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Main reasons for hospitalization and management in palliative cancer care in Panama.

Principales motivos de hospitalización y manejo en cuidados paliativos oncológicos en Panamá.

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ABSTRACT

BACKGROUND: The National Oncology Institute of Panama has been hospitalizing palliative care cancer patients since 2012. However, there are no studies that measure the characteristics of these patients, the reasons for hospitalization and the interventions performed.

OBJECTIVES: To describe the main symptoms leading to hospitalization in palliative care cancer patients, the management provided and the preferences of patients for the place of care.

METHODS: We conducted a prospective, longitudinal, observational and descriptive study. Palliative care cancer patients were enrolled after attending the emergency room with an uncontrolled symptom. An ESAS-r symptom questionnaire was administered at admission and at discharge. Medical records were reviewed to collect patient characteristics and interventions performed during hospitalization.

RESULTS: 76 patients were enrolled, 7 had a readmission during the study period. The main symptoms that led to hospitalization were pain, dyspnea and asthenia. 74.7% of patients had 7 or more symptoms of moderate to high intensity upon admission. A statistically significant improvement in many symptoms was observed at discharge. The most frequent interventions were hydration (94%) and analgesia (94%). 72% of patients and their caregivers preferred hospital care rather than home or hospice.

CONCLUSION: High burden of symptoms is the main reason for hospitalization in palliative care cancer patients. These symptoms improved with predominantly simple hospital interventions. The preferred place of care in our study patients is the hospital.

KEY WORDS: Palliative care, neoplasms, hospitalization, symptom assessment, disease management.

RESUMEN

ANTECEDENTES: El Instituto Oncológico Nacional de Panamá hospitaliza a pacientes con cáncer en cuidados paliativos desde 2012. Sin embargo, no existen estudios que midan los motivos de la hospitalización y las intervenciones realizadas.

OBJETIVOS: Describir los principales síntomas que motivan la hospitalización de pacientes en cuidados paliativos, el manejo proporcionado y las preferencias respecto al lugar de atención.

MÉTODOS: Realizamos un estudio prospectivo, longitudinal, observacional y descriptivo. Se reclutaron pacientes con cáncer en cuidados paliativos tras acudir a urgencias con un síntoma no controlado. Se administró el cuestionario de síntomas ESAS-r al ingreso y al alta. Luego se revisaron los expedientes clínicos para recopilar características de los pacientes e intervenciones realizadas durante la hospitalización.

RESULTADOS: Se reclutaron 76 pacientes, de los cuales 7 tuvieron una readmisión. Los principales síntomas que llevaron a la hospitalización fueron dolor, disnea y astenia. El 74,7% de los pacientes presentaba 7 o más síntomas de intensidad moderada a alta al ingresar. Se observó una mejora estadísticamente significativa en muchos síntomas al egreso. Las intervenciones más frecuentes fueron la hidratación (94%) y la analgesia (94%). El 72% de los pacientes y sus cuidadores preferían la atención hospitalaria que el domicilio o un hospicio.

CONCLUSIÓN: La alta carga de síntomas es el principal motivo de hospitalización en pacientes con cáncer en cuidados paliativos. Estos síntomas mejoraron con intervenciones hospitalarias predominantemente sencillas. El lugar de atención preferido en nuestros pacientes estudiados es el hospital.

PALABRAS CLAVE: Cuidados paliativos, neoplasias, hospitalización, síntomas, intervenciones.

INTRODUCTION

Emergency room visits and hospital admissions are common in cancer patients at the end of life.[1] At the National Oncology Institute of Panama, advanced cancer patients with uncontrolled symptoms have been hospitalized in Palliative Care since 2012, maintaining an average of 305 admissions per year between 2018 and 2022. [2]

Panama is a country located in Central America, with a total area of 74,474.2 km^2 and a population of approximately 4.1 million inhabitants. [3] The average occurrence of cancer in Panama in the period of 2015-2020 was 7,768 cases per year, leading the first position in the causes of mortality in 2022. [4,5] Most of these patients are treated at the National Oncology Institute, which is in the capital city and is the public reference oncology hospital of the country. In 2022, this hospital treated 5,025 patients, of which 2,539 patients were treated by the Palliative Care Unit. Admissions to Palliative Care represent 4.5% of the total hospital admissions. [6]

Due to its proximity, many of the cancer patients in Palliative Care who show to the hospital for an uncontrolled symptom come from the metropolitan and suburban areas. The follow-up of these patients is carried out in the hospital through in-person attention or by telephone in case of losing mobility. In the metropolitan area, there is no in-person palliative home visit attention.

Patients living in suburban and country areas are referred to up to 30 palliative care teams that are distributed in primary care centers throughout the country. There are also 9 hospitals in these regions that have palliative care teams that support other medical specialties in the in-patient approach. [7] Unlike the capital city, many Palliative Care teams in other regions of the country have home care services.

In Panama there are no hospices specialized in palliative care, so patients who cannot satisfy the relief of their symptoms at home show up to the hospital and if required, are hospitalized under the Palliative Care Unit. This study aims to describe the main characteristics of patients admitted by the Palliative Care Unit, the reasons for hospitalization, the intensity of symptoms and their variation; the management provided and its complexity, and the preferences of patients in terms of the place of care.

METHODS

We conducted a prospective, longitudinal, observational and descriptive study. The sample size calculated was 74 patients for a universe of 305 admissions per year, with a 95% confidence level and a 10% margin of error. Patients eligible for the study had to be diagnosed with cancer in exclusive palliative care, aged 18 years and older, admitted for hospitalization via Acute Care (Emergency room) of the National Oncology Institute from June 1, 2024 to September 30, 2024.

Exclusion criteria included patients admitted from the palliative care clinic, those transferred from another service or hospital, treatment recipients with curative or adjuvant intent and those admitted for planned procedures (e.g. catheterization, tunneling, gastrostomy).

Once admitted, the research study was presented to the patient and the primary caregiver for possible inclusion in the study, its objectives, management of the information and usefulness of the information obtained. If consent was obtained from the patient and/or primary caregiver, the patient signed an informed consent form with a copy for the patient.

