Evaluation of the Nutritional Risk of Oncological Patients Attended in the Outpatient of Unacon at a Reference Hospital Through ASG-PPP

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Avaliação do Risco Nutricional de Pacientes Oncológicos Atendidos no Ambulatório da Unacon em um Hospital de Referência por meio da ASG-PPP

Evaluacion del Riesgo Nutricional de Pacientes Oncológicos Atendidos em la Clinica en un Hospital de Referencia a través de ASG-PPP

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Abstract

Introduction: Cancer is a chronic multicausal disease characterized by disordered, rapid and invasive growth of cells altering their genetic material. It is associated with several changes in the gastrointestinal tract and may lead the patient to malnutrition and cachexia. **Objective:** To evaluate the nutritional risk using the Patient-Generated Subjective Global Assessment (ASG-PPP) of cancer patients undergoing chemotherapy. **Method:** A cross-sectional, analytical study was conducted comparing chemotherapy treatments attended at the outpatient clinic with data collected from ASG-PPP. **Results**: Of the 78 patients analyzed, the majority were females (68.82%) aged between 54 + 15 years. The prevalent tumors were esophageal, gastric (23.08%) and breast (23.08). Patients with a localized breast tumor (52.38%) had nausea, vomiting and smells provoked sickness. A significant percentage of patients reported that they were eating less than normal (44.83%) males and (32.64%) females. In the nutritional risk analysis, the critical risk was recurrent among the study patients, with the kidney tumor group having the highest participation (100%). There was no significant difference in the assessment of nutritional diagnosis ($p<0.05$), however, it was found that most patients needed some sort of intervention when the three first categories were gathered. **Conclusion**: The evaluation and nutritional monitoring in patients can avoid or minimize the effects of the changes resulting from the disease, providing a positive impact on the quality of life of cancer patients.

Key words: Nutrition Assessment; Neoplasms/drug therapy.

Resumo

Introdução: O câncer é uma doença crônica multicausal, caracterizando-se pelo crescimento desordenado, rápido e invasivo das células, alterando o seu material genético. Está associado a diversas alterações no trato gastrintestinal, podendo levar o paciente à desnutrição e à caquexia. **Objetivo**: Avaliar o risco nutricional, utilizando a Avaliação Subjetiva Global produzida pelo Próprio Paciente (ASG-PPP) de pacientes oncológicos em tratamento quimioterápico. **Método**: Estudo transversal, analítico, realizado com pacientes em tratamento quimioterápico atendidos no ambulatório com dados coletados da ASG-PPP. **Resultados**: Dos 78 pacientes analisados, a maioria era do sexo feminino (68,82%) com idade entre 54±15 anos. Os tumores prevalentes foram do esôfago e gástrico (23,08%) e mama (23,08%). As pacientes com tumor localizado na mama (52,38%) apresentaram náuseas, vômitos e os odores provocavam enjoo. Observou-se que um percentual importante de pacientes relatou que estava comendo menos do que o normal, 44,83% do sexo masculino e 32,64% do sexo feminino. Na análise do risco nutricional, o risco crítico foi recorrente entre os pacientes do estudo, sendo o grupo do tumor no rim o de maior participação (100%). Não houve diferença significativa na avaliação do diagnóstico nutricional ($p<0,05$), entretanto, foi verificado que grande parte dos pacientes apresentou algum tipo de necessidade de intervenção nutricional ao unir as três primeiras categorias. **Conclusão:** A realização da avaliação e do acompanhamento nutricional nos pacientes pode evitar ou minimizar os efeitos das alterações decorrentes da doença, proporcionando um impacto positivo na qualidade de vida do paciente oncológico.

Palavras-chave: Avaliação Nutricional; Neoplasias/tratamento farmacológico.

