Evaluation of Nutritional Status and Functional Capacity in Oncologic Patients undergoing Chemotherapy in Caxias do Sul – RS

https://doi.org/10.32635/2176-9745.RBC.2020v66n2.377

Avaliação do Estado Nutricional e Capacidade Funcional de Pacientes Oncológicos em Quimioterapia de Caxias do Sul – RS

Evaluación del Estado Nutricional y Capacidad Funcional en Pacientes Oncológicos en Quimioterapia de Caxias do Sul – RS

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Abstract

Introduction: Cancer is the name given to a set of diseases that have in common the disorderly growth of cells. Impaired nutritional status is frequent in oncologic patients and negatively interferes in the patient's daily life abilities. **Objective:** To evaluate the nutritional status and functional capacity of oncologic patients undergoing chemotherapy treatment. **Method:** Cross-sectional design, observational epidemiological study, with a sample obtained by convenience from 213 individuals undergoing outpatient chemotherapy treatment. The interviewees answered to the Patient-Generated Subjective Global Assessment (PG-SGA); functional ability was verified using handgrip strength (HGS) (hand dynamometry) and through the Eastern Cooperative Oncology Group (ECOG) scale for performance scale. **Results**: 213 patients were evaluated, 56.3%, elderly and 54.0%, females. Excluding head and neck neoplasms, there was a higher prevalence of well-nourished individuals according to PG-SGA (p=0.004); in relation to the body mass index (BMI), except for individuals with breast cancer, the highest prevalence was eutrophy (p=0.010). Individuals with adequate HGS (54.9%) were well nourished according to the SGA (91.5%) (p≤0.0001) and overweight according to the BMI (46.2%) (p=0.010). Still, fully active individuals (69.0%), were well nourished according to SGA (89.8%) (p≤0.0001) and eutrophic according to BMI (44.2%) (p=0.003), showing a significant difference in the assessment of nutritional status with functional capacity. **Conclusion:** The study demonstrated that the majority of cancer patients undergoing chemotherapy had satisfactory nutritional status, adequate muscle strength and were fully active.

Key words: Nutritional Status; Muscle Strength; Neoplasms/drug therapy.

Resumo

Introdução: Câncer é o nome dado a um conjunto de doenças que têm em comum o crescimento desordenado de células. O estado nutricional debilitado é frequente em pacientes oncológicos e interfere de forma negativa nas habilidades de vida diárias do paciente. **Objetivo**: Avaliar o estado nutricional e a capacidade funcional de pacientes oncológicos em quimioterapia. **Método**: Estudo epidemiológico observacional com delineamento transversal, composto por uma amostra obtida por conveniência, de 213 indivíduos em tratamento quimioterápico ambulatorial. Os entrevistados responderam à avaliação subjetiva global produzida pelo paciente (ASG-PPP); a capacidade funcional foi verificada por meio da força de preensão palmar (FPP) e da escala de *performance status Eastern Cooperative Oncology Group* (ECOG). **Resultados:** Foram avaliados 213 pacientes, 56,3% idosos e 54,0% do sexo feminino. Com exceção dos indivíduos com neoplasia de cabeça e pescoço, observou-se maior prevalência de bem nutridos conforme a ASG-PPP (p=0,004); em relação ao índice de massa corporal (IMC), exceto para indivíduos com câncer de mama, a maior prevalência foi de eutrofia (p=0,010). Os indivíduos com FPP adequada (54,9%) apresentaram-se bem nutridos conforme a ASG (91,5%) (p≤0,0001) e sobrepeso de acordo com o IMC (46,2%) (p=0,010). Ainda, os indivíduos totalmente ativos (69,0%) eram bem nutridos conforme a ASG (89,8%) (p≤0,0001) e os eutróficos segundo o IMC (44,2%) (p=0,003), demonstrando diferença significativa na avaliação do estado nutricional com a capacidade funcional. **Conclusão:** O estudo demonstrou que a maioria dos pacientes oncológicos em quimioterapia tinham satisfatório estado nutricional, adequada força muscular e eram totalmente ativos.

