Influence of Gastric and Hematological Cancers on the Quality of Life and the Functionality of Oncological Patients

Influência dos Cânceres Gástrico e Hematológico na Qualidade de Vida e na Funcionalidade de Pacientes Oncológicos
Influencia de los Cánceres Gástrico y Hematológico em la Calidad de Vida y Funcionalidad de los Pacientes Oncológicos

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ABSTRACT

Introduction: Cancer is a complex disease, being the second leading cause of death in Brazil and in the world, with an average of 9.8 million deaths per year. **Objective:** Verify the influence of the type of cancer, gastric or hematological, on the quality of life and functionality of individuals. **Method:** This is a clinical, cross-sectional, analytical and quantitative study. In the data collection, a form with demographic, anthropometric, regular and disease data, the Quality-of-Life Questionnaire-Core30 da European Organization for Research and Treatment of Cancer (EORTC QLQ-C30) and the Karnofsky Performance Scale (KPS) were used. **Results:** 29 patients were evaluated in total, of these, 19 patients with hematological cancer (Group A) and 10 with gastric cancer (Group B). The correlation between age, EORTC QLQ-C30 and KPS was positive between age and symptoms (r=.571, p=0.011) and age and total sum of EORTC QLQ-C30 (r=.548, p=0.015); and negative between the KPS and symptoms (r=.495, p=0.031) and the KPS and total sum of the EORTC QLQ-C30 (r =.-580, p=0.009) in group A. In group B no correlation was observed between these variables. **Conclusion:** Patients with hematological and gastric cancer have reduced quality of life, with a reduction in functionality in patients with hematological cancer when compared to gastric cancer. The reduction in function in these individuals may be directly y related to age and physical symptoms.
Key words: stomach neoplasms; leukemia; lymphoma; quality of life.

RESUMO

Introdução: O câncer é uma doença complexa, sendo a segunda maior causa de morte no Brasil e no mundo, com uma média de 9,8 milhões de óbitos ao ano. **Objetivo:** Verificar a influência do tipo de câncer, gástrico ou hematológico, na qualidade de vida e na funcionalidade dos indivíduos. **Método:** Trata-se de um estudo clínico, transversal, analítico e de abordagem quantitativa. Utilizaram-se na coleta de dados uma ficha com dados demográficos, antropométricos, habituais e da doença, o *Quality of Life Questionnaire-Core30* da *European Organization for Research and Treatment of Cancer* (EORTC QLQ-C30) e a Escala de Performance de Karnofsky (KPS). **Resultados:** Foram avaliados 29 pacientes no total; destes, 19 pacientes com câncer hematológico (Grupo A) e dez com câncer gástrico (Grupo B). A correlação entre idade, EORTC QLQ-C30 e KPS foi positiva entre a idade e os sintomas (r=,571, p=0,011) e a idade e a somatória total do EORTC QLQ-C30 (r=,548, p=0,015); e negativa entre a KPS e os sintomas (r=-,495, p=0,031) e a KPS e a somatória total do EORTC QLQ-C30 (r=,-580, p=0,009) no grupo A. No grupo B, não foi observada nenhuma correlação entre essas variáveis. **Conclusão:** Pacientes com câncer hematológico e câncer gástrico apresentam redução da qualidade de vida, sendo observada uma diminuição da funcionalidade nos pacientes com câncer hematológico quando comparado ao câncer gástrico. A redução da função nesses indivíduos pode estar diretamente relacionada com a idade e os sintomas físicos apresentados.
Palavras-chave: neoplasias gástricas; leucemia; linfoma; qualidade de vida.

