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CHARACTERIZATION OF ONCOLOGICAL PATIENTS WITH MALIGNANT WOUNDS

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ABSTRACT

Objective: To describe the sociodemographic and clinicopathological profile of oncologic patients in palliative care who presented malignant wound seen between 2012 to 2017 in a reference hospital in the northern region of Brazil. **Methodology:** This is a quantitative, cross-sectional and retrospective study. The data collection was performed through the analysis of medical records with open and closed questions about sociodemographic, clinicopathological data, characterization of malignant wound and its management. **Results:** 358 patients were hospitalized during the study period, of which 139 (38.82%) presented malignant wounds, a sample composed predominantly of women, with a mean age of 59.9 years, mulatto, married and with low socioeconomic status. There was no standardization in the classifications of malignant wounds and evaluation scales. Significant statistical correlations between the incidence of malignant wounds with smoking, topography of the primary tumor and antineoplastic treatment were identified. In addition, it was observed that the incomplete registration of information about wounds and their signs and symptoms, constitutes a failure to construct indicators and subsidies for research and legal support of professionals. **Conclusion:** This study brought relevant information between the patients' profile.

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INTRODUCTION

It is estimated that about 5% of cancer patients present malignant wound, being more common in the breast, head and neck and thorax (Lo *et al*., 2012; Zeppetella *et al*., 2012). However, there are no cancer registries on the incidence and exact prevalence of this injury, the result of which is underreporting (Finlayson *et al*., 2017; Lund-Nielsen *et al*., 2011). The malignant wound occurs by rupturing the skin due to the infiltration of cancerous cells or cutaneous metastasis, usually developed in the last six months of life. There is an association between hypovascularisation, uncontrolled cell proliferation and ulceration, opportunities favorable to the proliferation of microorganisms such as bacteria and fungi (Tamai *et al*., 2015, Ramasubbu *et al*., 2017). Patients are experiencing pain, odor, infection, exudate, bleeding and pruritus, causing physical and psychological suffering. Wounds of this type have no cure, so their treatment is palliative, focusing on the management of signs and symptoms that impact the quality of life (Tilley *et al*., 2016). To assess the wound and its management, several tools and topical agents can be applied according to the needs and reality of each patient and professional involved, using such indicators in the reevaluation and health education to the patient and their relatives (Finlayson *et al*. 2017, Beh and Leow, 2016, Tilley *et al*, 2016, Eons, 2015). As to the appearance of malignant wounds, they may be classified as (i) malignant ulcerative wounds (ulcerated wounds in shallow craters), (ii) malignant fungal wounds with cauliflower-like appearance, and (iii) ulcerated fungal wounds with vegetative appearance and

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ulcerated (Matsubara, 2012; INCA, 2009). Another classification used is the staging of these grade 1 to 4 wounds, and the wounds are categorized as skin integrity, signs and symptoms (Haisfield-Wolfe and Baxendale-cox, 1999). In view of the fact that it does not present reliable records of incidence and prevalence, its timid exploration of the national literature and the importance of its management to cancer patients, this study objected to trace the sociodemographic and clinicopathological profile of oncology patients in palliative care between 2012 to 2017 in a reference hospital in the northern region of Brazil.

MATERIALS AND METHODS

It is a quantitative, cross-sectional and retrospective study. Access to secondary data was possible through the favorable opinion of the Research Ethics Committee (CEP / CONEP) with number 2.423.237 and CAAE 72455217.9.3001.5550. A form created by the authors was used to collect data from the medical records, with open and closed questions about sociodemographic, clinicopathological data, as well as data related to the malignant wound and its management. The data collection period occurred between January and March 2018, in a reference hospital in cancer treatment of Belém-PA-Brazil, which has 100% of its attendance due to the demand of the Unified Health System (in Portuguese: Sistema Único de Saúde – SUS). The SUS is based on the right to free health care for all individuals, and the State must provide the necessary conditions for its full functioning (BRAZIL, 1990).
The sample was defined according to the inclusion criteria for the selection of medical records: (i) patients older than 18 years, (ii) of both sexes, (iii) diagnosed with advanced cancer (stage IV) and (iv) hospitalized in the palliative care clinic between the period of 2012 to 2017.

