

# **PALLIATIVE CARE IN INTENSIVE CARE UNIT: ANALYSIS OF ONCOLOGICAL PATIENTS PROFILE**

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**Abstract: Introduction:** With an increase in the incidence of cancer, there is greater experience in the management of cancer patients in the ICU. Despite scientific advances, this admission is associated with a worse prognosis. At the same time, there is benefit from the integrated assessment of the palliative team for symptom control and quality of life. **Methods:** This is an observational, retrospective and descriptive study. The profile of cancer patients admitted to the ICU was analyzed between 2015 and 2017, followed up with a palliative care team, and changes in conduct and outcomes were evaluated. Access to medical records and processing of data registered with the IBCC/São Camilo Oncology CEP, approved under Opinion Number 2,752,245. **Results:** There were a total of 67 medical records, predominantly female, mean age of 61.6 years. The most prevalent cancer was breast, followed by ovary and head and neck. Metastatic disease corresponded to 86.6% of the cases. The main reason for hospitalization was sepsis and the justification for integrated monitoring was the prioritization of comfort measures. Changes made were adjustment of analgesia, sedation, reduction of hydration and diet, de-escalation of antibiotic therapy and family support. Among the patients, 67.2% received chemotherapy, of these 9%, in the last 14 days of life. Mean length of stay of 14.7 days, interval between admission and start of integrated follow-up was 9.2 days. Regarding the outcomes, 34.3% of the patients were discharged to the ward and 65.7% died. The Mann-Whitney test was used for comparative analysis with a mean of 6 days for discharge and 5.1 days for death, without statistical significance. **Conclusion:** Cancer patients were admitted to the ICU for acute complications and received the recommended treatment, the presence of metastasis not being a limiting factor. Patients who evolve

with poor prognosis criteria, it is suggested to evaluate the palliative care team to better control symptoms and add criteria for therapeutic programming in order to avoid futile measures of prolonging life.

**Keywords:** Palliative care, intensive care unit, cancer patients.

## INTRODUCTION

Hospitalization of cancer patients in Intensive Care Units (ICU) is a controversial and delicate topic, as it involves concerns related to limited resources and deprivation of critical medical care.<sup>1</sup> Recent data suggest an increase in the number of cancer patients who benefit from intensive care, with improved outcomes.<sup>2</sup> The advances in oncological therapies associated with the improvement of interventions in ICUs, contribute to the survival gain of cancer patients in critical condition.<sup>3</sup> Even patients receiving palliative care, ICU admission may be appropriate for the treatment of reversible and acute conditions.<sup>4</sup> However, there is still a lack of validated data to demonstrate these changes in a scientific context to guide decision making.<sup>5</sup>

Despite these advances, ICU admission worsens the prognosis of cancer patients and its evolution depends on the severity of the acute intercurrent and the number of organ failures.<sup>6</sup> Thus, the prognosis, related to the etiology of the acute complication in the context of life expectancy based on the underlying malignancy, must be discussed before, or shortly after, ICU admission.<sup>7</sup> Long-term ICU stays are also reported to be associated with life-threatening complications.<sup>8</sup> Thus, the prognosis must be re-discussed at frequent intervals, with particular attention to multi-organ dysfunction. For those in whom life expectancy is low, early discussion about palliative support and end-of-life care can elucidate the patient's and/or family's desire to avoid ICU readmissions and direct exclusive

palliative care.<sup>9</sup>

There are few data in the literature on the effect of palliative care in advanced cancer patients admitted to the ICU. It is known that these patients have many physical and psychological symptoms, which are not often addressed in conventional treatment, but when multiple interventions were performed by the palliative care team, a significant improvement in the quality of life of these critically ill patients was observed.<sup>10</sup>

Thus, the present study aimed to evaluate the profile of cancer patients admitted to the ICU, for whom follow-up was requested together with the palliative care team and the main changes in conduct and medical prescription made from this follow-up.

## METHODS

This is a retrospective, observational and descriptive study through the analysis of medical records of patients hospitalized in the ICU sector of Hospital IBCC / São Camilo Oncology, in which an evaluation was requested from the Palliative Care team, during the years 2015 to 2017. The research participants had as inclusion criteria age over 18 years, patients diagnosed with solid tumors and complete medical records.

This study complied with all ethical and scientific principles, as established in Resolution 466/2012 of the National Health Council. Therefore, the study was registered with the IBCC Research Ethics Committee under CAAE number: 91724318.9.0000.0072 and, duly approved under Opinion Number 2,752,245. Waiver of the Free and Informed Consent Term was requested according to resolution 466/2012, since an analysis of the medical records of cancer patients who were hospitalized in the ICU accompanied by the palliative care team, thus in the end-of-life phase, was performed.