Palavras-chave: Estado Nutricional; Força Muscular; Neoplasias/tratamento farmacológico.

Resumen

Introducción: Cáncer es el nombre dado a un conjunto de enfermedad que tienen en común el crecimiento celular desordenado. El estado nutricional débil es frecuente en pacientes oncológicos e interfiere negativamente con las habilidades de la vida diaria del paciente. **Objetivo**: Evaluar el estado nutricional y capacidad funcional de los pacientes oncológicos en quimioterapia. **Método**: Estudio epidemiológico observacional con delineamiento transversal, compuesto por muestra obtenida por conveniencia, 213 individuos en tratamiento ambulatorial. Los entrevistados respondieron a la evaluación subjetiva global producida por el paciente (ESG-PPP); la capacidad funcional se verificó utilizando la fuerza de la empuñadura (FPP) y a través de la escala de rendimiento del *Eastern Cooperative Oncology Group* (ECOG). **Resultados**: Se evaluaron 213 pacientes, 56,3%ancianos y 54,0% mujeres. Con excepción de las neoplasias de cabeza y cuello, hubo una mayor prevalencia de individuos bien nutridos según el ESG-PPP (p=0,004); en relación con el índice de masa corporal (IMC), a excepción de las personas con cáncer de mama, la prevalencia más alta fue la eutrofia (p=0,010). Las personas con FPP adecuada (54.9%) estaban bien nutridas según la ESG (91,5%) (p≤0,0001) y con sobrepeso con el IMC (46,2%) (p=0,010). Aun así, los individuos completamente activos (69,0%) estaban bien nutridos según ESG (89,8%) (p≤0,0001) y eutróficos según el IMC (44,2%) (p=0,003), mostrando una diferencia significativa en la evaluación del diagnóstico nutricional con capacidad funcional. **Conclusión:** El estudio demostró que la mayoría de los pacientes con cáncer que reciben quimioterapia con un estado nutricional satisfactorio, una fuerza muscular adecuada y completamente activa.

Palabras clave: Estado Nutricional; Fuerza Muscular; Neoplasias/tratamiento farmacológico.

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INTRODUCTION

Cancer is the name of a set of more than 100 diseases where the disorderly and irregular growth of cells occur[1]. The world estimate shows that in 2018, 18.1 million new cases of cancer and 9.5 million of deaths occurred[2]. Data of the National Cancer Institute Jose Alencar Gomes da Silva (INCA) estimate the occurrence of 625 thousand new cancer cases in Brazil for the triennium 2020-2022. The distribution of the incidence per geographic regions shows that the Southeast region concentrates more than 60% of the incidence, followed by the Northeast (27.8%) and South (23.4%) regions of the country[3].

The reduction of the body weight and malnutrition are considered the main nutritional disorders of the oncologic patient, resulting from the metabolic changes provoked by the neoplasm, increase of the energetic demand caused by the tumor and treatment of the disease[4]. The anti-tumor treatment involves surgery, chemotherapy and radiotherapy and, among the modalities of treatment, stands out chemotherapy, a method of choice to reduce the odd of disorderly growth of cells through a therapeutic that uses isolate or combined drugs to avoid the progress of the disease or promote the cure[5].

Because of the debilitated nutritional status, the patient may present drop of functionality as the protein-caloric malnutrition affects directly the loss of skeletal muscle fibers and consequently, the decrease of the muscle strength[6]. The functionality is understood as the capacity the individual has of performing certain activities or functions that influence simple and complex behaviors demanded in the daily life. The functional compromise impairs the individual to perform the basic activities as take care of itself and its surroundings independently[7]. In general, the functional capacity of patients with cancer is changed during the course of the disease[8].

Therefore, this study had the objective to evaluate the nutritional status and the functional capacity of oncologic patients in chemotherapy in Caxias do Sul – RS.