Data Analysis

The data were organized into a Microsoft Excel 2010, and after that the descriptive and statistical analysis of the study variables was performed. The use of the BioEstat v5.4 program (Ayres *et al*, 2007) was used to analyze the data in three phases: (i) Mann-Whitney, Chi-square test and G-test were used for the association of the malignant wound with the sociodemographic characteristics, (ii) for the malignant wound in relation to the type of treatment Chi-square and ODD RATIO were applied, and finally, (iii) for the malignant wound and the topography of the primary tumor, chi-square and chi-square analysis waste. After the Chi-square test was applied, and a significant difference between the variables was identified, the association of the variables with the calculation of the adjusted residuals was analyzed. A value of 1.96 was considered as evidence of significant association between the two categories. A confidence interval of 95% and p value $\leq$ 0.05 was also considered.

RESULTS AND DISCUSSION

Sociodemographicprofile characterization: In the period from 2012 to 2017, about 358 individuals were admitted to the palliative care clinic. According to the data collected, approximately 38.82% (139) of this one presented malignant wound. The global literature estimates that the incidence of this injury is 5-10%, but its underreporting is real since it is not listed in cancer registries (Lo *et al*, 2012; Zeppetella *et al*, 2012). It was also observed that the malignant wounds has been little approached and most of the publications are of the literature review type. Among the retrospective or prospective studies, most present only descriptive statistics. In this study, the sociodemographic profile of patients with malignant wounds showed that 52.5% were female, with a mean age of 59.9 ± 17.2 years, the majority being 78.4%is mulatto, married 59%, with complete or incomplete elementary school in the state of Pará (Table 1). The data presented here are similar in other studies, with the majority of patients showing malignant wounds, being female, 60 years or more, mulattos, with low socioeconomic status related to the study.

Clinicopathological profile characterization: Regarding the clinicopathological profile, 46.8% of the patients did not report comorbidity or alcoholism (45.3%) and 46.8% reported being smokers (p = 0.0106) (Table 2). The most common comorbidity in this study was arterial hypertension, being in agreement with the other studies (Tamai *et al*, 2015, Tamai *et al*, 2013). Regarding smoking and alcohol consumption, these factors were rarely mentioned in previous epidemiological studies. Here, there was a strong association of increased risk of malignant wound in smokers (p = 0.0106). According to Leone and Landini, (2013), nicotine induces biochemical, physiological and metabolic alterations, mainly in relation to the microcirculation. The nicotine causa in vessel walls (narrowing) and thromboembolic events. In relation to the topography of the primary tumor in a malignant wound patient, previous studies have shown that breast cancer was the most incident (Probst *et al*, 2013, Maida *et al*, 2008, Lookingbill *et al*, 1990) and only one study reported higher incidence of head and neck cancers (LO *et al*., 2011). The stomach cancer (19.4%) and uterine cervix (19.4%) (p = 0.005) were found as the primary tumor in the patients admitted to the palliative care clinic, these results show the regional epidemiological profile, as well as customs culinary and other environmental factors (Inca, 2018). About the treatment, the data showed that patients submitted to radiotherapy and /or chemotherapy showed an increase of 70% (OR = 1.7) in the risk of malignant wound in relation to those who did not take any treatment (p = 0.0469 and p = 0.0282, respectively) (Table 2). In the articles researched, most described the types of treatment without significant statistical correlations (Tamai *et al*, 2015, Gozzo *et al*, 2014). The outcome of patients with neoplastic wounds, 91 (65%) died, 23 (17%) were hospital discharged and 25 (18%) did not report the outcome of the case in the medical record. There is a divergence between the percentage of deaths of patients with malignant wounds, since the number of patients and the time of their segments is variable, the percentage of deaths ranged from 4% to 77% (Nogueira *et al*, 2017; Gozzo *et al*, 2014; Maida *et al*, 2008).

Characterization of malignant wounds and their management: Among the evaluated table, the classification of the malignant wound appearance showed that 29.5% were malignant ulcerative wounds, 4.31% were ulcerated malignant fungal wounds, 1.43% were malignant fungal wounds and the rest were not reported (Table 3). The aspect of the malignant wound is pleomorphic, this allows a variability of classifications due to the mixed aspect of the wound or individual evaluation of the professional (Maida *et al*, 2008). Nogueira *et al*. (2017) found superficial ulceration as the most common aspect of the malignant wound in their study. Table 4 shows the most frequent signs and symptoms in patients with malignant wound, this study found that pain (81.3%), odor

Table 1. Socio-demographic profile of patients with advanced cancer, patients with malignant wound and hospitalized in the palliative care clinic between the period of 2012 to 2017

