The Nutritional Status of Patients With Colorectal Cancer Undergoing Chemotherapy

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Abstract

Objective: Determine the nutritional status of patients with colorectal cancer undergoing chemotherapy and assess how many patients could benefit from nutrition facts.

Method: Patients of both sexes aged over the age of 18 with colorectal cancer who were receiving chemotherapy between March and April 2005 were included. The nutritional status of these patients was evaluated using the method "Patient-Generated Subjective Global Assessment" (PG-SGA). According to this questionnaire, the patients were classified in 1 of 4 levels of intervention: *a)* no intervention required; *b)* nutrition education; *c)* nutritional intervention; *d)* critical intervention, and into 1 of 3 nutritional status (well-nourished, moderately malnourished, or severely malnourished).

Results: All the patients with colorectal cancer receiving chemotherapy during the 2 months indicated (33 patients): 9.1% were in stage II of the disease, 21.2% in stage III, and 69.7% in stage IV. The 69.7% was receiving cytostatics associated with moderate risk of malnutrition while 30.3% received low-risk chemotherapy. The 57.6% of the patients were well-nourished. However, the intervention was critical in 42.4% of the patients.

Conclusions: The majority of the patients studied require some type of nutritional act, although not all of them suffer from malnutrition.

Keywords: Subjective global assessment. Nutrition assessment. Malnutrition and cancer. Oncological malnutrition. Oncological nutritional status assessment.

Estado nutricional de pacientes con cáncer colorrectal en tratamiento con quimioterapia

Objetivo: Determinar el estado nutricional de los pacientes con cáncer colorrectal en tratamiento con quimioterapia y valorar cuántos pacientes podrían beneficiarse de recomendaciones nutricionales.

Método: Se incluyeron pacientes de ambos sexos, mayores de 18 años, con cáncer colorrectal que estaban recibiendo quimioterapia entre marzo y abril de 2005. Se valoró su estado nutricional mediante el método "Valoración Global Subjetiva Generada por el Paciente (PG-SGA). Según este cuestionario, los pacientes fueron clasificados en uno de los cuatro niveles de intervención: *a)* no requiere intervención; *b)* educación nutricional; *c)* intervención nutricional, y *d)* intervención crítica y en uno de los tres estados de nutrición (bien nutrido, moderadamente malnutrido o severamente malnutrido).

Resultados: Se valoraron todos los pacientes con cáncer colorrectal que recibieron quimioterapia en los dos meses señalados (33 pacientes): el 9,1% presentaba estadio II de la enfermedad; el 21,2%, estadio III, y el 69,7%, estadio IV; el 69,7% estaba recibiendo citostáticos asociados con riesgo moderado de desnutrición mientras que el 30,3% recibía quimioterapia de bajo riesgo. El 57,6% de los pacientes se encontraba bien nutrido. No obstante, la intervención fue crítica en el 42,4% de los pacientes.

Conclusiones: La mayoría de los pacientes estudiados requieren algún tipo de actuación nutricional, aunque no todos presentan malnutrición.

Palabras clave: Valoración global subjetiva generada por el paciente. Valoración nutricional. Malnutrición y cáncer. Malnutrición oncológica. Valoración del estado nutricional oncológico.

INTRODUCTION

The inability to maintain good nutritional status is a very frequent problem among oncology patients, which generally lead to malnutrition.[1] Early nutrition examination and nutricional assessment can identify problems to help patients increase or

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maintain weight, improve their response to treatment, and reduce complications.[1,2]

Optimum nutritional care requires multidisciplinary work in a protocolised therapeutic programme. The nutritional status assessment must be carried out on each patient at the beginning and during the treatment.[3]

The purpose of this work is to determine the percentage of patients with colorectal cancer undergoing chemotherapy who are malnourished and assess how many patients could benefit from nutrition facts.

METHOD

All the patients diagnosed with colorectal cancer receiving chemotherapy were identified (stages II, III, and IV) during the months of March and April 2005. Patients of both sexes over the age of 18 were selected, and those for whom it was impossible to respond to a questionnaire with subjective answers or who refused to do so were excluded.

The patients underwent a complete nutritional assessment using the method "Patient-Generated Subjective Global Assessment (PG-SGA)" (Ottery, 1996). It consists of a multiparametric questionnaire that correlates well with the results that would be obtained in a measured nutritional assessment. The said method is made up of a form that includes a physical examination, (measurement of anthropometric data and the presence or absence of oedema, or ascites), medical data (stage of the disease, metabolic demand, and concomitant diseases), and a personal assessment of the patient. This assessment includes: the evolution of the patient's weight during recent weeks and months, changes in the ingestion and type of food, symptoms related to food, and variations in functional capacity.