Resumen

Introducción: El cáncer es una enfermedad multicausal crónica caracterizada por un crecimiento celular desordenado, rápido e invasivo que altera su material genético. Se asocia con varios cambios en el tracto gastrointestinal y puede llevar al paciente a la desnutrición y la caquexia. **Objetivo:** Evaluar el riesgo nutricional mediante la Evaluación Subjetiva Global Producida por el Propio Paciente (ASG-PPP) de pacientes con cáncer que reciben quimioterapia. **Método:** Estudio analítico transversal realizado con pacientes sometidos a quimioterapia tratados en la clínica ambulatoria con datos recopilados de ASG-PPP. **Resultados:** De los 78 pacientes analizados, la mayoría eran mujeres (68,82%) con edades entre 54 y 15 años. Los tumores prevalentes fueron esofágico y gástrico (23,08%) y de mama (23,08%). Las pacientes con un tumor mamario localizado (52,38%) tenían náuseas, vómitos y los olores causaron náuseas. Un porcentaje significativo de pacientes informó que estaban comiendo menos de lo normal (44,83%) hombres y (32,64%) mujeres. En el análisis de riesgo nutricional, el riesgo crítico fue recurrente entre los pacientes del estudio, y el grupo de tumores renales tuvo la mayor participación (100%). No hubo diferencias significativas en la evaluación del diagnóstico nutricional ($p<0,05$), sin embargo, se encontró que la mayoría de los pacientes tenían algún tipo de intervención nutricional cuando nos unimos a las tres primeras categorías. **Conclusión**: La realización de la evaluación y del seguimiento nutricional en los pacientes puede evitar o minimizar los efectos de las alteraciones resultantes de la enfermedad, proporcionando un impacto positivo en la calidad de vida del paciente oncológico.

Palabras claves: Evaluación Nutricional; Neoplasias/tratamiento farmacológico.

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INTRODUCTION

Cancer is considered a chronic non-communicable disease (NCD), characterized by a disordered growth of cells[1]. It causes relevant catabolic alterations and may lead to cachexia[2]. Currently, there are several types of conventional modalities of antineoplastic treatments, among them the most effective is chemotherapy because there is more incidence of cure of different types of tumor, including the most advanced and has been revealing a positive response in relation to survival of individuals with neoplasm[3].

Due to its toxicity, chemotherapy provokes adverse events as nausea, vomiting, mucositis, constipation, diarrhea, alteration of the taste, xerostomia, ill absorption of nutrients and can lead to malnutrition. This condition is associated to this type of patient as result of low food intake, metabolic, morphologic and functional alterations caused by the tumor and increase of caloric necessity because of the tumor growth[3].

In order to improve a possible condition of malnutrition, it is essential to assess the early nutritional status of the oncologic patient and during the whole treatment with the objective of identifying those who have nutritional risk and those who already have malnutrition condition to allow an immediate and effective intervention. The PG-GSA is among the methods of nutritional screening that can identify malnutrition even before the emerging of the alterations of the body composition associated to the lack of nutrients[4].

This study had the objective of evaluating the nutritional risk in oncologic patients in chemotherapy treatment attended in a reference hospital through PG-SGA.

METHOD

Analytical, cross-sectional study with patients in chemotherapy treatment attended at the ward of a Unit of High Complexity Care in Oncology (Unacon) of Hospital João de Barros Barreto, in Belém-PA, from January to August 2018. The population analyzed consisted of 78 patients, adults and elders, in chemotherapy treatment, including pre-surgery, post-surgery and non-surgery individuals. Patients who were not evaluated by PG-SGA and those whose charts were incomplete were excluded. Data collection started upon approval by the Institutional Review Board of Hospital João de Barros Barreto, CAAE: 01391418.5.0000.0017, according to Resolutions number 466/2012 and 510/2016 of the National Health Council about research involving human subjects of the Health Council of the Ministry of Health.

The social variables as gender, age, location of the tumor were collected from PG-SGA. This tool is a protocol utilized for nutritional screening consisting of two parts: the first part with seven items, from item 1 to 4, where the responses were given by the patient itself with questions about weight, food intake, symptoms, activities and function; the items 5 to 7 were responded by the healthcare professional including the nutritionist. The sum of all the boxes of the part completed by the patient and of the part filled by the healthcare professional represent the total score of PG-SGA and expressed in screening orientations. The result obtained is classified as follows: from 0-1 (no intervention at the moment, but routine assessment should occur during treatment); 2-3 (education of the patient and relatives by nutritionist or other professional of the area with pharmacological intervention according to the symptoms identified); 4-8 (intervention of the nutritionist and other professionals); ≥9 (critical moment to improve the management of the symptoms and/or options of nutritional intervention). The result defines the nutritional risk and specific nutritional interventions to be adopted. The second part of the protocol is responded in its integrality by the healthcare professionals and assesses the metabolic stress of the patient, classifying it in status: status A, well nourished; status B, moderately nourished; and status C, severely malnourished. In this study, the items related to symptoms, food intake, nutritional risk and nutritional assessment of the patients through data produced by PG-SGA were analyzed.

The tumors were grouped in head and neck (localized in the oral cavity, larynx, oropharynx and neck. Attached glands (localized in the liver, gallbladder and pancreas). Female reproductive organs (localized in the uterus and ovary). Tumors localized in the esophageal, stomach and intestine (localized in the rectum, colon and intestine). The other tumors were described in separate (breast, prostate, lung, kidneys and Sarcoma of Kaposi).

