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„Assessment of the nutritional status of patients with head and neck cancer with special reference to patients requiring home enteral nutrition procedure”

Abstract

Introduction

Head and neck cancer (HNC) is the sixth most common cancer globally. In Poland, about 5,500 to 6,000 cases of HNC have been diagnosed annually for several years. Dysphagia is a common symptom in this cancer and occurs in about 40% of patients, according to Szcześniak et al., dysphagia and neoplastic disease increase the risk of malnutrition. Therefore, assessing nutritional status and screening for dysphagia should be an integral part of the care of patients with head and neck cancer. Nutritional care is also essential because poor nutritional status decreases patients' quality of life, is associated with poorer response to treatment, increases the risk of cancer therapy discontinuation, increases the risk of death, prolongs hospitalization, and increases treatment costs. One of the nutritional therapies used in patients with HNC is enteral nutrition, including home enteral nutrition (HEN).

Analyzes of the incidence of malnutrition in patients with head and neck cancer differ depending on the tool used by the authors. Due to the wide variety of tools used, it is difficult to formulate conclusions and provide guidelines. In 2018, the Global Leadership Initiative on Malnutrition (GLIM) published a recommendation for diagnosing malnutrition in adults. Standardizing the criteria used in research will help in the future development of recommendations.

This dissertation, which is a thematically related series of publications with a total impact factor of 11.438, a total number of ministerial points: 340, consists of two original papers and one paper that is a nonsystematic review of the literature.

Aim

This dissertation aimed to assess the nutritional status of patients with head and neck cancer with particular reference to patients requiring home enteral nutrition procedure.

Specific aims

Publication 1

The study aimed to collect information on screening diagnostic tools for oropharyngeal dysphagia and malnutrition validated in a group of patients with head and neck cancers.

Publication 2

The aim of the study was to determine the relationship between the GLIM-defined malnutrition and the chosen biochemical and immunological parameters in patients with head and neck cancer referred to home enteral nutrition.

Publication 3

In this study, we investigated the impact of nutritional status at the time of qualification for HEN on overall survival in patients with head and neck cancer and the usefulness of selected nutritional indices (BMI, NRI, GNRI and GLIM criteria) as the prognostic factors.

Materials and Methods

Publication 2

The retrospective analysis involved 224 patients with HNC referred for HEN. The following parameters were evaluated: body mass index (BMI), percent weight loss, and laboratory tests (serum albumin, total serum protein, C-reactive protein (CRP), and total lymphocyte count (TLC)). Malnutrition was defined using GLIM-based criteria.

Publication 3

The retrospective survival analysis involved 157 patients with HNC referred to HEN between January 2018 and October 2021. The nutritional status assessment was performed at the qualification for HEN visit. We have analyzed results of body mass index (BMI), Nutritional Risk Index (NRI) for patients <65 years, Geriatric Nutritional Risk Index (GNRI) for patients ≥65 years and malnutrition defined by Global Leadership Initiative on Malnutrition (GLIM).

Results

Publication 2

Based on GLIM criteria, the prevalence of malnutrition was 93.75% (15.18% moderately malnourished, 78.57% severely malnourished). There was a positive correlation between malnutrition based on GLIM criteria, serum albumin, and CRP. In the model assessing the odds of severe malnutrition according to the criteria of GLIM, TLC and CRP had a statistically significant effect on the change in the probability of qualifying a patient to the severe malnutrition group, but the strength of the results was weak.

Publication 3

The mean patient survival was 44.7 weeks, and the median was 23.9 weeks. Patients with low NRI and GNRI scores had a higher death risk (NRI: $p = 0.0229$; GNRI: $p = 0.371$). NRI, GNRI, and malnutrition defined by GLIM were superior to BMI as prognostic markers for survival.

Conclusion

The majority of patients enrolled in the home enteral nutrition procedure are malnourished and most of them are severely malnourished. This suggests that it is essential to identify patients at risk of malnutrition more efficiently so that appropriate and sufficient nutritional management can be implemented.

Our findings suggest that GLIM criteria of malnutrition can be easily applied for groups of patients on home enteral nutrition, but the definition of inflammation criteria should be clarified for patients with head and neck cancer.

Patients with low NRI and GNRI score had increased risk of death. Moreover, NRI, GNRI, and malnutrition defined by GLIM were superior to BMI as prognostic markers for survival. These results suggest that the use of NRI, GNRI, and GLIM criteria could provide useful prognostic information. The survival duration since the qualifying visit for home enteral nutrition suggests that nutritional management should be initiated earlier.