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CONTRIBUTION OF THE NUTRITION SUPPORT TEAM TO THE CLINICAL PROCESS IN INPATIENT WARDS

SERVİS HASTALARINDA NUTRİSYON DESTEK EKİBİNIN KLİNİK SÜRECE KATKISI

Haldun KAR[1] Nihan ACAR[1] Atilla ŞENCAN[2]
Cengiz TAVUSBAY[1] Tayfun ADANIR[3]

[1]Katip Celebi University Faculty of Medicine Ataturk Training and Research Hospital, Department of General Surgery, 35360 Izmir /Turkey

[2]Katip Celebi University Faculty of Medicine Ataturk Training and Research Hospital, Department of Anesthesia and Critical Care

[3]Izmir University of Economics, Medical Park Hospital, Department of Anesthesia and Critical Care

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ÖZ

Giriş: *Malnütrisyonlu hastalar, artmış morbidite ve mortaliteye, uzun hastanede kalış sürelerine ve daha yüksek maliyetlerle ilişkili bakıma sahiptirler. Nurisyon destek ekipleri (NDE) esas olarak doktorlar, diyetisyenler, hemşireler ve eczacılardan oluşan beslenme konusunda eğitimli muldisipliner ekiplerdir. Nutrisyon Destek Ekiplerinin hastane malnutrisyonu ile mücadalede önemli rolleri olduğu bilinmektedir. Bu çalışmada hastanemiz kliniklerinde NDE tarafından beslenme desteği verilen hastalarda, NDE'nin sürece dahil olmasına kadar geçen süre ve bunun mortalite üzerine etkisini araştırmayı amaçladık.*

Gereç ve yöntem: *Bu amaçla cerrahi ve dahiliye kliniklerinde yatan, NDE tarafından değerlendirilip, nutrisyonel tedavileri düzenlenen ve takibi yapılan 80 hasta çalışmaya dahil edildi. Hastaların demografik bilgileri, Nutrition Risk Sreening (NRS) 2002 skorları, malignite varlığı, yandaş hastalığı olup olmadığı, NDE konsultasyon istenme zamanları, hastanede yatış süreleri bağımsız değişkenler, hastalarda gelişen mortalite bağımlı değişken olarak incelendi.*

Bulgular: *Çalışmaya dahil edilen 80 hastadan 13'ünde (%16.25) mortalite gelişti. NRS 2002 skorunun ≥ 3 olması, NDE'den geç konsultasyon istenmesi ve uzun hastanede yatış süresi ile mortalite arasında istatiksel olarak anlamlı bir ilişkili olduğu saptandı.*

Sonuç: *Hastaneye yatışta hastaların nutrisyonel değerlendirmelerinin yapılarak malnutrisyonlu ve/veya malnutrisyon riski taşıyan hastaların saptanıp, bu hastalar için bir beslenme planı oluşturulmalıdır. NDE'leri hastane malnutrisyonu ile mücadalede klinisyene yardımcı olarak hastanın hastanede yatış süresini kısaltıp, survivala pozitif katkı sağlayabilir.*

SUMMARY

Introduction: *Malnourished patients have increased morbidity and mortality, longer hospital stays, and high cost patient care. Nutrition Support Teams (NST) are multidisciplinary teams trained in nutrition, mainly consisting of doctors, dieticians, nurses and pharmacists. It is known that NSTs have an important role in the fight against* *hospital malnutrition. In this study, we aimed to investigate the duration until the involvement of NST in the management of patients who had been receiving nutritional support and its effect on mortality.*

Material and methods: *Eighty hospitalized patients from surgery and internal medicine clinics who were evaluated by NST were included. Nutrition support was planned and the patients were followed-up during the hospital stay. The demographics, Nutrition Risk Sreening (NRS) 2002 scores, presence of malignancy, presence of comorbidities, duration until NST consultation and length of hospital stay were analysed as independent variables and presence of mortality was evaluated as dependent variable.*

Results: *Mortality was detected in 13 (16.25%) of the 80 patients. NRS 2002 score ≥ 3, delayed consultation from NST and long hospital stay were found to be significantly correlated with mortality.*

