

IMPACT OF A MULTIDISCIPLINARY INTERVENTION PROGRAM ON QUALITY AND SAFETY OF PARENTERAL NUTRITION

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Background: Parenteral nutrition is a life-saving therapy but it is associated with complications

Purpose: Describe the results of a monitoring and intervention program (MIP) in patients with total parenteral nutrition (TPN)

Material and methods

Patients with TNP were selected between May and June, the year before and after MIP implementation. MIP was carried out by a nutritionist a pharmacist and a hospital pharmacy resident. MIP involved:

- Patient nutritional evaluation (nutritional history, anthropometry and biochemical markers)
- Daily monitoring of vital signs and glycemia
- Complete analytical control (weekly, at the beginning and at the end of TPN) including GOT-GPT, GGT, alkaline phosphatase, triglyceride, albumin, prealbumin and electrolytes)
- Management of TPN complications
- Elaboration of a nutritional report in the patient clinical history

Results

1. Quality variables before and after MIP implementation (Group 1 and Group 2, respectively)

Variable	Group 1 (n=24)	Group 2 (n= 38)	p
Patients with TPN <7 days	67%	22%	0,001
Patients with nutritional evaluation	0%	100%	0,000
Patients with daily monitoring of vital signs	0%	100%	0,000
Patients with complete analytical control	4%	79%	0,001
Patients with nutritional report in the clinical history	0%	100%	0,000
Patients with individualized calculation of requirements in TNP	0%	100%	0,000

* Group 1 did not have any kind of monitoring

2. Nutritional support team monitoring in group 2 in terms of safety

Variable	Patients (%)
Triglyceride > 400mg/dl	0%
Glycemia > 140 mg/dl	34%
Hepatic dysfunction related to TPN*	26%

*Patients with hepatic dysfunction prior to TPN were excluded

3. Nutritional support team interventions in group 2

Intervention	Patients (%)
Addition of insulin in TPN	34%
Addition of thiamine in TPN	34%
TPN electrolyte composition adjustment as a function of analitical values	100%
Patients with hepatic dysfunction TPN-related	26%
Cyclic TPN	20%
Addition of Taurine in TPN	10%
Patients with hepatic dysfunction prior to TPN	27%
Cyclic TPN	50%
Addition of Taurine in TPN	75%

4. Results obtained after nutritional support team interventions in group 2

Results	Patients (%)
Glycemia >140 mg/dl solved	100%
Hepatic dysfunction related to TPN solved*	50%
Refeeding syndrome	0%
Patients with increase of albumin values	66%
Patients with increase of prealbumin values	88%

*Patients with hepatic dysfunction prior to TPN were excluded

Conclusion: the implementation of MIP improves the quality, safety and efficacy of TPN. The use of appropriate indicators has led to quantify the benefit provided by MIP. This study shows the importance of multidisciplinary nutritional teams work and the role of the pharmacist in them.