## RESULTS

In the three-year period, from 2015 to 2017, 67 medical records were included. Demographic analysis shows that most medical records are female patients (77.6%) and the mean age was 61.6 years, ranging from 34 to 93 years. The most prevalent tumor topography was breast cancer (35.8%), followed by ovarian and head and neck cancer (both with 10.4%) and lung cancer (6%). Patients with metastatic disease accounted for the majority of patients (86.6%). (Table 1).

| Variable                 | Description (N = 67) |
|--------------------------|----------------------|
| <b>Age (years)</b>       |                      |
| Average ± DP*            | 61,6 ± 13,2          |
| Median (min.; max.)      | 61 (34; 93)          |
| <b>Gender, n (%)</b>     |                      |
| Female                   | 52 (77,6)            |
| Male                     | 15 (22,4)            |
| <b>Metastasis, n (%)</b> |                      |
| No                       | 9 (13,4)             |
| Yes                      | 58 (86,6)            |
| <b>Topography, n (%)</b> |                      |
| Breast                   | 24 (35,8)            |
| Head and neck            | 7 (10,4)             |
| Ovary                    | 7 (10,4)             |
| Lung                     | 4 (6)                |
| Prostate                 | 3 (4,5)              |
| Endometrium              | 3 (4,5)              |
| Cervix                   | 3 (4,5)              |
| Colon and Rectum         | 3 (4,5)              |
| Non-melanoma skin        | 2 (3)                |
| Sarcoma                  | 2 (3)                |
| Melanoma                 | 2 (3)                |
| Vulva                    | 2 (3)                |
| Central Nervous System   | 1 (1,5)              |
| Kidney                   | 1 (1,5)              |
| Hidden primary site      | 1 (1,5)              |
| Esophagus                | 1 (1,5)              |
| Bladder                  | 1 (1,5)              |

\*DP – Standard Deviation

Table 1 – Demographic data

Source: Prepared by the Author herself

The main reason for ICU admission was sepsis, which totaled 56.8% of the cases, with 40.3% corresponding to sepsis of a pulmonary focus. Then, neurological disorders with 14.9%, which included stroke, seizures and meningitis. Acute renal failure and hydroelectrolytic disorders were reasons for hospitalization in 11.9% of the analyzed charts. Disease progression was identified in 6% of cases. Respiratory failure caused by acute pulmonary edema and pleural effusion totaled 3% and other causes (arrhythmia, hypovolemic and cardiogenic shock) corresponded to 7.5% of hospitalizations (Table 2).

The justification for the follow-up together with the palliative care team was the non-indication of futile measures to prolong life, defined as Exclusive Palliative Care (EPC) in 83.6% and symptom control in 16.4% of cases (Table 2).

Regarding the outcomes of patients admitted to the ICU, 65.7% died and 34.3% were discharged to the palliative care ward. The mean length of stay of patients in the ICU was 14.7 days (minimum of 1 and maximum of 42 days). The interval of days between admission to the ICU and the start of follow-up by the palliative care team was 9.2 days (minimum of 0 and maximum of 39 days) (Table 2).

| VARIABLES                               | N (%)     |
|---|-----------|
| <b>Reason for ICU admission</b>         |           |
| Pulmonary focus sepsis                  | 27 (40,3) |
| Sepsis cutaneous focus                  | 5 (7,5)   |
| Urinary focus sepsis                    | 4 (6)     |
| Abdominal focus sepsis                  | 2 (3)     |
| Neurological disorders                  | 10 (14,9) |
| Acute renal failure                     | 8 (11,9)  |
| Disease progression                     | 4 (6)     |
| Respiratory failure                     | 2 (3)     |
| Others (hypovolemic shock, cardiogenic) | 5 (7,5)   |
| <b>Reason for Palliative Care</b>       |           |

|  |                |
|--|----------------|
| CPE                                    | 56 (83,6)      |
| Symptom control                        | 11 (16,4)      |
| <b>Outcome in the ICU</b>              |                |
| Discharge                              | 23 (34,3)      |
| Death                                  | 44 (65,7)      |
| <b>ICU time</b>                        |                |
| Average $\pm$ DP*                      | 14,7 $\pm$ 9,9 |
| Median (min.; max.)                    | 13 (1; 42)     |
| <b>Time between ICU and Palliative</b> |                |
| <b>Days</b>                            |                |
| Average $\pm$ DP*                      | 9,2 $\pm$ 9,2  |
| Median (min.; max.)                    | 6 (0; 39)      |

\* DP – Standard deviation

Table 2 – ICU admission

Source: Prepared by the author herself

Regarding the changes in conduct adopted by the Palliative Care team, sedation was adjusted in 68.7% and analgesia in 82.1% of the cases. Antibiotic de-escalation was performed in 44.8% of patients. Hydration reduction was performed in 68.7% and diet reduction in 58.2% of the analyzed charts. Family support was provided in 97%, and the two patients who did not need this support had no family members present during hospitalization. Previous contact with the palliative care team was seen in 23.9% and the annotation of advance directives of will was identified in 6% of the medical records (Table 3).