Conclusion: *Patients with malnutrition or with the risk of malnutrition should be identified by making nutritional assessments at the time of hospitalization, and a nutrition plan should be established for these patients. Nutrition Support Teams can aid the clinicians in the fight against hospital malnutrition, may shorten the hospital stay of the patient and may contribute positively to survival.*

INTRODUCTION

Malnutrition, which is a combination of varying degrees of over or under-nutrition and inflammatory activity, is a subacute or chronic nutritional disorder causing changes in body composition and loss of functions (1). Previous studies have reported that more than 40% of hospitalized patients have risk factors associated with malnutrition, and malnutrition has worsened in approximately 75% of them during the hospital stay (2). Malnourished patients have increased morbidity and mortality, longer hospital stay, and higher costs associated with care (3). Nutritional Support Teams (NST), which have been accepted all over the world since the mid-1970s, have been established in order to accurately identify the patients with malnutrition and / or nutritional risks, determine their nutritional needs, and make appropriate nutritional treatment and management. Nutritional Support Teams are multidisciplinary teams trained in nutrition, mainly consisting of doctors, dieticians, nurses and pharmacists (4, 5). Studies have shown that activities of NST lead to shortened hospital stay, improved nutrition, decreased mortality and complications (6-8).

In this study, we aimed to investigate the duration until the involvement of NST in the management of patients who had been receiving nutritional support and its effect on mortality.

MATERIAL and METHODS

Patients from the inpatient wards of General Surgery and Internal Medicine, who required nutritional support and were consulted with NST during the hospital stay, were included. Medical records of the patients were retrospectively reviewed on our institutional database. The demographics, Nutrition Risk Screening (NRS) 2002 scores (1), presence of malignancy, presence of comorbidities, duration until NST consultation and length of hospital stay (LOS) were analysed as independent variables and presence of mortality was evaluated as dependent variable.

Once the patients were consulted with NST, they were firstly evaluated with NRS 2002. If NRS 2002 score was less than 3 and there was no plan for surgery, no additional nutritional support was given, but the patient was screened once a week during the hospitalization. If NRS 2002 score was ≥ 3 or there was a plan for major surgery, these patients were followed up with a nutritional support plan.

Statistical analyses of Pearson Chi-Square and One Way Anova were used for statistical evaluation of the data. All analyses are performed in SPSS 15.0. For Windows statistics package program was done with 95% confidence. p <0.05 was considered statistically significant. The study was designed and carried out in accordance with the Declaration of Helsinki. This study was conducted with the approval of Katip Çelebi University Clinical Research Ethics Committee (04.03.2021 / 0105).

RESULTS

Among the 80 patients included in the study, the majority were male (71.2%) and the mean age was 58.76 ± 17.2. The demographic information of the patients and their relationship with the prognosis are summarized in Table 1. Accordingly, no statistical correlation was found between demographic results and mortality. Rate of the patients with accompanying comorbidities was 50%. NRS 2002 score was below 3 in 12.5% of the patients. In-hospital mortality rate was 16.25% (n:13). The relations between mortality and the independent variables are summarized in Table 2. A statistically significant correlation was found between mortality and higher NRS 2002 score (≥ 3), later consultation from NST and longer LOS.

DISCUSSION

Malnutrition rates, which have been reported between 20% and 50% at the beginning of hospitalization, have shown to be increased even more during the hospitalization (3). This situation was designated as iatrogenic or hospital malnutrition. Most important causes of iatrogenic malnutrition are disease-related anorexia, gastrointestinal symptoms, decreased chewing or swallowing ability, reduced food intake because of hospital meals, prolonged fasting for tests and treatment, neglect of observance food intake and insufficient assessment of the increased need for metabolism (9, 10).