RESUMEN

Introducción: El cáncer es una enfermedad compleja, sien dola segunda causa de muerte en Brasil y e nel mundo, con un promedio de 9,8 millones de muertes por año. **Objetivo:** Verificar la influencia del tipo de cáncer, gástrico o hematológico, en la calidad de vida y funcionalidad de los individuos. **Método:** Se trata de un estudio clínico, transversal, analítico y cuantitativo. Em la recogida de datos se utilizó un formulario con datos demográficos, antropométricos, habituales y de enfermedad, el *Quality of Life Questionnaire-Core30* da *European Organization for Research and Treatment of Cancer* (EORTC QLQ-C30) y la Escala de Performance de Karnofsky (KPS). **Resultados:** Se evaluaron un total de 29 pacientes, de estos 19 pacientes con cáncer hematológico (Grupo A) y 10 con cáncer gástrico (Grupo B). La correlación entre edad, EORTC QLQ-C30 y KPS, fue positiva entre edad y síntomas (r=,571, p=0.011) y edad y suma total de EORTC QLQ-C30 (r=,548, p=0,015); y negativo entre la KPS y síntomas (r=-,495, p=0.031) y la KPS y suma total de la EORTC QLQ-C30 (r=,-580, p=0.009) e nel grupo A. Enel grupo B no se observó correlación entre estas variables. **Conclusión:** Los pacientes con cáncer hematológico y cáncer gástrico tienen una calidad de vida reducida, observando se una reducción de la funcionalidad en los pacientes con cáncer hematológico em comparación con el cáncer gástrico. La reducción de la funcione en estos individuos puede estar directamente relacionada con la edad y los síntomas físicos.
Palabras clave: neoplasias gástricas; leucemia; linfoma; calidad de vida.

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INTRODUCTION

Cancer is a complex non-communicable disease (NCD), the second leading cause of death in Brazil and worldwide, with mean of 9.6 million deaths per year mainly in low-and-medium income countries[1-4].

It is known than regardless of being multifactorial, 80 to 90% of the cases are related to external causes and only 10 to 20% to internal causes, with potential association between both which favors the onset of the disease. Environmental changes, wrong habits and lifestyle for prolonged periods possibly may account for this scenario[5].

Based in estimates of the National Cancer Institute José Alencar Gomes da Silva (INCA)[6], the most incident tumors in Brazil are prostate, lung, breast, colon and rectum, cervix and stomach.

Cancer can affect any organ but for each one compromised by a different type of cancer, for example, gastric, 95% of the cases are adenocarcinoma and of the lymphatic system, Hodgkin and non-Hodgkin lymphoma[7-9].

Regardless of the tumor location, diagnosis and treatment can cause important biopsychosocial changes, directly or indirectly impacting the perception of the quality of life of these individuals, mainly because of the stigma of the finitude and incurable disease it entails[10].

The advance of the science and new therapeutic strategies prolonged the survivorship of these individuals. Consequently, the importance of including quality of life and functionality in the care offered to the oncologic patient[11].

In the last years, quality of life is becoming the core of many studies across various areas of knowledge. The interest has arisen because of the increase of life expectancy due to the progress of the science and survival of chronic patients[12].

Functioning, while addressing the ability to perform activities of daily living (ADL) effectively and independently began to be evaluated to identify risks of functioning disability, devise better forms of rehabilitation and recruit the patient as co-participant, making it adjuvant of its treatment[13].

Currently, it is considered one of the main signs adopted in the prognosis of the oncologic disease and widely evaluated through the Karnofsky Performance Scale (KPS)[14].

As a consequence and because of the treatment side effects, it is important to identify what are the main factors impacting the improvement or worsening of the quality of life and functioning in order to propose strategies to help the process health/disease, reducing the negative impacts and enhancing the positive ones[15,16].

Quality of life and functioning have been calling the attention of oncology health professionals, however, few studies address these aspects in oncologic patients and their respective contributing or modifying factors.

The objective of this study is to investigate the impact of gastric or hematological cancer in the quality of life and functioning of the individuals.

METHOD

Clinical, cross-sectional, quantitative approach, analytical study carried out in two reference hospitals for treatment of oncologic patients in the State of Ceará. The Institutional Review Board of "*Instituto do Câncer do Ceará (ICC)/Escola Cearense de Oncologia (ECO)* approved the study, report number 3.047.395.

Convenience, consecutive, non-probabilistic sample according to the study inclusion and exclusion criteria.

Individuals with any type of onco-hematologic disease and with gastrointestinal cancer, older than 18 years of age, hospitalized regardless of the day of admission, with medical prescription for physiotherapeutic treatment, hemodynamically well (no use of vasoactive drugs or non-invasive ventilation), without any neurologic sequelae, unable to interfere in the responses to the questionnaires and who accepted to sign the Informed Consent Form (ICF) were enrolled.

The individuals with some cognitive alteration impacting the understanding of the questionnaires and/or for any reason were unable to complete the evaluations proposed were excluded.

After the participants concurred and signed the ICF, demographic and clinical data, type of pathology and previous treatment were collected.