METHOD

Observational, epidemiologic cross-sectional design study, sample by convenience collected from January to February of 2019 in a School-Hospital in the city of Caxias do Sul – RS. Individuals of both genders, older than 19 years, regardless of the time of diagnosis and cycle of outpatient chemotherapy treatment were included. Patients with intellectual and motor impairment, pregnant women, puerperal women and no evaluation of quality of life described in the chart.

The data were collected after the Institutional Review Board of both institutions involved approved the study, approval reports 2,571,056 and 2,726,138 respectively. The study is part of an umbrella project titled: Nutritional risk and associated symptoms to tumor location in oncologic patients in chemotherapy treatment. According to Resolution 466[9] all the procedures were followed, the patients were informed about the objective of the study and confidentiality of the information and signed the Informed Consent Form (ICF), a copy of which was delivered to each one of them.

The Patient-Generated Subjective Global Assessment (PG-SGA) was applied, consisting of a self-applied questionnaire, validated and translated[10], divided in two parts. The first, the patient responds, describing the change of weight, food intake, cancer-related symptoms and alterations of the functional capacity. In the second part, responded by the professional who applies the questionnaire, the questions are based in factors associated to the diagnosis that increase the metabolic demand. In the end of the assessment, the patient can be classified as A (well-nourished), B (suspected or moderately malnourished) or C (severely malnourished).

Weight and height to assess the Body Mass Index (BMI) were obtained from the responses of the PG-SGA and classified according to the standards of the World Health Organization (WHO) and of the Ministry of Health. The BMI classification of adults is divided in underweight ≤18.5 kg/m²; normal weight >18.5 until 24.9 kg/m²; overweight ≥25 until 29.9 kg/m²; and obesity ≥30.0 kg/m². For older adults, the classification utilized was underweight ≤22 kg/m²; normal weight >22 until <27 kg/m²; and overweight ≥27 kg/m²[11,12].

Information about functional capacity were collected in two ways, firstly, by the scale developed by the Eastern Cooperative Oncology Group (ECOG), published in 1982 that evaluates the performance status, filled by the outpatient nurses and described in the patient chart. This scale determines classification scores from 0 to 4[13] as described below.

Score 0: fully active, able to carry on all pre-disease performance without restriction. Score 1: restricted in physically strenuous activities, but ambulatory (able to carry out work of a light or sedentary nature. Score 2: ambulatory and capable of all self-care, but unable to carry out any work activities (up and about more than 50% of waking hours). Score 3: capable of only limited self-care, confined to bed or chair more than 50% of waking hours. Score 4: completely disabled, cannot carry on self-care, totally confined to bed or chair[13].

Another method utilized to assess the functional capacity was the test of handgrip strength (HGS) performed with manual dynamometer to estimate the functional status of the skeletal muscle, using the hydraulic dynamometer SAEHAN®. The patients carried on the test seated, with the elbow at 90º degree, forearm and wrist in neutral position. The individuals performed

three maximum isometric contractions with slight pause between measurements. After three measures were obtained of each hand (dominant and nondominant), the measures were added and divided by three, obtaining the mean measure. The reference value of HGS considered adequate for women according to the *European Working Group on Sarcopenia in Older People* (EWGSOP)[14], is ≥16 kg/f and for men, ≥27 kg/f[14]. Lower values were considered muscle weakness.

The data were tabulated and analyzed in the software Statistical Package for the Social Sciences® (SPSS Statistic Data) version 23.0 and applied the chi-square test of Pearson to evaluate the difference of the proportions of categorical endpoints, being considered significance level of 5% (p<0.05).

RESULTS

213 patients classified as adults (19 to 59 years) and older adults (older than 60 years) were evaluated corresponding to 43.7% adults and 56.3% older adults, most of them females. In Table 1, the sociodemographic, clinic and functionality variables related to PG-SGA nutritional diagnosis are shown.