The researcher then administered the Edmonton Symptom Assessment System - Revised (ESAS-r) symptom questionnaire, which enlists ten symptoms

commonly experienced by palliative care patients, like pain, fatigue or insomnia, using a score from 0 to 10 to describe their severity. The ESAS-r validated in Spanish version, [8] was administered during the first 48 hours of admission and a second time within 24 hours of discharge. The questionnaire was answered by the patient or primary caregiver with the guidance of the investigator, depending on the patient's condition, according to the ESAS-r Administration Manual from the University of Alberta, Canada. [9] At the discharge, an additional question was included in the ESAS-r questionnaire: *Where would you have preferred to be treated (home, hospice, hospital)?*

Once the patient was discharged, hospitalization data were collected from the electronic medical record, filling out a hospitalization data collection form which included the following variables: sex, age, marital status, cohabitation, insurance status, level of education, primary diagnosis, metastatic disease, Eastern Cooperative Oncology Group (ECOG) scale functional status[10], symptom leading for admission, diagnostic studies, interventions applied, days of hospital stay and readmissions. The data were then transferred to the statistical program Stata version 18 for its analysis and presentation in tables and graphs. A comparison between symptom intensity at admission and discharge was done using Student's t-test to assess for statistical significance of differences.

The study was approved by the Bioethics Committee of the Santo Tomas Hospital in Panama City, following the standards of the Declaration of Helsinki and national research regulation.

RESULTS

Table 1: Patient characteristics

Variable	Frequency (%) N = 76	Std Dev	Range	CI
Age (years)	60.8	1.72	18-96	57.4-64.2
Sex				
Female	46(61)			
Male	30 (39)			
Marital status				
Married	36 (47)			
Single	15 (20)			
Not recorded	12(16)			
Separated/divorced	5 (6)			
United	4 (5)			
Widower	4 (5)			
Cohabitation				
Accompanied	68(89)			
Alone	6(8)			
Not recorded	2(3)			
Social insurance				
Insured	64(84)			
Uninsured	12(16)			
Educational Level				
High school	22(29)			
University	14(18)			
Primary	14(18)			
No	3 (4)			
Technician	1(1)			
Not recorded	22(29)			
ECOG				
4	38 (50)			
3	26 (34)			
2	5 (7)			
1	1 (1)			
Not recorded	6(8)			

Source: *Database of the study Main reasons for hospitalization and management in palliative care oncology in Panama.*

76 patients were recruited, who met the inclusion criteria and agreed to be part of the study. 7

readmissions were recorded from which data were also taken for symptoms, ESAS-r questionnaire, complementary studies and interventions.

Patient characteristics

The average age of the patients was 60.8 years, 61% (46) were women. 47% (36) were married, 89% (68) lived accompanied, 84% (64) were insured and 48% had at least high school education. 72% (55) of patients had metastases. 84% (64) had a low performance status with an ECOG 3-4. (See Table 1).

The most frequent primary tumors were renal (9), cervical (8), colon (7), and pancreas (7). (See Figure 1).

Other sites of cancers reported less frequently were oral cavity, ovary, lung, hepatocellular carcinoma with 2 cases each one. The most frequent sites of metastasis were liver (30%), lung (30%), bone (26%), peritoneum (13.2%), lymph node (7.5%), bladder/rectum (5.7%), and central nervous system (5.7%).

The main symptoms presented at admission were pain 20.5%(17), dyspnea 19.3% (13) and asthenia 14.5% (12). (See Figure 2).