The questionnaires in the PG-SGA were asked by the pharmacists and were addressed to both the patients and their doctors. The questionnaire consists of several answer options and each of them is associated with a specific score. After obtaining the total score, the patient is assigned to 1 of 4 levels of nutritional intervention: 0-2 points: no intervention required; 2-3 points: requires nutrition education; 4-8 points: requires nutritional intervention; ≥9 points: a critical need to improve the management of symptoms.

At the end of the assessment, based on the data on the general status and signs of disease, each patient was assigned to a malnutrition level[1] (well-nourished, moderately malnourished, and severely malnourished) and based on this, the need for nutritional support as well as the type of nutrition to use, (oral or artificial) were decided.

RESULTS

None of the patients identified refused to answer the questionnaire. A total of 33 patients were analysed, 48.5% of whom were women. The average age was 69 years (interquartile range, 25 to 57.5 years and 75 to 76 years). The risk factors[5] involved in the malnutrition were analysed: stage of the disease and treatment administered. None of the patients received high-risk chemotherapy: bone marrow transplantation, concomitant radiochemotherapy for head-neck, and esophageal cancers. The 69.7% of the patients were receiving cytostatics associated with a moderate risk of malnutrition: platinum derivatives, podophyllum derivatives, anthracyclines, dacarbazine, cyclophosphamide, ifosfamide, irinotecan, topotecan, taxanes, 5-fluorouracil infusion. The 30.3% of patients received low-risk chemotherapy: vinca derivatives, low-dose methotrexate, 5-fluorouracil in bolus, tegafur, melfalan, chlorambucil, gemcitabine, temozolomide. The 9.1% of the patients were in stage II of the disease, 21.2% in stage III, and 69.7% were in stage IV. The 57.6% of the patients were well-nourished, 30.3% were moderately malnourished, and 12.1% were severely malnourished.

The 3% of the patients required no intervention. Health education was offered to 24.2% of them. The pharmacist carried out nutritional interventions in 30.3% of the patients, which consisted of giving them leaflets with specific nutrition facts to control the symptoms, a high protein diet, or supplements. A critical interventions was required in 42.4% of patients by means of a recommendation for enteral or parenteral nutrition.

DISCUSSION

The study is carried out using the PG-SGA method, as it is a method that correlates very well with objective nutritional criteria.[3] This is a reproducible, easy-to-use, cheap, and non-invasive method,[6] and would therefore be a simple method to introduce in the Oncology Service. According to some authors, it should be the tool of choice for nutritional assessment in patients with cancer.[7] It is a good screening method to identify which patients will benefit most from the interventions. It also provides data on the possible causes, which contributes to the preparation of individualised recommendations[8] by a multidisciplinary unit in which a pharmacist has a role to play.

The study was performed among patients with colorectal cancer, which is not a very cachectic tumor,[2] a fact that concurs with the small number of patients suffering from some kind of malnutrition in our study. However, as is concluded, the number of patients able to benefit from routine nutritional assessment would be very high.

In the study by Grutsch[9] and Gupta[10] the prognostic value of SGA assessment in patients with advanced colorectal cancer was seen. In this study patients in stages II, III, and IV of the disease were included. This was done as a way of quickly identifying patients with malnutrition rather than as a prognostic assessment of the disease.

The number of patients in this study is low and a larger population of patients should be studied, which will enable us to establish whether this should be done routinely with all patients with

colorectal cancer or whether any of the subgroups of patients (according to the stage of the disease, chemotherapy, and/or radiotherapy received...) are more likely to benefit from this type of interventions.

It would also be appropriate to perform nutritional assessment on other type of more cachectic tumors to be able to make a comparison between tumors.

One limitation of the study is the short follow-up period. Many of the patients could have lost weight due to the tumor and after surgery they go back to their usual weight. Other factors that can also have an influence and which were not taken into consideration were how long the patients had undergone antineoplastic treatment or the time since surgery (due to weight loss during the postoperative period). We would also add the fact that given that colorectal cancer is more frequent in elderly patients, which is a group of the population at greater risk of malnutrition, and it is therefore difficult to ascertain the influence of this factor on the percentage of patients with malnutrition.

In the study by Gómez Candela and colleagues the patients are classified according to the diagnosis and antineoplastic treatment received. In the results, the level of malnutrition is measured according to the type of treatment (curative or palliative) according to the nutritional risk of the antineoplastic treatment received and with respect to the PG-SGA. However, no relationship between the risk of malnutrition has been associated with each diagnostic.[11]

In a study conducted among outpatients[12] who also received radiotherapy, the PG-SGA is also proposed as a predictive measure of changes in quality of life. The Davies assessment suggests it could be a cost-effective intervention given its role in the reduction of hospital stay. However, more studies need to be conducted on this point.[13] It would also be appropriate to investigate the consequences of the nutritional intervention carried out in these patients by way of a later re-evaluation.

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