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ORIGINAL ARTICLE

Pharmaceutical intervention with parenteral nutrition☆

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KEYWORDS
Pharmacist intervention;
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Abstract
Objective: Description and analysis of pharmaceutical interventions for patients with parenteral nutrition and an assessment of the degree of acceptance.
Method: Prospective six-month study. Design of a data collection sheet (with personal data, the indication for parenteral nutrition, hospital area, nutrition type, time and type of intervention, type of notification, acceptance) for recording interventions carried out based on normal activities: complete review of pharmacotherapy and clinical history.
Results: A total of 265 interventions were carried out during the study period (1.5 interventions/day) with a mean of 2.1 interventions/patient. The overall degree of acceptance was 83.77%; significant differences were found between type of communication for the intervention (oral and/or written) and the degree of acceptance.
Conclusions: Adding a pharmacist to the care team permits direct intervention in partnership with the doctor, and it is an effective method for preventing and resolving the complications, generally metabolic, that are associated with parenteral nutrition. Using this process for resolving medication-related problems in hospitalised patients, principally in surgical areas, is an addition to the pharmacist's activities in the area of nutritional support.

PALABRAS CLAVE
Intervención farmacéutica;
Nutrición parenteral;
Aceptación

Intervención farmacéutica en el ámbito de la nutrición parenteral

Resumen
Objetivo: Descripción y análisis de las intervenciones farmacéuticas realizadas en el ámbito de la nutrición parenteral (NP) y valoración del grado de aceptación.

☆This study has been presented in part at the LIII Congreso Nacional de la Sociedad Española de Farmacia Hospitalaria held in Valencia from 21 to 24 October 2008.

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Método: Estudio prospectivo de 6 meses. Se diseñó una hoja de recogida de datos (datos personales, indicación de NP, sala de hospitalización, tipo de nutrición, momento y tipo de intervención, modo de notificación y aceptación) en la que se registraron las intervenciones realizadas a partir de la actividad diaria: revisión completa de la farmacoterapia y de la historia clínica.
Resultados: Se realizaron un total de 265 intervenciones en el período de estudio (1,5 intervenciones/día) con una media de 2,1 intervenciones/paciente. El grado global de aceptación fue del 83,77%, fueron significativas las diferencias encontradas entre el tipo de comunicación de la intervención (oral y/o escrita) y el grado de aceptación.
Conclusiones: La integración del farmacéutico en el equipo asistencial permite una intervención directa con el médico, y es un método eficaz para la prevención y resolución de complicaciones asociadas a la NP, principalmente de tipo metabólico.Utilizar este proceso para resolver problemas relacionados con la medicación en los pacientes ingresados, principalmente en salas quirúrgicas, proporciona una calidad añadida a la actividad del farmacéutico en el área del soporte nutricional.

Introduction

Pharmaceutical care, understood to mean the responsible provision of pharmacotherapy for the purpose of obtaining specific results that improve patients' quality of life,[1] is particularly relevant when it comes to parenteral nutrition (PN), considering the clinical nature of this task among the pharmacist's activities. Therefore, the field of artificial nutrition presents one of the best possibilities for a pharmacist to participate as part of a multidisciplinary team and contribute to more effective, safer pharmacotherapy by detecting and resolving medication errors and errors related to nutrition itself.[2]

A pharmacist intervention (PI) is understood to mean any action undertaken by the pharmacist in order to solve a potential or current medication and nutrition-related problem arising from a patient's care needs.[3] The purpose of this study is to complete a description and analysis of the PIs performed in the area of PN, and to evaluate their degree of acceptance and the factors that may affect them.

Method

For the purpose of recording PIs in the area of PN, we designed a six-month prospective study in a tertiary hospital with 850 beds. We included all patients on PN treatment who were monitored by the PN team in the pharmacy department. These patients were in surgical units (general and digestive tract surgery, thoracic and urological surgery); medical units (gastroenterology, hepatology, internal medicine, nephrology, dermatology and neurology) and intensive care (ICU) and sub-intensive care digestive, respiratory and nephrology units.

As a daily activity, we revised pharmacotherapy and fluid therapy, clinical history and laboratory analyses, and evaluated the indication of PN and the nutritional state of patients observed in the study. A data collection form was designed (Figure 1). The following was recorded for each intervention:

1. Demographic data and date of intervention.
2. Unit type: medical, surgical or ICU.
3. Principal diagnosis and indication for PN.
4. Time at which the PI is undertaken with respect to when PN was prescribed: beginning, follow-up or end.
5. PN Type: Total PN (TPN) or peripheral PN (PPN).
6. Type of PI undertaken:
   I. Indication of nutrition: modification to PN type, change to enteral nutrition or oral diet, delay start of nutrition, continue PN or end PN.
   II. Venous accesses and catheters: changing the central or peripheral lines, and selecting the type of route.
   III. Modifying fluid therapy: type of FT prior to the intervention, motive of the intervention and proposed change of FT.
   IV. Modification to electrolyte input: type of electrolyte involved, laboratory test result justifying the intervention and prior level received.
   V. Laboratory test monitoring: request for laboratory testing prior to starting PN, follow-up analysis, capillary glycaemia test and/or diuresis test.
   VI. Medication-related problems (MRPs) according to the adjustment of the MRP classification system based on Jarabo's criteria[4]:
      i. Insulin: add to treatment, adjust sliding-scale or set dose according to capillary glycaemia.
      ii. Propofol: change concentration from 1% to 2% (to reduce the amount of lipids received) depending on the serum triglyceride level.
      iii. Other pharmacotherapy actions.
7. Type of notification given: oral (doctor and/or nursing staff) and/or written (clinical history and/or treatment chart and/or hospital computer programme).
8. Acceptance: yes, no or not applicable.
9. Remarks: other data of interest.

The PIs were recommendations made to doctors or to nursing staff. Under no circumstances did the pharmacist directly manipulate the pharmacotherapeutic devices. These PIs were evaluated the day after they were performed and entered in a database (Microsoft Access®) created for