In table 1 it was verified statistically significant association between the location of the tumor and PG-SGA classification (p=0.004), the higher prevalence is of individuals diagnosed with hematologic cancer (28.6%). In relation to PG-SGA, 90.3% of the individuals with neoplasms of gastrointestinal tract (GI) were classified as well-nourished and 41.7% of the interviewees with head and neck neoplasms, as moderately mal-nourished.

According to HGS, 54.9% of the individuals evaluated in the study present normal strength and, of these, 91.5% were classified as well nourished. Of the patients with muscle weakness, 55.2% were classified as well nourished. Statistically significant association between HGS and PG-SGA classification (p ≤0.0001) was verified.

While analyzing ECOG with PG-SGA classification, it was also verified statistically significant association (p≤0.0001), and of the patients totally active (score 0), 89.8% were classified as well-nourished and among the

Table 1. Description of PG-SGA demographic, clinical and functionality variables of individuals in oncologic treatment in chemotherapy, 2019 (n=213)

Variables	n (%)	PR PG-SGA*			p-value*
		Well nourished (n=160) 75.2%	Moderately mal-nourished (n=45) 21.1%	Severely mal-nourished (n=8) 3.7%	
Age					**0.005**
Adult	93 (43.7)	80 (86.0)	12 (12.9)	1 (1.1)	
Older adult	120 (56.3)	80 (66.7)	33 (27.5)	7 (5.8)	
Gender					0.371
Male	98 (46.0)	73 (74.5)	23 (23.5)	2 (2.0)	
Female	115 (54.0)	87 (75.7)	22 (19.1)	6 (5.2)	
Diagnosis of cancer					**0.004**
Prostate	15 (7.0)	10 (66.7)	4 (26.7)	1 (6.7)	
Lung	18 (8.5)	11 (61.1)	5 (27.8)	2 (11.1)	
Hematologic	61 (28.6)	46 (75.4)	15 (24.6)	0 (0.0)	
Breast	31 (14.6)	24 (77.4)	6 (19.4)	1 (3.2)	
GI¥	31 (14.6)	28 (90.3)	2 (6.5)	1 (3.2)	
Head and neck	12 (5.6)	4 (33.3)	5 (41.7)	3 (25.0)	
Other	45 (21.1)	37 (82.2)	8 (17.7)	0 (0.0)	
HGS*					**≤0.0001**
Normal	117 (54.9)	107 (91.5)	9 (7.7)	1 (0.9)	
Muscle weakness	96 (45.1)	53 (55.2)	36 (37.5)	7 (7.3)	
ECOG€					**≤0.0001**
Score 0	147 (69.0)	132 (89.8)	14 (9.5)	1 (0.7)	
Score 1	47 (22.1)	21 (44.7)	24 (51.1)	2 (4.3)	
Score 2	15 (7.0)	5 (33.3)	6 (40.0)	4 (26.7)	
Score 3	4 (1.9)	2 (50.0)	1 (25.0)	1 (25.0)	

Captions: *PR PG-SGA: prevalence ratio of Patient-Generated Subjective Global Assessment; HGS: handgrip strength; €ECOG: *Eastern Cooperative Oncologic Group*; #Kg: kilogram; ¥GI: gastrointestinal tract; *p: ratio of statistical significance.

Note: Chi-square test of Pearson for heterogeneity. Values in bold are statistically significant (p≤0.05).

patients with strict restrictions of physical activities (score 1), 51.1% were classified as moderately mal-nourished (Table 1).

In Table 2, the sociodemographic, clinical and functionality variables are presented in relation to BMI. According to BMI and the age of the investigated, 45.8% of the older adults had normal weight and 41.9% of the adults presented overweight (p≤0.0001). Regarding gender, 52% of the males had normal weight and 43.5% of the females, overweight (p=0.041). The analysis of the location of the tumor and the classification of BMI revealed that 58.1% of the individuals who had diagnosis of GI cancer presented eutrophy and 41.9% of the interviewees with breast cancer were classified with overweight (p=0.010) (Table 2).

