



Evaluation of the nutritional profile of patients with total laryngectomy



Clara Inés Flórez Almonacid^{a,b,c,*}, Alfredo Jurado Ramos^{c,d,e},
María Aurora Rodríguez Borrego^{c,f}

^a Research, Innovation and Care Unit, Department of Nursing, Reina Sofia University Hospital, Cordoba, Spain

^b School of Nursing, University of Cordoba, Spain

^c Institute of Biomedical Research Maimonides (IMIBIC), Reina Sofia University Hospital and University of Córdoba, Spain

^d Department of Otolaryngology, Reina Sofia University Hospital, Cordoba, Spain

^e Faculty of Medicine, University of Cordoba, Spain

^f Nursing Department, School of Nursing, University of Cordoba, Spain

S U M M A R Y

Keywords:

Laryngectomy
Laryngeal cancer
Nutritional profile
Anthropometric parameters
Malnutrition
C-reactive protein

Background and aims: Nursing care requires knowledge of the best possible care techniques and plays a significant role in the nutritional status of cancer patients. The main purpose was assessing the changes in the nutritional profile between the preoperative and postoperative periods for patients with laryngeal cancer and their relationship to pharyngocutaneous fistula.

Methods: Observational study of 40 patients. During April 2010 and December 2011 nutritional risk assessment on admission and evaluation of nutritional parameters on admission (t_0), at 7 (t_1) and 14 (t_2) days were carried out. Statistical techniques for longitudinal (or repeated) data and Generalised Estimating Equations models (GEE) were used.

Results: On admission, 37.5% of patients had reduced their usual weight by a percentage greater than or equal to 5%, and had a moderate risk of suffering malnutrition; of the patients, 62.5% for [t_0 , t_1] and 80% for [t_1 , t_2] reduced their weight by a percentage greater than or equal to 2%. The average of weight loss was 4.32 (SD 2.20 [3.62–5.03]) kg for [t_0 , t_2]. Three quarters of these had C-reactive protein levels over 5 mg/l. Weight loss was associated with decreased caloric intake at 7 and 14 days, ($r = 0.05$, $p = 0.031$ ($r = 0.438$, $p = 0.005$) respectively. Decreased caloric intake was associated with a feeling of satiety. 27.5 percent of the patients had a pharyngocutaneous fistula, which was significantly associated with the percentage of weight loss (p -value = 0.032) and lower levels of albumin and prealbumin, with a mean difference of 0.36 g/dl ($p = 0.014$) and 7.65 mg/dl ($p = 0.005$) and 0.68 g/dl ($p = 0.0001$) respectively.

Conclusion: Patients lose weight before and during treatment and this weight loss is a poor prognosis for the development of pharyngocutaneous fistula in patients with total laryngectomy.

© 2013 European Society for Clinical Nutrition and Metabolism. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Laryngeal cancer patients are at risk of severe nutritional exhaustion due to several factors, such as lifestyles overusing

alcohol or tobacco and bad eating habits. The location of the tumour often results in dysphagia and odynophagia with significant reduction in food intake. The level of malnutrition could be thought to be partly caused by the location and size of the tumour, which leads to secondary anorexia resulting from chronic pain.¹

Up to one third of the patients with head and neck cancer (HNC) suffer severe malnutrition and 50% suffer some degree of malnutrition, which has been linked to postoperative complications and a worse response to treatment, and even a higher rate of tumour recurrence. Therefore, HNC patients, even with a successful cancer treatment, may die from malnutrition.²

Unintentional weight loss percentages of HNC patients higher than 2% weekly or than 5% in a month are a reliable sign of

DOI of original articles: <http://dx.doi.org/10.1016/j.clnme.2013.06.002>, <http://dx.doi.org/10.1016/j.clnme.2013.07.003>.

* Corresponding author. Outpatients Building, 4th Floor, Reina Sofia University Hospital, Avd. Menéndez Pidal s/n, 14004 Córdoba. Spain. Tel.: +34 620 878 155 (mobile), +34 957 0112 38.

E-mail addresses: cifa@mundivia.es, clarai.florez.sspa@juntadeandalucia.es (C.I. Flórez Almonacid), md1juraa@uco.es (A. Jurado Ramos), en1robom@uco.es (M.A. Rodríguez Borrego).

malnutrition, which is a large contributor to morbidity during and after treatment, whether surgical, radiotherapy or chemotherapy.³

Nevertheless, the importance of the nutritional status of patients with surgical treatment for laryngeal cancer is presently under examination.⁴ Some recent studies have found that nutritional indices such as Body Mass Index (BMI) and the total number of lymphocytes are lower in cancer patients than in normal subjects.^{5,6}

Other studies show that weight loss is the best parameter to evaluate the nutritional status of surgical HNC.⁷ Despite this, the weight loss of HNC patients is rarely perceived in everyday practice.⁸ Another fact to highlight is the high incidence of postoperative complications in laryngeal cancer patients, such as pharyngocutaneous fistulas with a prevalence rate between 3.5% and 65%, anastomotic dehiscence and wound infections.⁹ However, the available studies have not found a link between the onset of pharyngostome and the patient's nutritional status.¹⁰ Recognition and treatment of disorders associated with malnutrition are essential to ensure the best quality of life for laryngeal cancer patients. Severe forms of malnutrition are associated with depression in cellular immunity, which puts patients at an increasing risk of postoperative sepsis.¹¹

This, in turn, might undermine the success of clinical and surgical therapies, adds costs to hospital care and increases morbidity.^{12,13} While there are available data describing the nutritional status and postoperative complications in patients with head and neck cancer, just a few studies consider nutritional parameters in patients with total laryngectomy.¹⁴ The present study aims at evaluating changes in the nutritional parameters of laryngeal cancer patients with total laryngectomy between the preoperative and postoperative periods and their connection with the presence of pharyngocutaneous fistula.

