMPLANTATION OF A PERIOPERATIVE NUTRITIONAL SUPPORT PROGRAMME FOR PATIENTS SCHEDULED FOR MAJOR ELECTIVE LOWER GASTROINTESTINAL SURGERY

G. Mercadal¹, J. Lluch¹, I. Blasco¹, R. Romero¹, F. Alcaide², F. Garcia Olives²

¹Hospital Mateu Orfila, Pharmacy, Maó, Spain; ²Hospital Mateu Orfila, General and Digestive Surgery, Mahon, Spain

INTRODUCTION AND OBJECTIVES

Background

Malnutrition is associated with high postoperative morbidity and mortality rates.

Purpose

This pilot study evaluated the effectiveness of a perioperative nutritional support program for patients who were about to undergo major elective lower gastrointestinal surgery.

MATERIAL AND METHODS

A high-calorie/high-protein enteral formula was administered Perioperatively to the group of patients at nutritional risk/with malnutrition (NR/MN), who were detected with the Mini Nutritional Assessment (MNA) test.

In order to assess the effectiveness of the preoperative nutritional intervention, we collect mortality, length of stay, re-entry, gastrointestinal complications after surgery, clinical complications (infections, sepsis, hyperglycaemia, renal failure, intestinal failure, fistula). The results were compared to a comparable (type of surgery, demographic and anthropometric data) retrospective control group.

RESULTS

63 patients were studied. Statistically-significant differences were found between the prospective NR/MN supplemented group and the retrospective NR/MN non supplemented group in: wound infection (0% vs 24,6%; p= 0,001), hyperglycaemia (32,6% vs 59,6%; p= 0,001), death in hospital (4,7% vs 14,0%; p= 0,008), length of hospital stay (9,86 days vs 13,54; p= 0,006), time in ICU (0,55 days vs 3,21; p= 0,037) and administration of TPN (1,67 days vs 6,78; p= 0,000).

Table 1. Automated nutritional filter (FANBAL)

Parameters	Normal	Slight	Moderate	Serious
Albumin g/dl or total protein g/dl or prealbumin mg/dl	≥3.5 >6.4 >18(0)	3-3,49 5-6,3 15-17,9 (2)	2.50-2.99 4-4.9 10-14.9 (4)	<2,5 < 4 < 10 (6)
Cholesterol mg/dl	> 180 (0)	140-179 (1)	100-139 (2)	< 100 (3)
Lymphocytes (%)	> 17 (0)	12-16.9 (1)	8-11,9 (2)	<8 (3)
Total points	0-1	2-4	5-8	9-12
Malnutrition alert		Slight	Moderate	Serious

Table 2. Demographic and anthropometric variables (n=63)

Group 1: Prospective well nourished unsupplemented
Group 2: Prospective with nutritional risk/malnutrition supplemented
Group 3: Retrospective with nutritional risk/malnutrition unsupplemented

Parameters	GROUP 1 (Media ±SD)	GROUP 2 (Media ±SD)	GROUP 3 (Media ±SD)
Age	68.85 ±10,52	66.15 ±12,94	69.77 ±13,92
Current weight	76.52 ±13,35	74.11 ±19,63	66.35 ±11,92
Usual weight	79.39 ±13,16	81.14 ±26,00	68.42 ±11,62
Body Mass Index	26.88 ±4,62	26.28 ± 7,06	25.13 ± 4,23

Table 3. Type digestive surgery

Surgery	Group 1 (n= 25)	Group 2 (n= 15)	Group 3 (n= 23)	Total
Hemicolectomy	19 (76%)	6 (40%)	13 (56.5%)	38 (60.32%)
Bowel resection	0	2 (13.33%)	0	2 (3.18%)
Laparotomy	1 (4%)	0	0	1 (1.59%)
Colostomy	2 (8%)	2 (13.33%)	3 (13.04%)	7 (11.11%)
Gastrectomy	0	1 (6.66%)	3 (13.04%)	4 (6.35%)
Ileostomy	2 (8%)	3 (20%)	3 (13.04%)	8 (12.7%)
Other digestive surgery	1 (4%)	1 (6.66%)	1 (4.35%)	3 (4.76%)

Data are given as mean (SD) or number of patients (%)

Table 4. Morbidity and mortality variables

	Group 2 Prospective with nutritional risk/malnutrition supplemented	Group 3 Retrospective with nutritional risk/malnutrition unsupplemented	P- Value
Intestinal Failure	3 (7.0%)	6 (10.5%)	0.575
Fistula	0 (0%)	3 (5.3%)	0.305
Renal failure	3 (7.0%)	8 (14.0%)	0.235
Respiratory tract. infection	3 (7.0%)	9 (15.8%)	0.134
Urinary infection	0 (0%)	3 (5.3%)	0.070
Wound infection	0 (0%)	14 (24.6%)	0.001
Hyperglycemia	14 (32.6%)	34 (59.6%)	0.001
Death	2 (4.7%)	8 (14.0%)	0.008
Intolerance diet	3 (7.0%)	9 (15.8%)	0.237
Vomit	3 (7.0%)	15 (26.3%)	0.017
Diarrhea	12 (27.9%)	11 (19.3%)	0.562
Sepsis	0 (0%)	3 (5.3%)	0.136
Days of parenteral nutrition	1,67 (± 3.44)	6,78 (± 6.07)	0.000
Days of ICU stay	0,55 (± 1.80)	3,21 (± 8.07)	0.037
Hospital stay	9,86 (±3.13)	13,54 (±8.06)	0.006

Data are given as mean (SD) or number of patients (%)

CONCLUSIONS Postoperative progress was found to be better in the group of NR/MN patients supplemented preoperatively with an enteral nutrition formula.