Still in Table 2, when comparing HGS with BMI, it was observed that 46.2% of the interviewees with normal strength were classified with overweight and 42.7% whose strength was lower, were classified as normal weight (p=0.010). In relation to ECOG, 44.2% of the individuals entirely active (score 0) presented eutrophy, 34.0%, with strict restricted physical activities (score 1) were classified with overweight and 50.0% of those who performed only limited self-care (score 4) presented malnutrition (p=0.003).

In Table 3, the description of the BMI is presented in relation to PG-SGA. Pursuant to the classification of the BMI, 75.3% of the interviewees with normal weight were well-nourished and 23.6% were classified as moderately mal-nourished according to PG-SGA.

Table 2. Description of BMI demographic, clinic and functionality variables in individuals in oncologic treatment in chemotherapy, 2019 (n=213)

Variables	n (%)	PR BMI^				p-value*
		Underweight (n=23) 10.8%	Normal weight (n=89) 41.8%	Overweight (n=83) 39.0%	Obesity (n=18) 8.5%	
Age						**≤0.0001**
Adult	93 (43.7)	2 (2.2)	34 (36.6)	39 (41.9)	18 (19.4)	
Older adult	120 (56.3)	21 (17.5)	55 (45.8)	44 (36.7)	0 (0.0)	
Gender						**0.041**
Male	98 (46.0)	8 (8.2)	51 (52.0)	33 (33.7)	6 (6.1)	
Female	115 (54.0)	15 (13.0)	38 (33.0)	50 (43.5)	12 (10.4)	
Diagnosis						**0.010**
Prostate	15 (7.0)	2 (13.0)	7 (46.7)	6 (40.0)	0 (0.0)	
Lung	18 (8.5)	5 (27.8)	10 (55.6)	3 (16.7)	0 (0.0)	
Hematologic	61 (28.6)	6 (9.8)	25 (41.0)	22 (36.1)	8 (13.1)	
Breast	31 (14.6)	2 (6.5)	12 (38.7)	13 (41.9)	4 (12.9)	
GI¥	31 (14.6)	2 (6.5)	18 (58.1)	10 (32.3)	1 (3.2)	
Head and neck	12 (5.6)	4 (33.3)	5 (41.7)	2 (16.7)	1 (8.3)	
Other	45 (21.1)	2 (4.4)	12 (26.7)	27 (60.0)	4 (8.9)	
HGS*						**0.010**
Normal	117 (54.9)	6 (5.1)	48 (41.0)	54 (46.2)	9 (7.7)	
Muscle Weakness	96 (45.1)	17 (17.7)	41 (42.7)	29 (30.2)	9 (9.4)	
ECOG€						**0.003**
Score 0	147 (69.0)	7 (4.8)	65 (44.2)	61 (41.5)	14 (9.5)	
Score 1	47 (22.1)	10 (21.3)	20 (42.6)	16 (34.0)	1 (2.1)	
Score 2	15 (7.0)	4 (26.7)	4 (26.7)	5 (33.3)	2 (13.3)	
Score 3	4 (1.9)	2 (50.0)	0 (0.0)	1 (25.0)	1 (25.0)	

Captions: ^PR BMI: prevalence ratio of the body mass index; *HGS: handgrip strength; €ECOG: *Eastern Cooperative Oncologic Group*; #Kg: kilo; ¥GI: gastrointestinal tract; *p: ratio of statistical significance.

Note: Chi-square test for heterogeneity. Values in bold are statistically significant (p≤0.05).

Table 3. Description of the BMI in relation to PG-SGA in individuals in oncologic treatment in chemotherapy, 2019 (n=213)

Variable	n (%)	PR PG-SGA			p-value*
		Well nourished (n=160) 75.2%	Moderately mal-nourished (n=45) 21.1%	Severely mal-nourished (n=8) 3.7%	
BMI[c]					**≤0.0001**
Obesity	18 (8.5)	17 (94.4)	1 (5.6)	0 (0.0)	
Overweight	83 (39.0)	73 (88.0)	10 (12.0)	0 (0.0)	
Normal weight	89 (41.8)	67 (75.3)	21 (23.6)	1 (1.1)	
Underweight	23 (10.8)	3 (13.0)	13 (56.5)	7 (30.4)	

Captions: [a]PR PG-SGA: prevalence ratio of the Patient-Generated Subjective Global Assessment; [c]BMI: body mass index; *p: ratio of statistical significance.