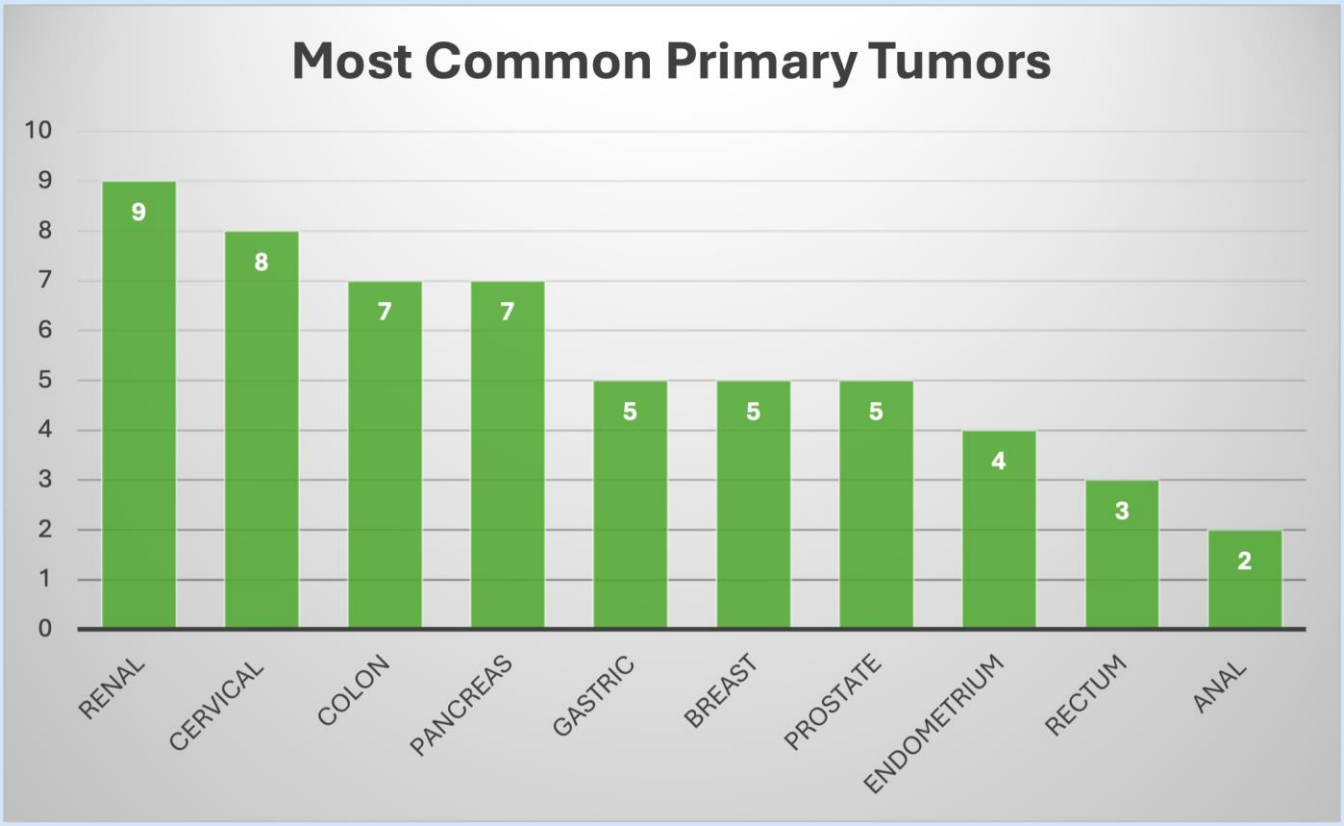

Figure 1. Most common primary tumors in patients

Source: *Database of the study Main reasons for hospitalization and management in palliative care oncology in Panama.*

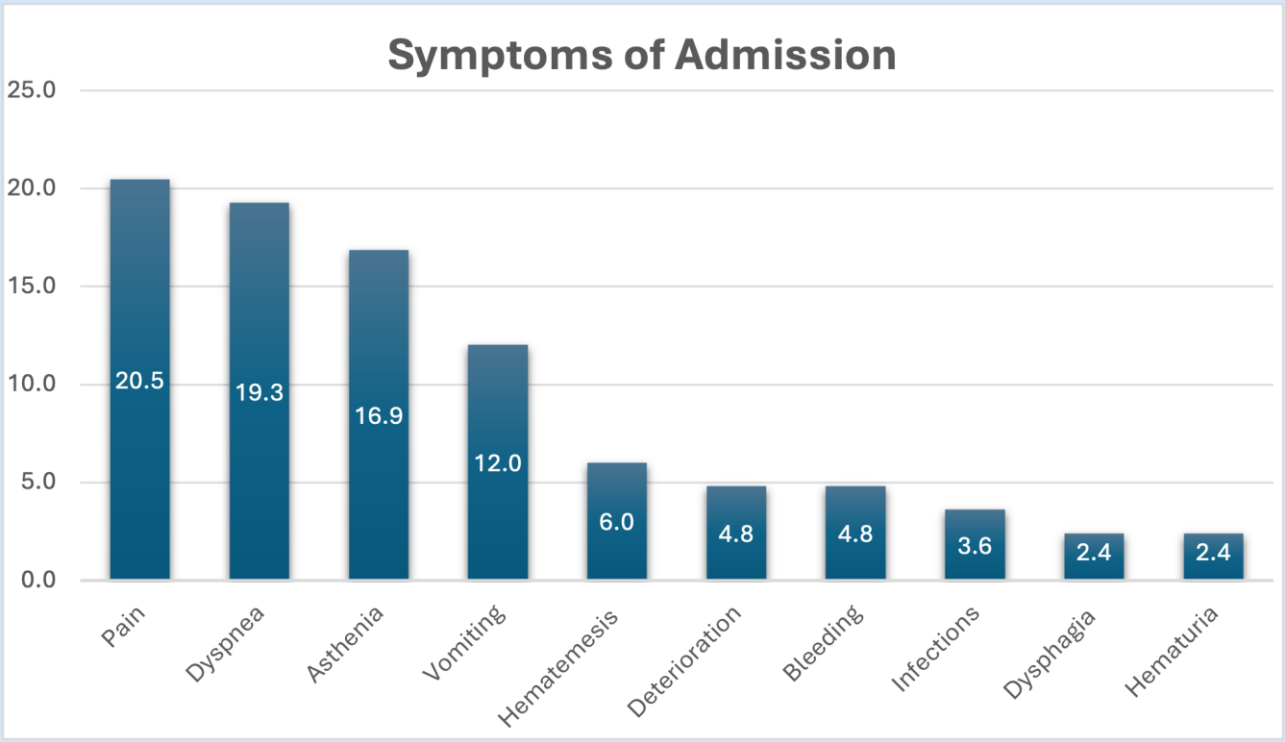

Figure 2. **Most frequent symptoms at admission**

Source: *Database of the study Main reasons for hospitalization and management in palliative care oncology in Panama*

Table 2: **Hospitalization course**

Variable	Frequency (%) N = 76	Std Dev	Range	CI
Hospital Stay (days) Average*	6.25	0.51	1-26	5.22-7.27
Readmission				
No	69(91)			
Yes	7(9)			
Hospital Death				
No	41(54)			
Yes	35(46)			
Preferred Location for attention*				
Hospital	18(72)			
Home	7(28)			
No response	29(-)			

*Includes hospital readmissions. Percentages calculated from the 25 patients who provided a valid response

Source: *Database of the study Main reasons for hospitalization and management in palliative care oncology in Panama.*

The average hospital stay reported is 6.25 days and 35 patients died during hospitalization. All deceased patients had an ECOG of either 3 or 4 on admittance. From 41 patients discharged alive, 21 died at 30 days, 9 died between 30-90 days, and 11 were still alive 90 days after discharge. The preferred place to be treated was the hospital 72% (18) while home was 28% (7). No one selected a hospice. (See Table 2).

Edmonton Symptom Assessment System

The ESAS-r questionnaire at admission showed high intensity symptoms (>7 points) in asthenia, loss of appetite, and loss of well-being; while moderate intensity symptoms (4-6 points) were reported in pain, drowsiness, nausea, dyspnea, discouragement, anxiety, and insomnia (See Table 3). On the other hand, 74.7% (62) patients had at least 7 symptoms of moderate to high intensity at the same time.