The quality of life and functioning were evaluated for the participants. The European Organization for Research and Treatment of Cancer (EORTC QLQ-C30) questionnaire was applied to evaluate the quality of life. The 30-items questionnaire with 16 domains forming four scales was already translated into Portuguese: Global Health Condition Scale and Quality of Life; Functioning Scale; Symptoms Scale and Financial Difficulties Scale[17].

EORTC-QLQ-30 scores ranges from 0 to 100 and when analyzed, considering the Functioning Scale and Global Quality of Life, the higher the score, better is the quality of life of the participants. On the other hand, considering the Scale of Symptoms and Financial Difficulty, the higher the score, higher is the individual's compromise[18].

KPS was utilized to evaluate the functioning, a practical and objective scale being adopted for 50 years both for oncologic and non-oncologic patients. The scale

ranges from 0%, death, to 100%[19], equivalent to normal condition, no complaints or evidence of disease.

The Shapiro-Wilk was utilized as normality test. The data were expressed in mean and standard-deviation. Categorical data were presented as absolute and/or relative frequency. The unpaired t test of Student or Mann-Whitney test was used to compare the data. For correlations among the variables, the Pearson or Spearman correlation test was applied. The value of *p* was considered statistically significant when lower or equal to 0.05.

RESULTS

In all, 29 patients were evaluated, 19 with hematologic cancer (Group A) and ten with gastric cancer (Group B). Males were more prevalent in both groups but in Group A, the mean age was 41 ± 17 years with more singles while in Group B, the mean age was 59 ± 11 years and more married individuals. For both groups, chemotherapy was the most frequent type of treatment prior to admission (Table 1).

Table 1. Sociodemographic characteristics of oncologic patients. Fortaleza, Ceará, 2019 (n=29)

Variáveis	Group A (n=19)	Group B (n=10)	P
Age, years*	41 ± 17	59 ± 11	0.000
Sex, n/%†			
Female	8 (42.1)	4 (40.0)	0.548
Males	11 (57.9)	6 (60.0)	
Weight, kg*	70.5 ± 14.4	61.0 ± 16.9	0.277
Height, m*	1.64 ± 0.1	1.57 ± 0.1	0.374
BMI, kg/m2*	25.6 ± 3.9	23.7 ± 4.3	0.271
Marital Status, n/%†			
Married	7 (36.8)	4 (40.0)	0.364
Divorced	2 (10.5)	0 (0.0)	
Single	8 (42.1)	3 (30.0)	
Others	2 (10.5)	3 (30.0)	
Treatment, n/%†			
Chemotherapy	16 (84.2)	5 (50.0)	0.337
Chemotherapy + radiotherapy	0 (0.0)	3 (30.0)	
None	3 (15.8%)	2 (20.0)	

Captions: Group A = patients with hematologic cancer; Group B = patients with gastric cancer; BMI = body mass index; n= number.
(*) mean.
(±) standard deviation.
(†) absolute frequency.
(%) percentage.

When evaluated for quality of life by EORTC QLQ-C30, no difference was found between the groups (p≥0.05). For KPS, the functioning of hematologic patients was more compromised (p=0.021) (Table 2).

Table 2. Quality of life by EORTC QLQ-C30 and KPS of the oncologic patients. Fortaleza, Ceará, 2019 (n=29)

Variables	Group A (n=19)	Group B (n=10)	P
Measures of global health*	10.6 ± 4.0	10.8 ± 4.0	0.588
Functioning scale*	27.9 ± 10.2	33.2 ± 11.6	0.276
Scale of symptoms*	21.3 ± 7.4	18.4 ± 7.5	0.581
Financial difficulty*	2.3 ± 1.3	2.8 ± 1.5	0.625
Total*	**62.1 ± 15.0**	**65.2 ± 16.7**	**0.542**
Karnofsky scale*	76 ± 21.7	97 ± 4.8	0.021

Captions: Group A = patients with hematologic cancer; Group B = patients with gastric cancer; n = number.
(*) mean.
(±) standard deviation.

Correlation among the demographic variables, quality of life and functioning was calculated but it was found only among age, EORTC QLQ-C30 and KPS. Within each subgroup, it was encountered positive correlation in the hematology group (group A) between age and the symptoms (r=.571, p=0.011) and age and total sum of EORTC QLQ-C30 (r=.548, p=0.015), and a negative correlation between KPS and the symptoms (r=-.495, p=0.031) and KPS and total sum of EORTC QLQ-C30 (r=.-580, p=0.009). For patients with gastric cancer (group B), no correlation was found among these variables.