Note: Chi-square test for heterogeneity. Values in bold are statistically significant (p≤0.05).

Among the interviewees with underweight, 56.5% were classified as moderately malnourished and 30.4% as severely mal-nourished according to PG-SGA. Of the 83 individuals with overweight, ten (12.0%) were moderately malnourished in relation to the assessment. It was verified statistically significant association among the variables of BMI and PG-SGA (p≤0.0001) (Table 3).

DISCUSSION

The objective of the present study was to evaluate the nutritional status and the functional capacity of patients submitted to chemotherapy. The study analyzes revealed the predominance of older patients (56.3%) as ageing is associated to higher incidence of cancer because as age advances, the capacity of cells recovery reduces. The predominance of females (54.0%) found in the present study can be explained because of the biggest expectation of life for women and higher mortality rate for males in Brazil[15].

A study conducted with 50 oncologic patients of a hospital in Uberlândia – MG addressing location of the tumors presented high prevalence of hematologic cancer (24%) and GI (14%), these findings corroborate the current study[16]. In Brazil, for the triennium 2020-2022, according to data from INCA, are expected 5,920 cases of leukemia in males and 4,890 in females. For non-Hodgkin lymphoma, 6,580 cases in men and 5,450 in women are estimated. The estimates for new cases of GI cancers are much higher: 40,990 for colon and rectum cancer, and 21, 230 for stomach, in the same period[3].

Pursuant to the PG-SGA results obtained in this study, most of the individuals with hematologic neoplasms and GI were well-nourished. Discrepant results in relation to the Brazilian Enquiry of Oncologic Nutrition (IBNO)[17], that showed the elevated frequency of malnutrition of individuals with GI cancer and in patients with malignant hematological diseases as leukemias and lymphomas. This fact can be justified because the IBNO evaluated individuals in chemotherapic treatment in hospitals of 45 institutions of 16 Brazilian states and Federal District, resulting in 4,822 evaluations different from this study where patients in treatment in outpatient facilities were evaluated[17].

Still according to PG-SGA, 41.7 % of the individuals with diagnosis of head cancer were classified as moderately malnourished. Similar finding to the encountered by Cunha et al.[18], where 45.5% of the 576 individuals interviewed had the same location of the tumor and classification. Gomes and Maio[4] found similar results in a study conducted in 2015 where 59.5% of the patients with head and neck cancer in chemotherapy were classified with nutritional risk of malnourishment. It is important to emphasize that, because of the location of the tumor, individuals with head and neck cancer may present dysphagia, which hampers food intake and causes weight loss in short time[4].

Of the interviewees classified with muscle weakness, 55.2% were well-nourished according to PG-SGA. This finding may be related to more prevalence of women with overweight, breast neoplasm and older adults. The location of the tumor and the side effects can interfere in the functionality of the patient; muscle strength tends to be different among men and women and lower values for women than for men were found. In relation to age, the strength declines in older adults because of ageing, associated to low HGS with age[19].

When BMI was assessed, the study observed that only 10.8% of the patients were in nutritional deficit corroborating the findings of Firnkes et al.[20], where 7.8% of the patients present lower BMI than 18,5kg/m². As a counterpoint, it is known that BMI is a parameter with limited value because the individuals assessed can present loss of lean mass and increase of hydric retention masking the actual nutritional status[21].

When compared to the classification of underweight for BMI, 21 older adults were underweight, of these, 17 had muscle weakness. It is known that muscle strength is an important indication of global health for both genders and that ageing causes depletion of the nutritional status, implying in negative alterations of the functional capacity[22]. Therefore, the appropriate levels of muscle strength are necessary for individuals to carry out their daily activities, from work to recreational activities[19].