The information were entered in *Microsoft Office Excel* 2013 and the analysis was through the *Software* Bioestat 5.0 (Ayres, 2007), with level of significance of 5% (p<0.05). The exact test of Fisher was applied for proportions comparison in order to identify a possible difference among the categories of the variables assessed.

RESULTS

The population analyzed consisted of 78 oncologic patients, most females (62.82%), mean age of 54±15 years and minimum age of 18 years and maximum of 95 years. The most prevalent tumors were esophageal, gastric and breast, both with 18 patients (23.08%). Kidney and

prostate tumors were less frequent in the sample studied (2.56%) as shown in Table 1.

Tabe 1. Categorization of oncologic patients attended at Unacon, Belém-PA, 2018

Type of neoplasm	n	%
Head and neck	8	10.26
Attached glands	7	8.97
Breast	18	23.08
Reproductive organs	5	6.41
Prostate	2	2.56
Lung	5	6.41
Kidney	2	1.28
Sarcoma of Kaposi	3	3.85
Esophageal and gastric	18	23.08
Intestine	10	12.82
Total	78	100.00

Source: Protocol of mutritional consultation – Hospital João de Barros Barreto, Belém-PA.

In relation to the symptoms, loss of appetite, described in PG-SGA as without appetite and quick satiation was more recurrent in patients with tumors localized in female reproductive organs, reaching 29.41% in this group. More than half of the patients with tumor localized in the breast had nausea, vomiting and nauseating odors (52.38%) contrary to patients with prostate tumors who had no symptoms of that kind. Almost all the patients reported the presence of more than one symptom, regardless of the location of the tumor. The most frequent symptoms were nausea, vomiting and nauseating odors while the less frequent were diarrhea or constipation as presented in Table 2.

While analyzing the food intake, most of the patients did not report changes, both males (48.28%) and females (42.86%). However, it was noticed an important percent of patients – 44.83% males and 32.64% females – who reported that they were eating less than normal. None of the patients were using nourishing tube or supplements, the results are show in Table 3.

In the analysis of nutritional risk, the critical risk was recurring among the study patients and the tumor with greatest participation (100%) was in the kidneys, followed by patients with lung tumor (83.33%) and those with tumor located in the reproductive organ (75%) and attached glands (71.43%). The patients with Sarcoma of Kaposi (66.67%) needed intervention according to Table 4.

In what concerns the nutritional status, 65.52% of the males were classified as nutritional status B corresponding to moderately malnourished or at risk of malnutrition, while females, 46.94%, were well nourished. Despite no significant difference was noticed in these results ($p< 0.05$), a large part of the patients had some sort of risk or necessity of nutritional intervention when the first three categories were joined: education of the patient, critical risk and necessity of intervention. There was no relevant difference when it was evaluated the classification of risk between both genders as described in Table 5.

DISCUSSION

In this study, the patients that were not assessed by the PG-SGA as well as those who had incomplete charts were excluded. The Project Guidelines, Screening and Assessment of the Nutritional Status[5] affirms that the assessment is the first conduct to be adopted for nutritional consultations of excellence because through this assessment, the professional is able to detect immediately alterations connected to nutrition and take

Table 2. Symptoms of oncologic patients attended at Unacon, Belém-PA, 2018

Type of neoplasm	Without appetite and quick satiety		Nausea, Vomits and nauseating odors		Diarrhea or constipation		Xerostomia and dysgeusia		Dysphagia, Odynophagia and sores in the mouth		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Head and neck	2	11.76	4	23.53	3	17.65	4	23.53	4	23.53	17	100.00
Esophageal and gastric	8	23.53	9	26.47	4	11.76	6	17.65	7	20.59	34	100.00
Intestine	3	20.00	3	20.00	1	6.67	5	33.33	3	20.00	15	100.00
Attached glands	4	25.00	5	31.25	2	12.50	4	25.00	1	6.25	16	100.00
Prostate	1	25.00	0	0.00	1	25.00	1	25.00	1	25.00	4	100.00
Lung	1	16.67	2	33.33	1	16.67	1	16.67	1	16.67	6	100.00
Reproductive organ	5	29.41	4	23.53	2	11.76	4	23.53	2	11.76	17	100.00
Breast	1	4.76	11	52.38	1	4.76	3	14.29	5	23.81	21	100.00
Kidney	2	25.00	2	25.00	2	25.00	1	12.50	1	12.50	8	100.00

Source: Protocol of nutritional consultation - Hospital João de Barros Barreto, Belém-PA.

