

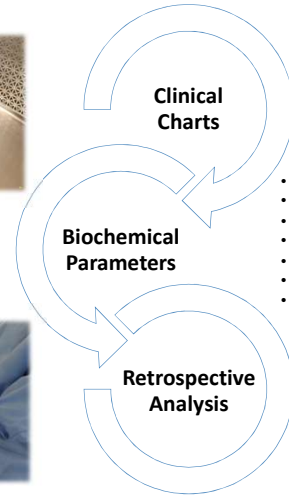
EVALUATION AND MONITORING OF BIOCHEMICAL PARAMETERS IN PATIENTS ON PARENTERAL NUTRITION

INTRODUCTION

Nutritional support by parenteral route aims to prevent and recover nutritional deficits whenever enteral nutrition is insufficient or contraindicated. Caloric requirements must be calculated according to the degree of metabolic stress, percentage of ideal weight and extent of intestinal failure. During parenteral nutrition (PN) complications such as hydroelectrolyte and metabolic imbalance may occur (e.g. refeeding syndrome), which increase morbidity and mortality among patients.

The aim of this study is monitoring the effectiveness of the protocol established in 2006 that provides for the PN onset within 72h with caloric restriction (in the first 24h starts with 50% of caloric needs, in 48h with 75%, and in 72h and following with 100%), as well as evaluating compliance with the recommendations of ASPEN/ESPEN - PN guidelines¹⁻³.

METHODS



- Albumin,
- Total protein,
- C-reactive protein (CRP),
- Serum creatinine (Cr),
- Potassium,
- Phosphate,
- Magnesium.

RESULTS

Forty patients (14 women and 26 men) were analyzed (**Figure 1**) in the period of April to August 2021 (72 ± 12 years). The majority of patients were in Surgery Ward (78% patients). PN bags administered: 82% 1600kcal, 13% 2200kcal and 5% 1400kcal. Gastric neoplasms and peritonitis were the main diagnoses associated with NP (**Figure 2**). The onset average of NP administration was 9 ± 7 days. All patients showed high CRP ($>5\text{mg/dl}$), low total protein ($<6.6\text{g/dl}$) and 85% of patients showed hypoalbuminemia at onset of PN (**Figure 3**). Although, a daily analyzes of the recommended electrolytes were not performed, it was observed that 20% developed hypokalemia, 18% hypophosphatemia and 8% hypomagnesaemia (**Figure 4**). No refeeding syndrome was diagnosed in the studied sample.

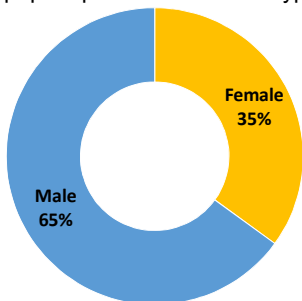


Figure 1. Sex distribution.

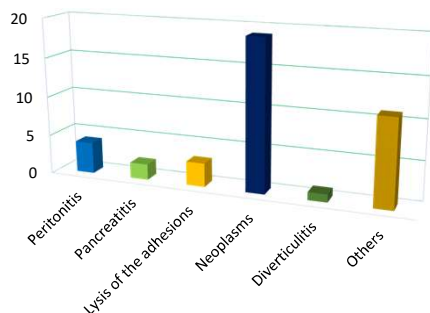


Figure 2. Diagnosis of the patients under study.

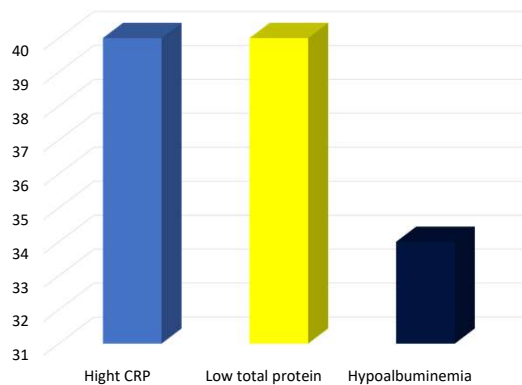


Figure 3. Number of patients with alterations in biochemistry parameters at onset of PN.

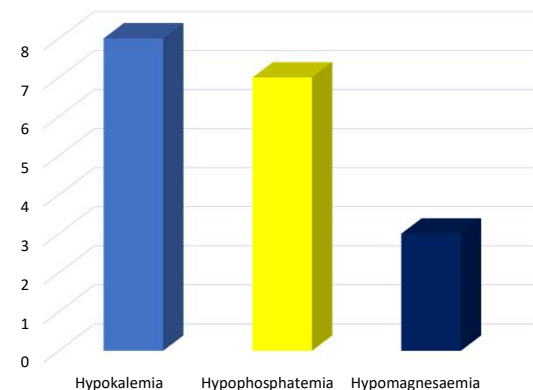


Figure 4. Number of patients that developed hypokalemia, hypophosphatemia and hypomagnesaemia.

CONCLUSIONS

The start of 72 h PN protocol with caloric restriction allowed to avoid the refeeding syndrome, which usually appears within the first 7 days after the onset of PN. The compliance of ESPEN/ASPEN guidelines for daily monitoring of electrolytes was not observed for all patients. So, it will be propose reinforce of pharmaceutical interventions, as well as developing together with the clinical team, a monitoring protocol for patients under PN.

[1] Singer, P. *et al*, ESPEN guideline on clinical nutrition in the intensive care unit, *Clinical Nutrition*. 2019, 38, 48-79.

[2] Weimann, A. *et al*, ESPEN guideline: Clinical nutrition in surgery, *Clinical Nutrition*. 2017, 36, 623-650.

[3] Silva, J. *et al*, ASPEN Consensus Recommendations for Refeeding Syndrome, *Nutrition in Clinical Practice*. 2020, 35(2), 178-195.