In this study, there was elevated prevalence of eutrophy and overweight evidenced by BMI, nearly 42.0% of the individuals assessed presented eutrophy and 39.0%, overweight. This finding can be explained by the prevalence of overweight in breast neoplasms (41.9%). Similar data to the study conducted with 153 women in oncologic treatment in Brasilia – DF showed prevalence of 36.6% of overweight in the sample studied[23]. The study carried out by Aguilar Cordeiro et al.[24] emphasizes the direct and significant association between overweight and breast neoplasm. These findings corroborate the study and can be explained by changes caused by breast cancer in the female organism, whose weight gain is intensified by chemotherapy, use of corticoids, lack of physical activity, inappropriate food habits and the ageing process itself[23].

When comparing BMI with PG-SGA, it was observed that patients who were eutrophic, with overweight or obesity per BMI were classified as moderately malnourished according to PG-SGA. But per BMI, it was possible to observe nutritional deficit in 18 individuals (10.8%) while for PG-SGA, 45 individuals (21.1%) were classified with moderate malnutrition. A study conducted with 99 individuals in chemotherapy treatment in Minas Gerais demonstrated 9.1% malnourished according to BMI, 37.4% moderately malnourished and 31.3% severely malnourished according to PG-SGA[25]. These results indicate that PG-SGA can identify more accurately the malnourished oncologic patients or in risk of malnourishment than the BMI. Therefore, BMI should not be used as only indicator of nutritional classification of the oncologic patient, it is necessary to conduct a PG-SGA-associated complete anthropometric assessment[25].

Nearly 55% of the interviewees, in relation to HGS, presented normal strength, corroborating the findings of Cavagnari et al.[26], whose HGS did not indicate depletion for most of the cases assessed. Limberger et al.[6] identified the difference of strength between genders and still emphasizes that the method to assess the strength can complement the interpretation about the analysis of the patients nutritional status.

While evaluating the functionality through ECOG, a study of Pereira et al.[27] indicated that most of the individuals assessed present some compromise that restrained their daily activities (scores 3 and 4), which concurs with the findings of this study where 69.0% of the interviewees presented score 0. Peixoto et al.[28] demonstrate in their study that most of the individuals was within the range between scores 0 and 1, indicating no functional alteration. Takahashi et al.[29] assessed 264 patients with cancer in a hospital university in Japan, of these, 215 (81.4%) presented classification of ECOG 0 and 1, corroborating the findings of this study.

This study had some limitations such as its cross-sectional design, heterogeneity of the diagnoses, lack of data of diseases' staging and topography. It is also emphasized that bias of sample selection is a limitation of the study, since only samples that contained the ECOG questionnaire in the chart were selected.

Despite the limitations referenced, this study has strong points with a significant sample of individuals and the findings represent an important contribution for the clinical practice of the nutritionist and other healthcare professionals.

CONCLUSION

The study demonstrated that most of the oncologic patients in chemotherapy presented satisfactory nutritional status, normal muscle strength and were totally active. Nonetheless, it is clear that it is paramount to perform different methods of nutritional and functional assessment since the beginning until the end of the oncologic treatment, considering the possible adverse events.

Because of the results presented, it is possible to emphasize the importance of the appropriate nutritional evaluation and follow up for this population, knowing that debilitated nutritional status is frequent in oncologic patients and interferes negatively in the daily activities of the patient.

CONTRIBUTIONS

Gabriela Argenta Isoton contributed for the conception and planning of the study, gathering, analysis and interpretation of the data and wording. Caroline da Silva Scotti contributed for the conception and planning of the study. Joana Zanotti contributed for the conception and planning of the study, analysis and interpretation of the data and critical review. All the authors approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

FUNDING SOURCES

None.

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Recebido em 2/8/2019
Aprovado em 2/4/2020