Table 3: ESAS-r Comparative Admission vs Discharge

Symptom	First Assessment Average	Standard deviation	Second Assessment Average	Standard deviation	Difference	P value
Pain	6.4	0.4	2.2	0.5	4.2	<0.001
Tiredness	7.7	0.3	4.5	0.7	3.2	0.002
Sleepiness	6.3	0.4	3.6	0.7	2.7	0.074
Nausea	4.2	0.4	0.7	0.3	3.6	<0.001
Loss of appetite	7.3	0.3	4.4	0.7	2.8	<0.001
Dyspnea	5.5	0.4	1.3	0.4	4.1	<0.001
Depression	6.1	0.4	2.6	0.6	3.5	<0.001
Anxiety	5.5	0.4	3.0	0.6	2.5	0.064
Insomnia	6.9	0.4	2.9	0.6	4.0	0.001
Loss of well-being	7.6	0.3	3.4	0.6	4.2	<0.001

$p < 0.05$ is significant (Student's t-test)

Source: *Database of the study Main reasons for hospitalization and management in palliative care oncology in Panama.*

Additional symptoms reported to the ESAS-r questionnaire included dry mouth as the most frequent 48.2% (40), followed by edema 7.2% (6) and constipation 6% (5).

Regarding the comparison of symptom intensity at admission versus hospital discharge, 76 patients completed the ESAS-r at admission, but only 29 of the 41 surviving patients at discharge completed it because they withdrew before applying the questionnaire or did not wish to respond. No imputation methods for were applied; therefore, the analysis was conducted with the patients who provided their responses. We acknowledge that the missing data may introduce potential bias in the statistical analysis. Symptom improvement was evidenced upon discharge compared to admission. Student's t-test demonstrated statistically significant differences ($p < 0.05$) in all parameters except for somnolence and anxiety.

Interventions during hospitalization

The most frequent interventions were parenteral hydration 94% (78), analgesia 94% (78), the use of proton pump inhibitor Omeprazole 61.4% (51), the use of anxiolytic alprazolam and antipsychotic haloperidol 55.4%(46) and the antiemetic metoclopramide 53%(44). (See Figure 3).

Regarding the use of analgesics, morphine was the most frequently prescribed 57% (47), followed by adjuvants (gabapentin, pregabalin, scopolamine, dexamethasone) 49% (40), non-steroidal anti-inflammatory drugs 19.2%, buprenorphine patch 30% (25), tramadol 27% (22), tapentadol 5% (4) and paracetamol/codeine 1% (1). These represent the opioids available in the hospital. (See Figure 4).

Among the invasive procedures registered are thoracocentesis 4.8% (4) and paracentesis 4.8% (4). Other less frequent procedures were nephrostomy replacement 2.4% (2), percutaneous gastrostomy 1.2% (1), endoscopy to control gastric tumor

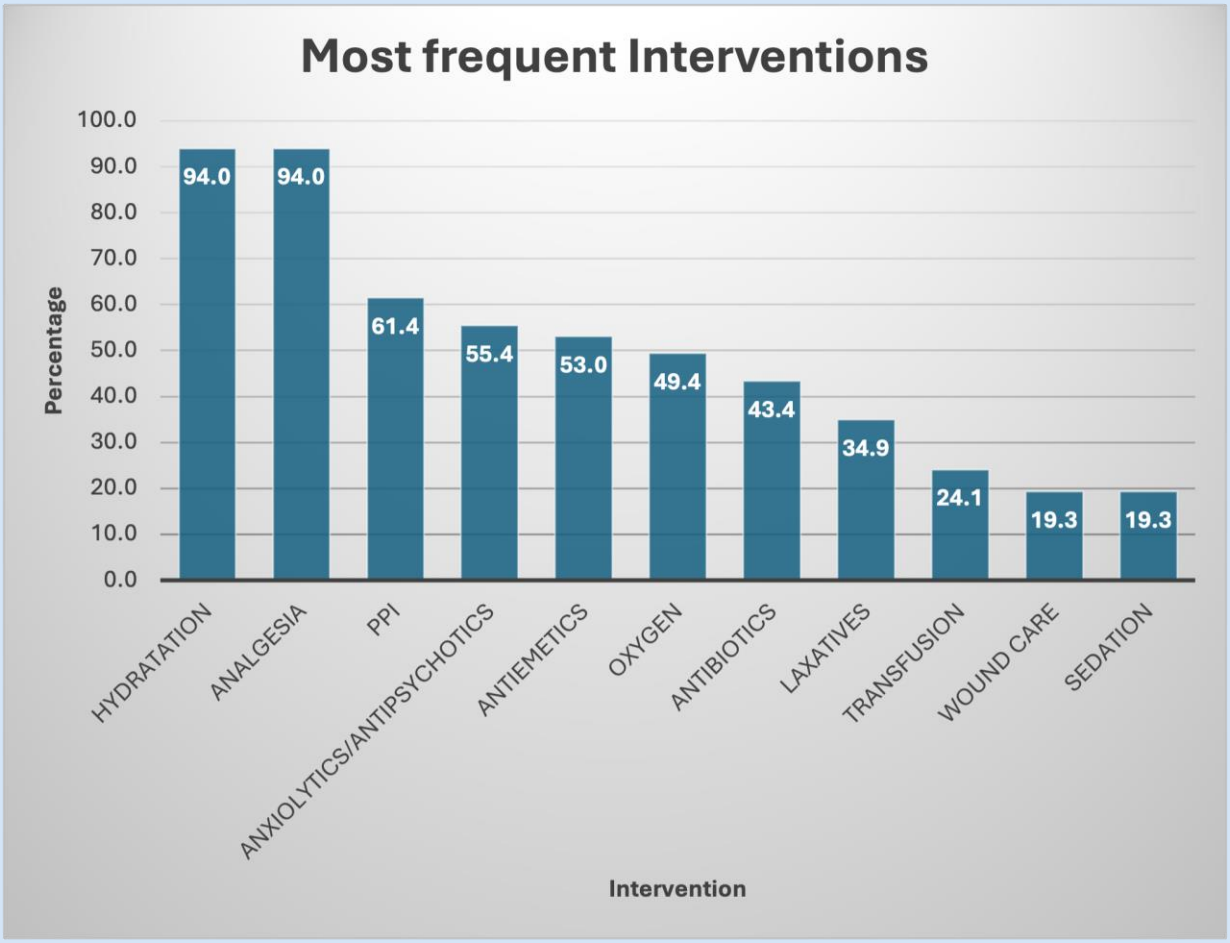

Figure 3. Most frequent interventions

*PPI Proton pump inhibitor=omeprazole.