Wounded malignant	Presence N=139	%	Absence N= 219	Freq (%)	p-Value
Gender					
Female	73	52.5	109	49.8	0.6906[a]
Male	66	47.5	110	50.2	
Mean age (years)					
Mean ± standard deviation	59.9 ± 17.2		58.9 ± 15.4		0.7935[b]
Origin					
Belém	52	37.4	86	39.3	0.8097[a]
Othermunicipalities	87	62.6	133	60.7	
Race (self reported)					
Mulattos	109	78.4	188	85.8	0.2747[c]
Caucasian	11	7.9	19	8.7	
Negroid	10	7.2	8	3.7	
Uninformed	9	6.5	4	1.8	
Marital status					
Married	82	59.0	136	62.1	0.1265[c]
Unmarried	29	20.9	46	21.0	
Widower	18	12.9	24	11.0	
Divorced	3	2.2	0	0.0	
Uninformed	7	5.0	13	5.9	
Education level					
Illiterate	16	11.5	28	12.8	0.2475[c]
Elementaryschoolcomp/incomp	79	56.8	140	63.9	
High schollcomp/incomp	26	18.7	29	13.2	
Highereducationcomp/incomp	5	3.6	3	1.4	
Uninformed	13	9.4	19	8.7	

[a]Chi-Square Test.
[b]Mann-Whitney test.
[c]Test G.
Source: Research data, 2018.

Table 2. Clinicopathological profile of advanced cancer patients with malignant wound and hospitalized in the palliative care clinic between the period of 2012 to 2017

Wounded Malignant	Presence N=139	%	absence N= 219	Freq (%)	p-Value
Comorbidities[a]					
Yes	54	38.8	86	39.2	0.0690
No	65	46.8	90	41	
Uninformed	20	14.4	43	19.7	
Ethics					
Yes	57	41.0	65	29.7	0.0766[b]
No	63	45.3	113	51.6	
Uninformed	19	13.7	41	18.7	
Tobago					
Yes	65	46.8	69	31.5	0.0106[b]
No	56	40.3	112	51.1	
Uninformed	18	12.9	38	17.4	
Topography					
Gastric	27	19.4	63	28.8	0.0050[b,c]
Uterinelap	27	19.4	31	14.2	
Rectum	25	18.0	11	5.0	
Head andneck	24	17.3	36	16.4	
Breast	14	10.1	21	9.6	
Male reproductive system	8	5.8	20	9.1	
Others	14	10.1	37	16.9	

	Presence N=139	Freq (%)	Absence N= 219	%	p-value	OR	IC 95%
Treatment Surgery							
Yes	46	33	58	26.4	0.0802	-	-
No	81	58.2	138	63			
Uninformed	12	8.8	23	10.6			
Radiotherapy							
Yes	50	36	53	24.2	0.0469[a]	1.7	1.0 - 2.7
No	71	51.2	127	58.0			
Uninformed	18	12.9	39	17.8			
Chemotherapy							
Yes	61	43.9	68	31.1	0.0282[a]	1.7	1.1 - 2.7
No	62	44.6	119	54.3			
Withoutpossibility	1	0.7	0	0.0			
Uninformed	15	10.8	32	14.6			

a Comorbidities found: SAH (88.9%), diabetes mellitus (29.6%) and anemia (1.9%).
b Chi-square test.
Residue analysis.
Each individual analyzed may have received more than one treatment modality.
Source: Research data, 2018.

Table 3. Description of malignant wound characteristics and their management in patients with advanced cancer hospitalized in the palliative care clinic between the period of 2012 to 2017

Wound Aspect	N=139	Freq (%)
Malignant Fungus Wound	2	1.43
Wound Fungus Malignant Ulcerate	6	4.31
Malignant ulcerative wound	41	29.5
Uninformed	90	64.76
Wound Management	**N=139**	**Freq (%)**
Pain Management	121	87.1
Exudate / infection control	24	16.7
Odor control	19	13.7
Bleedingcontrol	3	2.2

Descriptive analysis of malignant wounds. Each wound may have more than one characteristic.
Source: Research data, 2018.