Table 3. Alterations of the food intake of oncologic patients attended at Unacon, Belém-PA, 2018

Food intake	Male		Female		Total	
	n	%	n	%	n	%
No changes	14	48.28	21	42.86	35	44.87
More than normal	0	0.00	8	16.33	8	10.26
Less than normal	13	44.83	16	32.65	29	37.18
Solids in lower quantity	6	20.69	10	20.41	16	20.51
Solids in small quantity	6	20.69	9	18.37	15	19.23
Only liquids	4	13.79	3	6.12	7	8.97
Only supplements	0	0.00	0	0.00	0	0.00
Very little	0	0.00	1	2.04	1	1.28
Food through tube	0	0.00	0	0.00	0	0.00
Total	29	100.00	49	100.00	78	100.00

Source: Protocol of nutritional consultation - Hospital João de Barros Barreto, Belém-PA.

Table 4. Location of the tumor in the patients evaluated according to the nutritional risk, Belém-PA, 2018

Type of neoplasm	Education of the patient		In critical risk		Needs intervention		Without risk		Total	
	n	%	n	%	n	%	n	%	n	%
Head and neck	1	12.50	5	62.50	2	25.00	0	0.00	8	100.00
Esophageal and gastric	1	5.56	12	66.67	4	22.22	1	5.56	18	100.00
Intestine	2	20.00	5	50.00	2	20.00	1	10.00	10	100.00
Attached glands	2	28.57	5	71.43	0	0.00	0	0.00	7	100.00
Prostate	0	0.00	1	50.00	0	0.00	1	50.00	2	100.00
Lung	0	0.00	5	83.33	1	16.67	0	0.00	6	100.00
Sarcoma of Kaposi	1	33.33	0	0.00	2	66.67	0	0.00	3	100.00
Reproductive organ	0	0.00	3	75.00	1	25.00	0	0.00	4	100.00
Breast	4	22.22	5	27.78	9	50.00	0	0.00	18	100.00
Kidney	0	0.00	2	100.00	0	0.00	0	0.00	2	100.00
Total	11	-	43	-	21	-	3	-	78	100.00

Source: Protocol of nutritional consultation - Hospital João de Barros Barreto, Belém-PA.

Table 5. Nutritional risk/diagnosis of oncologic patients per gender, Belém-PA, 2018

Food intake	Categories	Male		Female		*P*
		n	%	n	%	
Nutritional Risk	Education of the patient	3	10.34	8	16.33	0.5242
	In critical risk	16	55.17	27	55.10	1.0000
	Needs intervention	8	27.59	13	26.53	1.0000
	Without risk	2	6.90	1	2.04	0.5517
	Total	29	100.00	49	100.00	...
Nutritional Status	A	7	24.14	23	46.94	0.0563
	B	19	65.52	20	40.82	0.0692
	C	3	10.34	6	12.24	1.0000
	Total	29	100.00	49	100.00	...

Source: Protocol of nutritional consultation - Hospital João de Barros Barreto, Belém-PA.
Note: *Exact test of Fisher: $p< 0.05$ – significant differences.

the decisions according to the results obtained. It states still that screening and assessment are protocols acknowledged by the Ministry of Health and are mandatory for patients in hospital or ward care. The use of PG-SGA, including items related to the tumor and evaluated by a numerical score allows the identification of the nutritional risk of the patient and the necessity of revaluation. With incomplete data or even without the assessment through this method, it is possible to occur recurrence of diagnosis of deficient or incomplete nutritional risk. Therefore, PG-SGA became in clinical practice a method with good acceptability, reproducibility and reliability[3].

In the study that assessed patients attended at a cancer hospital in Maranhão, the prevalence was of females (51.7%) in age range above 59 years[6], similar to this study, with 62.82% of women, mean age of 54±15 years. In relation to the tumor location, breast, esophageal and gastric tumor were the most frequently found. Other studies demonstrated that males have more risk of developing gastric cancer than women and its occurrence increases with age[7]. In another study, where the nutritional status of 107 patients of both genders attended at a ward of a hospital in the Federal District, the highest incidence was of females and the type of tumor was in the breast[8]. Data from the National Institute of Cancer José Alencar Gomes da Silva (INCA)[9] revealed that the most frequent types of cancer in the world were, in first place, lung and in second, breast. For males, the most recurring was lung (16.7%) and in females, breast (25.2%). In Brazil, in the North and Northeast Regions, prostate cancer and breast female cancer were dominant, however, cervix and stomach started to show relevance, being the North Region the only one in the country to present breast and cervix cancer rates equivalent for women.