†Anxiolytic/antipsychotic=alprazolam/haloperidol

‡Antiemetic=metoclopramide. Antibiotics = several.

§Laxatives = Lactulose.

¶ Sedation = Midazolam.

Source: *Database of the study Main reasons for hospitalization and management in palliative care oncology in Panama*

bleeding with clip placement and hemostatic 1.2% (1), lumbar sympathetic neurolysis 1.2% (1), tumor embolization in the right hemiface 1.2% (1) and replacement of internal-external biliary drainage 1.2% (1). One patient was taken to surgery for disarticulation of the right lower extremity, then was admitted to the Intensive Care Unit and finally died.

A total of 12 palliative sedations were performed: 9 were intermittent and 3 were continuous infusion. Midazolam was used in all cases. The refractory symptoms that indicated palliative sedation were delirium (9), pain (1), dyspnea (1) and status epilepticus (1).

Complementary studies performed include laboratories 74% (61): Blood count, blood tests, urinalysis, cultures; X-rays 37% (31) and computed tomography 6% (5). Ultrasound, on the other hand, is used as an auxiliary

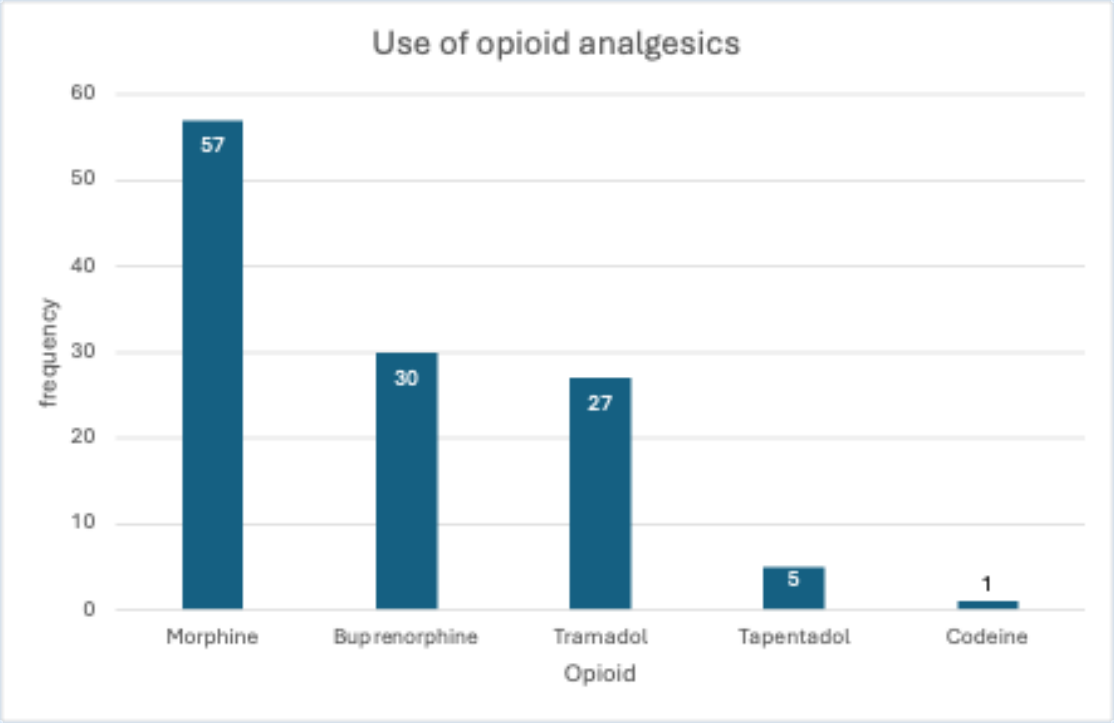

Figure 4. Most frequent interventions

*Morphine includes basal and rescue doses. **Codeine: Tablet combined with paracetamol.

Source: *Database of the study Main reasons for hospitalization and management in palliative care oncology in Panama*

tool in thoracocentesis and paracentesis procedures 4.8% (4).

DISCUSSION

These results show that pain, dyspnea and asthenia are the main symptoms that motivate a visit to the emergency room at a oncology referral hospital in Panama. They indicate that patients arrive with multiple symptoms and that interventions during hospitalization achieve a significant improvement in the symptoms for which patients come to Palliative Care. These interventions were mostly simple measures.

These findings complement and reinforce the work carried out by Hjermstad et al, in terms of the main symptoms in patients with advanced cancer requiring hospitalization and the main interventions performed. [11] The presentation of multiple symptoms simultaneously, causing a high disease burden, with loss of functionality and consequently, independence, make the patient in palliative care a patient whose approach can be complex.

The profile of the cancer palliative care patient who requires hospitalization may be somewhat different from that of an oncology patient. The patient may be younger, the primary cancer may vary, and the functional status is usually lower. The mean age in this study was 60.8 years of age, which is slightly below the age range of patients seen in the hospital (65-74 years of age). [6] This could be explained by the fact that younger patients tend to have more symptoms and use more palliative medications, with this trend decreasing as age increases. [12] The predominance of women (61%) coincides with the cases treated in the hospital (60.8%).[6]

A certain discrepancy is observed in the primary diagnosis of cancer requiring hospitalization in Palliative Care. Renal cancer and pancreatic cancer were among the four most frequent, probably because of the tendency to be detected incidentally, in advanced stages, when there may be a high burden of symptoms. [13,14] The most frequent cancers in Panama, in descending order are: breast, prostate, cervix, colon and stomach. Renal and pancreatic cancers are in thirteenth and eighteenth place respectively. [15]

When the ESAS-r questionnaire was applied, it was noted that patients who come to the emergency room have multiple symptoms of moderate to severe intensity, which translates into a high burden of symptoms. The symptom that mainly took the patient to the emergency room and that required hospitalization was pain followed in descending order by dyspnea, asthenia, vomiting and bleeding. Pain is a constant symptom that sometimes has suboptimal relief, while up to 20 other symptoms can occur intermittently. [16-19] The relief of these symptoms can be complex, sometimes requiring multidisciplinary hospital management. On the other hand, an improvement in all symptoms is observed, being statistically significant in pain, asthenia, nausea, loss of appetite, tiredness, insomnia and loss of well-being.