Table 4. Description of signs and symptoms reported by patients with malignant wound hospitalized in the palliative care clinic between the period of 2012 to 2017

WOUND	Presence N=139	%	Absence N=219	%	Valor de p
Pain Management					
Yes	113	81.3	148	67.6	0.0016[a]
No	8	5.8	38	17.4	
Uninformed	18	12.9	33	15.1	
Odor control					
Yes	46	33.1	1	0.5	0.0003[b]
No	5	3.6	5	2.3	
Uninformed	88	63.3	213	97.3	
Bleedingcontrol					
Yes	48	34.5	3	1.4	< 0.0001[b]
No	3	2.2	6	2.7	
Uninformed	88	63.3	210	95.9	
Exudate / infectioncontrol					
Yes	39	28.1	2	0.9	0.0024[b]
No	3	2.2	4	1.8	
Uninformed	97	69.8	213	97.3	
Itching					
Yes	0	0.0	0	0.0	-
No	3	2.2	4	1.8	
Uninformed	135	97.1	215	98.2	

[a]Comorbidities found: SAH (88.9%), diabetes mellitus (29.6%) and anemia (1.9%).
[b]Chi-square test.
Residue analysis.
Source: Research data, 2018.

(33.1%) and exudate (28.1%) were more evident, however are many incomplete /uninformed data. These findings resembled studies in the literature (Nogueira *et al*., 2017; Gozzo *et al*., 2014). The manifestations related to the malignant wound acts in interrelated ways. Pain is the result of tumor growth, edema or presence of infection, as well as wound manipulation (Probst *et al*, 2012). In this study, pain, intensity or results were not identified in the medical records after administration of the prescribed medications. In a similar study, pain was the second highest complaint in women with breast cancer (Gozzo *et al*, 2014). Adderley and Holt (2014) described in their systematic review that odor is initiated by hypovascularisation, changes in vessel structure and coagulation process that result in necrotic tissues. They favor the growth of anaerobic bacteria and the production of volatile acids (Grocott *et al*, 2013; Gethin, 2011). The presence of odor still impacts the psychological, physical and social isolation (Santos and Fuly, 2015). In this study, no records were found on the evaluation of the intensity, quality and impact of odor on the malignant wound. Only topical application of metronidazole for odor control was observed. There is no reassessment was made for the efficacy of the adopted intervention. A systematic review showed that metronidazole has been used in clinical practice even in the absence of randomized clinical trials of strong evidence (Castro and Santos, 2015).

The production of exudate is increasing to cancer progression, being characteristic in large or advanced wound wounds (Gozzo *et al*, 2014; Alexander, 2009). It may be derived from the inflammatory process associated with infections and high permeability to the intratumor vessel, as well as tissue catabolism under bacterial proteases (Alexander, 2009). In this study, none evaluationwound was appliedand the treatment of malignant wounds was not standardized or with absence of segment. This can be justified by the institution being public (SUS) and having limited financial resources.

Study limitations: In this retrospective study, some information was scarce or incompletely described, which impacted the analysis of some variables. Here no relevant details of wound bed documentation, size, staging, perilesion area, application of tools for complaints reported by patients, topical products used, wound progression and case outcome were identified. Incomplete registries have also been shown in previous publications, these deficiencies that impact on the evaluation of indicators for the quality of care provided to this type of patient (Nogueira *et al*., 2017, Brito *et al*., 2017 and Gozzo *et al*., 2014). In Brazil, the mandatory nursing record was established by Resolution No. 429/2012 of the Federal Nursing Council, which ensures continuity and quality of care, as well as providing information for research, auditing and

legal support (COFEN, 2012; Agra *et al*., 2018). It is believed that inadequate documentation is related to work overload (Agra *et al*, 2017) or limited knowledge on the subject for evaluation or management of the malignant wound (Andrade *et al*., 2018; Finlayson *et al*., 2017; Pereira, 2016, Probst *et al*., 2009).

Conclusion

This study characterized patients in palliative care hospitalized with malignant wounds between the period of 2012 to 2017. The descriptive analysis revealed that the majority of patients with malignant wounds were women, with a mean age of 59.9 years, married and with a reduced socioeconomic level. A significant statistical correlation was identified between smoking, topography of the primary tumor (gastric cancer and cervix) and treatment (radiotherapy and chemotherapy) as potential factors for malignant wound development. It was also identified that the signs and symptoms most presented were pain, odor and exudate. In addition, incomplete documentation of malignant wound evaluation and its management was observed, which impacts on the continuity and quality of oncology patient care, interdisciplinary communication, auditing and legal support. In conclusion, it is suggested that more studies with the same methodological design be performed in order to obtain more accurate data for improvements in clinical practice.

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