2. Material and methods

2.1. Design and sampling

Observational study of all consecutive patients with total laryngectomy whose final diagnosis was T4 squamous cell carcinoma during their stay in the otolaryngology clinical management unit at a level 3° Hospital, in the Autonomous Community of Andalusia, between April 2010 and December 2011.

2.2. Variables

Variables studied included: the assessment of nutritional risk by NRS-2002,¹⁵ which classifies patients according to the degree of malnutrition and the severity of the underlying disease. This includes two phases, and if the score is greater than or equal to 3, the patient is considered at risk of malnutrition.

Nutritional assessment [anthropometric parameters: Nutritional profile [Body Mass Index (BMI), weight loss percentage, Arm Muscle Circumference (AMC), Triceps skinfold thickness (TSF), biochemical parameter prognostics: Albumin, Prealbumin,¹⁶ C-reactive protein (CRP), glycaemia and leukocytes.¹⁷ Complications [Pharyngocutaneous fistula, feeling of satiety saciedad], basal energy requirement, Caloric and nitrogen ingestion at 7 and 14 days and demographic data, [Gender, age, hospital stay] (Table 1).

A nutritional profile was built for each patient, including the anthropometric and biochemical parameters upon their admission (t_0), 7 (t_1) and 14 (t_2) days after surgical intervention.

2.3. Procedure

An interview with the patient took place on admission day to provide them with a detailed explanation of the purpose of this

study and to take preoperative measurements. The patient's height was measured when standing, to the nearest cm; all patients were measured in pyjamas, with no shoes and after emptying their bladder.

The measurement of the triceps skinfold thickness (TSF) was made with an instrument for measuring the panniculus adiposus with a skinfold caliper.¹⁹ Measurements were made at the mid-point between the clavicular acromion and the olecranon, where the arm circumference was measured with a tape measure. The triceps skinfold thickness was measured 3 times, using the average of the three measurements for sampling purposes.

The basal energy requirement was estimated using the equation proposed by Blackburn et al. (1989) from the measurement of urinary creatinine excretion in 24 h. $GER = 0.488 (X) + 954$, where (X) is urinary creatinine excretion in 24 h, expressed in milligrams.¹⁷ The protein requirement was estimated at 1.5 g protein per kg of weight.

2.4. Ethical procedures

The research protocol was approved by the Research Ethics Committee of the hospital. Each patient was informed about the purpose, methods and strict confidentiality guarantees, and subsequently signed a form giving their written consent.

2.5. Statistical analysis

The qualitative characteristics are described by frequencies and percentages, and the quantitative characteristics are described by their minimum and maximum average standard deviation (SD). Statistical techniques for longitudinal (or repeated) data were used in the analysis of anthropometric and biochemical variables. The quantitative variables are described by the averages of the differences between the several periods in the study (preoperative period, 7 and 14 days postoperatively) and their standard deviations.

Generalised Estimating Equations models (GEE), adjusted for age and for the fact of whether the patient had a fistula or not, were used to study the connection between the anthropometric and biochemical variables in the different periods of the study. They were presented with: 95% confidence intervals with sequential Bonferroni correction for multiple comparisons for adjusted differences, as well as estimates of parameters for the models. These models enable us to study the differences in time and relations between variables when the observations are related. For this purpose, a correlation matrix with no particular structure was derived from the answers. It was assumed that the quantitative measurements resulted from a normal distribution. Once the models had been adjusted, the assumptions were checked using the resulting residuals, verifying that the models used were appropriate to analyse the data. In particular, the normality of the residuals was checked in every period.

3. Results

A total of 40 patients completed the study, of whom 95% were men. The patients' average age was 61.73 years (SD = 11.08), and the maximum age was 82 years and the minimum, 42 years. The average number of days they stayed at the hospital was 18.55 (SD = 4.88), with a minimum of 14 days and a maximum of 38. Table 2 shows a description of the anthropometric and biochemical variables at the beginning of the study (t_0). According to NRS-2002,¹⁸ 37.5% of patients on admission have a moderate risk of suffering malnutrition with a weight loss of over 5%, but after 7 days, the risk of malnutrition with a weight loss over 2% rises to 62.5% and at 14 days, to 75% of the patients.

Download English Version:

<https://daneshyari.com/en/article/2686805>

Download Persian Version:

<https://daneshyari.com/article/2686805>

[Daneshyari.com](https://daneshyari.com)