Interventions in general seem to correspond to the symptoms most frequently reported on hospital admission. Simple interventions were predominant, with hydration and analgesia reported in almost all admitted patients. The high frequency of clinically assisted hydration is striking. A systematic review found an artificial hydration frequency of 12%-88% in the last week of life. [20] Although most patients had a poor functional status, nearly half reported xerostomia, and family members generally tend to believe that artificial hydration is a useful therapy in end-of-life care; there are controversies regarding its benefits and risks, making it a topic that requires further investigation. [21]

The high proportion of opioid analgesic use (94%) may correspond to pain and dyspnea as the main symptoms that lead to hospitalization. Its frequency of use can reach 99.8% in hospices in the United States, 85% in Japan, while in European countries it ranges from 18.5% to 77.9%.[12,22,23]

The proton pump inhibitor omeprazole, the anxiolytic alprazolam, and the antiemetic metoclopramide were used in more than half of the patients. Omeprazole ranks third in use (61%). Its use could be related to hematemesis (6%), gastric cancer (6%) and the use of steroidal and non-steroidal anti-inflammatory drugs (up to 19.2%). Although the reasons for its indication go beyond the objectives of this study, it is an interesting data point that requires further research. A study conducted in hospices reported a use of proton pump inhibitors of 34.6%.[22] One study found that indications for proton pump inhibitor prescription were known in 50% of admissions and 59% during hospital stays; highlighting its excessive use in palliative care. [24]

Anxiolytics and antipsychotics (55.4%) are used in this palliative care unit to relieve symptoms of anxiety, insomnia (alprazolam) or agitation (haloperidol). The ESAS-r at admission, reported anxiety and insomnia of moderate intensity, which could justify its use. Some studies have reported a proportion of benzodiazepine use ranging from 7.8%-91.5% and antipsychotic use from 4.8%-71.8% in patients with end-stage cancer and hospice disease. [12,22,23]

The use of antiemetics (53%) is higher compared to the study by Sera, McPherson and Holmes that reported 18.7%, however, it may be related to the

high incidence of vomiting and hematemesis recorded in our study. The use of laxatives, on the other hand, is lower than that reported by Sera et al., which was 54.8%.[12]

The use of antibiotics (43.4%) is within the range of frequency reported in the literature and can correspond to infections, which were the eighth most frequent symptom, it is important to note that secondary diagnoses such as infectious were not measured on admission or during hospital stay. A systematic review found a prevalence of antibiotic use of 19%-84% in palliative care units. [25]

Complex interventions, which require qualified techniques and personnel, such as transfusion of blood products, palliative sedation; and invasive procedures like thoracentesis, nephrostomy replacement, percutaneous gastronomy, hemostatic gastroscopy, lumbar sympathetic neurolysis, facial tumor embolization and biliary drainage replacement, were less frequent.

Blood transfusions (24.1%), specifically packaged red blood cells, are slightly lower than reported in other studies (29%-38.4%).[26,27] Its indication in the hospital is for symptomatic anemia of <8.0g/dL. In a study with patients who received blood transfusion, it was found that 73% had an ECOG performance status of 3-4 and that the main symptom was asthenia. [28]

The proportion of palliative sedation (19.3%) is within the ranges found in the literature (14.6%-54.2%). The indication of palliative sedation for refractory delirium, dyspnea and pain; and the use of Midazolam as the main medication administered; is similar to other studies. [29-32]

Simple diagnostic studies also prevail in this sample. Laboratories were the most used studies (74%), followed by X-rays (37%) and Computed Tomography scans (6%). In our sample, no magnetic resonance imaging or positron emission tomography were reported, unlike other publications, where they are reported (6% and 2% respectively) being computed tomography 22%-34%.[33,34] The improvement in symptoms found in our results suggests that sometimes expensive studies are not necessary to achieve symptom relief in palliative care patients. [34]

The average hospital stay (6.25 days) was slightly longer than that reported by our oncology hospital (5 days) [6] and slightly shorter than the general hospitalizations reported by the countries of the Organization for Economic Co-operation and Development (OECD) of 7.7 days. [35]

The frequency of hospital readmissions (9%) is similar to that reported in the literature. Earle et al found a proportion of hospital readmissions of 7.8-9.1% and consider it an indication of poor quality of care when there is more than one hospitalization in the last month of life. [36] In-hospital mortality is comparable to that reported in the literature, which ranges from 24.6%-52%.[37.38]

The predominant place of preference for care is the hospital. The most frequent reason for this, according to the participants, is because of the controlled and safe environment provided by the hospital. The predominance of the hospital as the preferred place of care is somewhat higher than that reported by Hjermstad et al. where 66% of patients preferred to be admitted to a hospital, 18% to home and 8% to a hospice. [11] This preference is possibly influenced by the fact that the hospital is the main resource available to patients and relatives in the metropolitan area to resolve their uncontrolled symptoms.

Study limitations:

A little more than half of the ESAS-r questionnaires at discharge could be completed because they withdrew before answering the questionnaire or did not wish to respond it; and partly because of hospital deaths. On the other hand, this study focused on measuring medical-centered interventions such as medications and procedures, omitting the psychosocial, spiritual, and interpersonal interventions of the team: Nursing, Social Work, Mental Health, and the chaplain, which can also influence the improvement of symptoms.