Table 1. Distribution of prognoses according to demographic characteristics of the cases

	Alive (n/ %) (67/ 83,75)	Died (n/ %) (13/ 16,25)	P value
Age (years)			
(Mean±SD)	57,63±17,55	64,62±17,11	0,191
Sex			
Men	48/84,2	9/15,8	0,860
Women	19/82,6	4/17,4	

Table 2. Distribution of clinical factors affecting mortality

	n	Alive (n/ %)	Died (n/ %)	P value
Age				
<65	49	44/89,8	5/10,2	0,131
≥65	31	23/74,2	8/25,8	
Tumors				
Yes	43	39/90,7	4/9,3	0,126
No	37	28/75,7	9/24,3	
NRS 2002				
<3	10	10/100,0	0/0,0	0,020*
≥3	70	57/81,4	13/18,6	
Duration until NST consultation (Day) (Mean±SD)	80	9,91±5,84	24,62±15,50	0,006*
Comorbidities				
Yes	40	31/77,5	9/22,5	0,225
No	40	36/90,0	4/10,0	
Length of hospital stay (Day) (Mean±SD)	80	26,70±10,45	63,46±63,18	0,000*

*p<0,05 statistically significant

Studies have shown that in cases where malnutrition is not recognized timely and the necessary nutritional support is not provided, complication rate, length of hospital stay and risk of mortality increases (11, 12). Poor wound healing, impaired immunity, break down of muscle to protein catabolism, cardiomyopathy, mucosal atrophy, decreased intestinal barrier function, increased risk of sepsis, apathy and depression are the leading problems (13). Therefore, nutritional therapy is recommended for the malnourished patients by American Society for Parenteral and Enteral Nutrition (ASPEN) and European Society for Parenteral and Enteral Nutrition (ESPEN). It is recommended to conduct the nutritional therapy through a series of procedures. These procedures include nutritional screening, nutritional assessment, establishment of a nutritional care plan, implementation of the plan, patient follow-up, evaluation of the plan, and replanning or discontinuation if necessary. The most serious one among these procedures in nutritional therapy is the close follow-up of the patient. During nutritional support therapy, essential parameters should be measured at appropriate intervals, and documented serially. Thus, the effectiveness of both the provided nutritional support and the treatment of the primary disease are evaluated together. The nutritional care plan should be developed with a multidisciplinary team approach including the patient, caregiver, the patient's doctor(s), dietitians, nurses and pharmacists (6). NSTs were established for this purpose and have become competent teams to implement and develop these procedures.

In current study, all 13 cases resulted with mortality had NRS 2002 score ≥3 and were consulted to NST average 24 days after the first day of hospitalization. On the other hand, among the remaining 67 cases, 81.4% were malnourished were consulted to NST average nine days after the first day of hospitalization. This result reveals that the nutritional risk screening of the patient in the early period, creating a nutritional support plan and follow-up by a multidisciplinary team make a significant contribution to the prognosis. Several studies in the literature have shown that intervention of NST in neonatal and adult intensive care patients results in better and higher calorie nutrition (13-15). In the study of Braun et al. demonstrated that NSTs were associated with less electrolyte imbalance and lower mortality in adult patients receiving parenteral nutrition (8). Park et al. also showed that patients receiving nutritional support from NST had significant improvements in their nutritional status and prognosis (16). Besides, in a study including the patients with esophageal cancer who received nutritional support by NST, it was reported that compliance and tolerability to chemoradiotherapy increased by maintaining the improved nutritional status (17).

In conclusion, patients with malnutrition or with the risk of malnutrition should be identified by making nutritional assessments at the time of hospitalization, and a nutrition plan should be established for these patients. In medical centres where NSTs practice with a consultation system, getting help from NSTs for providing nutritional support to patients with suspected nutritional deficiency at the beginning can help the clinician in the fight against malnutrition, shorten the hospitalization period of the patient and make a positive contribution to survival.

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Corresponding author

Haldun KAR (MD)
Katip Celebi University Faculty of Medicine Ataturk Training and Research Hospital,
Department of General Surgery, 35360 Izmir /Turkey
Phone: +905323463422
E-mail: haldunkar70@gmail.com
ORCID: 0000-0001-7710-0665

Nihan ACAR (Assoc. Prof.) ORCID: 0000-0003-0720-3794
Atilla ŞENCAN (MD) ORCID: 0000-0002-3765-9891
Cengiz TAVUSBAY (Assoc. Prof.) ORCID: 0000-0003-3947-2745
Tayfun ADANIR (Prof. Dr.) ORCID: 0000-0001-5213-0083