The symptoms in PG-SGA are stratified according to the type of problem that can hamper the patient to eat sufficiently. Considering the symptoms reported frequently by the patients, loss of appetite was the most described among patients with tumor in the female reproductive organs. The study that evaluated 100 patients in a Unit of Oncology and Hematology in Porto Alegre demonstrated that malnourished patients were who presented this symptom at the most[10].

Nausea, vomiting and nauseating odors were the most reported symptoms, mainly in patients with breast tumor (52.38%). Nausea was also the most reported symptom in another study[4]. The presence of nausea and vomiting in patients in chemotherapy is related to the type of drug prescribed, quantity, route and velocity of administration, cycles received and combination with other substances. Chemotherapics usually act in the disruption of the cellular division. As the division of the cells lining the stomach and intestine are faster and intense, chemotherapics eventually promote negative changes in the epithelial coating. Therefore, nausea and vomiting can be frequent in patients in treatment[11].

The study patients presented all the symptoms described in PG-SGA. The highest frequency of symptoms was encountered in patients with esophageal and gastric tumor. This factor can affect the nutritional status and consequently demonstrate greater necessity of nutritional assistance. Studies indicated that this group of patients presented relevant rate of hospital death (nearly 16.4%), being understood that it is a population sensitive to nutritional complications because of the location of the tumor[12].

In the analysis of the food intake, it was observed an important percent of patients who reported some alteration of the food intake, among them, reduction of solids and liquids. It was verified also a frequency of approximately 45% of the patients who did not present alteration of the food intake. Similar result was encountered in an analysis of 83 oncologic patients in chemotherapy attended at the Hospital of Pelotas. Of these, 71.1% did not present alterations of food intake at the moment of the assessment[13]. In other analyzes, most of the study patients present lower food intake than normal (46.47%)[4]. The same occurred in the assessment of 90 patients in chemotherapy treatment where 31% presented taste changes and 30%, loss of appetite. The symptoms of gastrointestinal tract, together with chemotherapy drugs, can be responsible for alterations of the oral cavity mucosa, provoke xerostomia, odynophagia and mucositis, which reduces the food intake[14].

The nutritional risk is assessed by the sum of the scores of PG-SGA and indicates which type of nutritional intervention and the protocol is replicated again. As the response is objective, it points out where there was improvement or regression of the nutritional status. Therefore, it favors the perception of nutritional changes and immediate intervention in order to avoid malnutrition to onset severely, stimulating a better adherence to the treatment. This study demonstrated for the relation between the location of the tumor and the nutritional risk that nearly half of the patients was at critical risk and the tumor at the esophageal and gastric had the highest figures.

The most recurring nutritional score in this study was the critical risk as reported as the most frequent in other studies as well[13,14]. Even in other reports where the scores encountered were in average 10.2±7 , it was concluded that the previous nutritional intervention is essential to prevent and control malnutrition[15].

In this study, the relation between nutritional risk and nutritional status, regardless of not presenting significant difference in the results showed that the majority of the patients needed nutritional intervention. Similar result showed that more than half of the sample presented critical necessity of nutritional intervention (score ≥ 9). However, when patients with score from 4 to 8 were grouped, this figure reached 76.66%, revealing the necessity of nutritional intervention[4].

The study has limitations. The heterogeneity of the population studied with different topographies and ample age range can become a bias. Another limitation is the fact that patients who were not evaluated by PG-SGA were

excluded, as well as those who had incomplete charts, which can indicate that the data collected from the chart contain information omitted when the data were entered, which resulted in incomplete chart.

CONCLUSION

The nutritional evaluation is an important part of the care to the oncologic patient and PG-SGA is the most indicated tool for this evaluation. In addition of being a less invasive and low complex method, it permits to early detect the nutritional risks as well as the required intervention according to the patient status. In this study, while evaluating the nutritional risk of oncologic patients in chemotherapy treatment, utilizing the PG-SGA, it was concluded that its effects influenced the nutritional status of the patients analyzed. The nutritional parameters evaluated revealed, in some tumors, significant alterations during the referenced therapy. Because of the results encountered, it is possible to emphasize the importance of the nutritional evaluation and proper follow up of these patients in order to avoid or minimize malnutrition, providing a positive impact in the quality of life of these patients.

CONTRIBUTIONS

The authors contributed equally and substantially in all the phases of the work and approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare .

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