Recommendations:

A study on end-of-life care preferences in the country region where palliative home care is provided and could give a contrast on the preferences found in our results. The predominance of simple interventions suggests that an initiative to create a hospice may be an alternative to meet the needs of patients in palliative care when it is not possible at home. We also recommend the strengthening of the Panamanian Palliative Care Program with home care to meet the needs of patients and family members who prefer home-based care/services.

Contributions:

AV conceived the idea. AV and JP were responsible for the development of the research protocol. AV, RE, and MG was responsible for the enrollment of participants. KM was responsible for data collection and review of clinical records. JP was responsible for data analysis and presentation in tables and graphs. All co-authors collaborated in the interpretation of the results and their discussion. AV, JP and KM collaborated for the writing of the article, and it was then reviewed by all the authors.

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Conflicts of interest:

None.

REFERENCES

[1] Barbera L, Taylor C, Dudgeon D. Why do patients with cancer visit the emergency department near the end of life? CMAJ. 2010 Apr 6;182(6):563-8. doi: 10.1503/cmaj.091187. Epub 2010 Mar 15.

[2] Instituto Oncológico Nacional de Panamá. Boletines de Registro y Estadísticas de la Salud (REGES). Boletines de registro y estadísticas de la salud REGES Años: 2018-2022.

[3] Instituto Nacional de Estadística y Censo, Contraloría General de la República de Panamá. Resultados finales básicos XII Censo nacional de población y VIII de vivienda 2023. Población en la República, por sexo, según provincia, comarca indígena y grupos de edad: Censo 2023.

[4] Correa F. Análisis de Situación del Cáncer en la República de Panamá Año 2024.Departamento de Análisis de Situación y Tendencias de Salud. Ministerio de Salud de Panamá. Pág. 34.

[5] Instituto Nacional de Estadística y Censo, Contraloría General de la República de Panamá. Defunciones y Tasa de Mortalidad de las Cinco Primeras Causas de Muerte, por sexo, según provincia, comarca indígena de residencia y causa: Año 2022. Cuadro 12.

[6] Instituto Oncológico Nacional de Panamá. Boletines de Registro y Estadísticas de la Salud (REGES). Boletines de registro y estadísticas de la salud REGES Año: 2022.

[7] Pastrana T. et al. Atlas de Cuidados Paliativos en Latinoamérica 2020 (2ª ed.). Houston: IAHPC Press. 2021.

[8] Carvajal Valcarcel A, Martínez García M, Centeno Cortes C. Versión española del Edmonton Symptom Assessment Sytem (ESAS): un instrumento de referencia para la valoración sintomática del paciente con cáncer avanzado. Med Paliat. 2013; 20(4):143-149. doi:10.1016/j.medipa.2013.02.001

[9] Nekolaichuk C, Watanabe S. Edmonton Symptom Assessment System – Revised (ESAS-r) Administration Manual. Alberta Health Services (AHS) Edmonton Zone Palliative Care Program Covenant Health (CH) Palliative Institute Division of Palliative Care Medicine, Department

of Oncology, University of Alberta. Updated: November 13, 2019; 39 p.

[10] Oken MM, Creech RH, Tormey DC, Horton J, Davis TE, McFadden ET, Carbone PP. Toxicity and response criteria of the Eastern Cooperative Oncology Group. Am J Clin Oncol. 1982 Dec;5(6):649-655. DOI: 10.1097/00000421-198212000-00014

[11] Hjermstad MJ, Kolflaath J, Løkken AO, et al. Are emergency admissions in palliative cancer care always necessary? Results from a descriptive study. BMJ Open, 2013;3(5), e002515. doi:10.1136/bmjopen-2012-002515

[12] Tatokoro M., Matsuo N. The Impact of Aging on Symptom Prevalence and Management in Terminally ill Patients With Cancer. J. Pain Symptom. Manag. 2022; 63:251–259. doi: 10.1016/j.jpainsymman.2021.09.001.

[13] Pereira SP, Oldfield L, Ney A, et al. Early detection of pancreatic cancer. Lancet Gastroenterol Hepatol. 2020;5(7):698-710. doi:10.1016/S2468-1253(19)30416-9

[14] Gray RE, Harris GT. Renal Cell Carcinoma: Diagnosis and Management. Am Fam Physician. 2019 Feb 1;99(3):179-184. Erratum in: Am Fam Physician. 2019 Jun 15;99(12):732. PMID: 30702258

[15] Ministerio de Salud, Departamento de Registros y Estadísticas de Salud. Registro Nacional del Cáncer de Panamá, Boletín Estadístico. Cuadro 2 Casos y tasas de tumores malignos en la República de Panamá, por sexo, según sitio anatómico. Año 2020 oficial. Publicado 2024.

[16] Henson LA, Maddocks M, Evans C, Davidson M, Hicks S, Higginson IJ. Palliative Care and the Management of Common Distressing Symptoms in Advanced Cancer: Pain, Breathlessness, Nausea and Vomiting, and Fatigue. J Clin Oncol. 2020 Mar 20;38(9):905-914. doi: 10.1200/JCO.19.00470. Epub 2020 Feb 5. PMID: 32023162; PMCID: PMC7082153.

[17] Grond S, Zech D, Diefenbach C, Bischoff A. Prevalence and pattern of symptoms in patients with cancer pain: a prospective evaluation of 1635 cancer patients referred to a pain clinic. J Pain Symptom Manage. 1994;9(6):372-382. doi:10.1016/0885-3924(94)90174-0

[18] Addington-Hall J, McCarthy M. Dying from cancer: results of a national population-based investigation. Palliat Med. 1995;9(4):295-305. doi:10.1177/026921639500900404

[19] S. Deandrea, M. Montanari, L. Moja, G. Apolone, Prevalence of undertreatment in cancer pain. A review of published literature, Ann Oncol, 2008;19(12):1985-1991, ISSN 0923-7534, https://doi.org/10.1093/annonc/mdn419.