DISCUSSION

For each year of the triennium 2020-2022, INCA estimates that gastric cancer, leukemia, Hodgkin and non-Hodgkin lymphoma will have an incidence in men of 13,360, 5,920, 1,590 and 6,580 and in women, 7,870, 4,890, 1,050 and 5,450 new cases, respectively. Thus, hematologic and gastric cancers will be more incident and prevalent in males as the present study concluded[8].

In addition, several diseases affect more men than women and high rates of mortality are identified in this population, associated with environmental factors as high intake of alcohol, tobacco use and sedentarism, risk factors for the development of cancer[20,21].

In group A, the age ranged from 18 to 77 years and in group B, from 44 to 71 years. It is known than stomach cancer is more frequently diagnosed in men between 60 and 70 years of age. On the other hand, leukemia typically occurs in older than 50 years old adults, non-Hodgkin lymphoma, in the age-range of 70 years and Hodgkin lymphoma more common in adolescents and adults from 15 to 39 years of age[7,22-24].

In the population evaluated, patients with hematologic cancer were younger than patients with gastric cancer, reaffirming the data found by INCA since 15 patients of group A were diagnosed with leukemia before completing 60 years of age[22]. In addition, the sample was by convenience and non-probabilistic, one of the causes of the difference found between the groups.

Singles were predominant in group A, different from the study of Marques et al.[25], where the majority of the patients were married or in stable union. In group B, married patients were predominant similar to the study of Valle et al.[26], with patients with gastric and colorectal cancer.

Based in the treatments available for cancer, chemotherapy is the principal for hematologic neoplasms and for patients with advanced gastric disease when cure is not possible only with surgical procedures because of the lessening of deleterious effects of postoperative radiotherapy, preoperative reduction of the tumor and destruction of micrometastasis. There was high prevalence of chemotherapy treatment for patients with hematologic and gastric cancers earlier hospitalized.

The therapeutic can expose the patient to critical complications, negatively impacting its quality of life as the symptoms can appear, impair, or change the individual's functioning[25].

The functioning of hematologic patients was more compromised than for gastric patients as revealed in this study, this can be related to extended length of hospitalization of the first[27,28]. However, the functioning compromise of patients with gastric cancer is considerable and can be related to the time of hospitalization but mostly due to post-operation complications[29].

The functioning of patients with hematologic cancer was more compromised pursuant to KPS. According to Nascimento et al.[28], the functioning of these patients can vary according to the day of admission, having been found good functioning level in the 1st day at 80-90%, in the 5th day, 50-70% and good functioning level in the 10th day, but lower than the first day of hospitalization.

The positive correlation between age and EORTC QLQ-C30 total score is different from what was found by Mansano-Schlosser and Ceolim[30], where there was no relation between age and the total score of quality of life, however, these authors included individuals in general and not only oncologic patients. In the study of Ximenes et al.[31] with aged oncologic patients, it was concluded they presented worse quality of life in the domain physical function, confirming the finding of the present study.

On the other hand, the negative relation encountered between KPS and the symptoms corroborates the study of Portz et al.[32] where more symptoms were associated with worst functional status and with the research of Norum and Wist[33] where hematologic patients had low frequency of symptoms and high functioning level.

The main symptoms identified in patients with cancer in general are fatigue, pain, nausea, anorexia and unintentional weight loss possibly changing not only the quality of life but the course of the treatment[27] too.

The negative relation between KPS and total score of the questionnaire EORTC-QLQ-C30 occurs because the total score is directly proportional to the symptoms but in this case, as close to 100, worse is the outcome, impacting the level of functioning, which is inversely proportional to the symptoms, as high is the total score of the questionnaire considering the symptoms, worse is the impact in the performance of basic activities of the daily life[25,27].

The limitations of the study were: a) sample size; b) non-specification of the hospitalization days; c) non-homogeneity of age; and d) limitation of the number of studies about the theme in the two types of cancers, pointing out for the necessity of more studies.

CONCLUSION

No significant difference was found in this study between the quality of life in patients with hematologic and gastric cancer but for the hematologic patients, the functioning was more compromised than those with abdominal complications.

In addition, it was seen that the physical symptoms and age can negatively impact the functioning of individuals in group A and impact the quality of life in general. As a counterpart, no significant differences were found when age, functioning and quality of life were compared for patients in group B.

CONTRIBUTIONS

All the authors contributed substantially for the study conception/design, collection, analysis and/or interpretation of the data, wording, and critical review. They approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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