[20] Raijmakers NJH, van Zuylen L, Costantini M, Caraceni A, Clark J, Lundquist G, Voltz R, Ellershaw JE, van der Heide A; OPCARE9. Artificial nutrition and hydration in the last week of life in cancer patients. A systematic literature review of practices and effects. Ann Oncol. 2011 Jul;22(7):1478-1486. doi: 10.1093/annonc/mdq620. Epub 2011 Jan 3. PMID: 21199887.

[21] Davies A, Waghorn M, Roberts M, Gage H, Skene SS. Clinically assisted hydration in patients in the last days of life ('CHELsea II' trial): a cluster randomised trial. BMJ Open. 2022 Nov 23;12(11):e068846. doi: 10.1136/bmjopen-2022-068846. PMID: 36418131; PMCID: PMC9684991.

[22] Sera L, McPherson ML, Holmes HM. Commonly prescribed medications in a population of hospice patients. Am J Hosp Palliat Care. 2014 Mar;31(2):126-31. doi: 10.1177/1049909113476132. Epub 2013 Feb 12. PMID: 23408370; PMCID: PMC3830696.

[23] Marc Tanghe, Nele Van Den Noortgate, Lara Pivodic, Luc Deliens, Bregje Onwuteaka-Philipsen, Katarzyna Szczerbińska, Harriet Finne-Soveri, Danni Collingridge-Moore, Giovanni Gambassi, Lieve Van den Block, Ruth Piers, PACE, Opioid, antipsychotic and hypnotic use in end of life in long-term care facilities in six European countries: results of PACE, European J Public Health, Feb 2019; 29(1):74–79. https://doi.org/10.1093/eurpub/cky196

[24] Evin A, Denis C, Nizet P, et al. Are the deprescribing guidelines for proton pump inhibitors in palliative care applicable? A monocentric observational study. BMJ Supportive & Palliative Care 2023;13:e928-e932. doi:10.1136/spcare-2023-004542

[25] Rosenberg JH, Albrecht JS, Fromme EK, Noble BN, McGregor JC, Comer AC, et al. Antimicrobial use for symptom management in patients receiving hospice and palliative care: a systematic review. J Palliat Med. 2013;16:1568–74. doi: 10.1089/jpm.2013.0276.

[26] Goksu SS, Gunduz S, Unal D, Uysal M, Arslan D, Tatli AM, Bozcuk H, Ozdogan M, Coskun HS. Use of blood transfusion at the end of life: does it have any effects on survival of cancer patients? Asian Pac J Cancer Prev. 2014;15(10):4251-4. doi: 10.7314/apjcp.2014.15.10.4251. PMID: 24935379.

[27] Chin-Yee N, Taylor J, Rourke K, Faig D, Davis A, Fergusson D, Saidenberg E. Red blood cell transfusion in adult palliative care: a systematic review. Transfusion. 2018 Jan;58(1):233-241. doi: 10.1111/trf.14413. Epub 2017 Dec 1. PMID: 29194669.

[28] Joana Catarina Lima Marinho et al., Benefits of blood transfusions in palliative care patients with advanced cancer. J Clin Oncol. 2021;39(15), e24090-e24090(2021). DOI:10.1200/JCO.2021.39.15_suppl.e24090

[29] Prado, B.L., Gomes, D.B.D., Usón Júnior, P.L.S. et al. Continuous palliative sedation for patients with advanced cancer at a tertiary care cancer center. BMC Palliat Care 17, 13 (2018). https://doi.org/10.1186/s12904-017-0264-2

[30] Tan F, Chen S, Huang L, et al. Continuous palliative sedation in terminally ill patients with cancer: a retrospective observational cohort study from a Chinese palliative care unit. BMJ Open 2023;13: e071859. Doi: 10.1136/bmjopen-2023-071859

[31] Lojo-Cruz, C., Mora-Delgado, J., Rivas Jiménez, V., Carmona Espinazo, F., & López-Sáez, J.-B. Survival Outcomes in Palliative Sedation Based on Referring Versus On-Call Physician Prescription. J Clin Med, 2023;12(16), 5187. https://doi.org/10.3390/jcm12165187

[32] Barathi B, Chandra PS. Palliative Sedation in Advanced Cancer Patients: Does it Shorten Survival Time? - A Systematic Review. Indian J Palliat Care. 2013 Jan;19(1):40-7. doi: 10.4103/0973-1075.110236. PMID: 23766594; PMCID: PMC3680838.

[33] Raghavan K, Copeland TP, Rabow M, Ladenheim M, Marks A, Pantilat SZ, O'Riordan D, Seidenwurm D, Franc B. Palliative care and imaging utilisation for patients with cancer. BMJ Support Palliat Care. 2022 Dec;12(e6):e813-e820. doi: 10.1136/bmjspcare-2018-001572. Epub 2019 Mar 1. PMID: 30826736; PMCID: PMC6773516.

[34] Yabroff KR, Warren JL. High-cost imaging in elderly patients with stage IV cancer: challenges for research, policy, and practice. JNCI 2012;104(15):1113–4. doi: 10.1093/jnci/djs316

[35] Organisation for Economic Co-operation and Development (2023), Health at a Glance 2023: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/7a7afb35-en.

[36] Earle CC, Park ER, Lai B, Weeks JC, Ayanian JZ, Block S. Identifying potential indicators of the quality of end-of-life cancer care from administrative data. J Clin Oncol. 2003 Mar 15;21(6):1133-8. doi: 10.1200/JCO.2003.03.059. PMID: 12637481.

[37] Bruera E, Russell N, Sweeney C, et al: Place of death and its predictors for local patients registered at a comprehensive cancer center. J Clin Oncol 2002;20:2127-2133. doi:10.1200/JCO.2002.08.138

[38] Chino, F., Kamal, A.H., Leblanc, T.W., Zafar, S.Y., Suneja, G. and Chino, J.P. (2018), Place of death for patients with cancer in the United States, 1999 through 2015: Racial, age, and geographic disparities. Cancer, 2018; 124: 4408-4419. https://doi.org/10.1002/cncr.31737