| VARIABLES                      | N (%)     |
|--------------------------------|-----------|
| <b>Sedation adjustment</b>     |           |
| No                             | 21 (31,3) |
| Yes                            | 46 (68,7) |
| <b>Adjustment in analgesia</b> |           |
| No                             | 12 (17,9) |
| Yes                            | 55 (82,1) |
| <b>De-escalation ATB</b>       |           |
| No                             | 37 (55,2) |
| Yes                            | 30 (44,8) |
| <b>Reduction of hydration</b>  |           |
| No                             | 21 (31,3) |
| Yes                            | 46 (68,7) |
| <b>Diet volume reduction</b>   |           |

|   |           |
|---|-----------|
| No  | 28 (41,8) |
| Yes   | 39 (58,2) |
| <b>Family support</b>                           |           |
| No  | 2 (3)     |
| Yes   | 65 (97)   |
| <b>Annotation of advance directives of will</b> |           |
| No  | 63 (94)   |
| Yes   | 4 (6)     |
| <b>Prior palliative care</b>                    |           |
| No  | 51 (76,1) |
| Yes   | 16 (23,9) |

Table 3 – Changes made by the Palliative Care team

Source: Prepared by the author herself

Among the patients analyzed, 67.2% received chemotherapy as the last previous cancer treatment, with 9% receiving it in the last 14 days of life and 31% in the last 30 days before the start of palliative care. The mean time between the start of follow-up in conjunction with palliative care and the outcome, defined as discharge or death, was 5.4 days (minimum of 0 and maximum of 28 days). For this analysis, the Mann-Whitney test was performed, which resulted in a mean time of discharge from the ICU of 6 days and a mean time of death of 5.1 days ( $p=0.694$ ), without statistical significance (Table 4).

| Variable                                   | Outcome in the ICU (Days) |           | <i>p</i> |
|--|---------------------------|-----------|----------|
|  | Discharge                 | Death     |          |
| <b>Time between palliative and outcome</b> |                           |           | 0,694    |
| average ± DP*                              | 6 ± 8,4                   | 5,1 ± 5,5 |          |
| median (min.; max.)                        | 2 (0; 28)                 | 3 (0; 23) |          |

Mann-Whitney Test

\* DP – Standard deviation

Table 4 – Outcome assessment

Source: Prepared by the author herself

## DISCUSSION

According to the José Alencar Gomes da Silva National Cancer Institute (INCA), with the exception of non-melanoma skin cancer, the most common cancers in men are prostate (31.7%), lung (8.7%), intestine (8.1%), stomach (6.3%) and oral cavity (5.2%). In women, cancers of the breast (29.5%), bowel (9.4%) and cervix (8.1%) will be among the main<sup>11</sup>. Breast cancer is the leading cause of cancer death in women, however, the case fatality rate is relatively low, reflecting a combination of improved early detection and more effective therapeutic interventions<sup>12</sup>. Ovarian cancer corresponds to 4.3%, being the eighth cause of death in women from cancer<sup>11</sup>. In the present study, females accounted for 77.6% of hospitalizations. Breast cancer was the most common, with 35.8%, followed by ovarian cancer. These data reflect the high incidence of breast cancer as well as the high lethality of ovarian cancer.

Data are found in the literature that cancer patients with advanced or metastatic disease are limiting factors for ICU admission due to poor prognosis.<sup>4</sup> However, in high-complexity hospitals with cancer care, such as the one in the present study, advanced disease is not a deterrent to ICU admission. In our study, among all patients, most (86.6%) had metastatic disease and clinical complications were the reasons for ICU admission, such as sepsis (56.8%), neurological disorders (14.9%). It has been shown that, like non-cancer patients, ICU outcomes in cancer patients are related to the need for organ support, severity of acute complications and the number of organ failures.<sup>3, 13</sup> As well as aspects of neoplastic disease, other characteristics influence patient outcomes. Research confirms that need for mechanical ventilation, presence of fungal infection, septic shock, renal dysfunction and poor performance status are factors of worse prognosis for mortality.<sup>14</sup>

Mazutti et al. (2016) performed a retrospective cohort study with patients enrolled in the palliative care program admitted to the ICU to estimate the limitation of advanced life support. It was found that patients with clinical complications must receive treatment in the ICU, but the discussion about prognosis and therapeutic measures must be discussed as soon as possible, and reassessed at frequent intervals for possible change of treatment plan. It concluded that the integration of the palliative care team was relevant for the good practice of orthothanasia<sup>15</sup>.

Study conducted by Zhang, et al. (2016), at Dana-Farber/Brigham and Women's Cancer Center, evaluated the outcomes of cancer patients admitted to the Intensive Palliative Care Unit (IPCU) and demonstrated that more than 90% had metastatic disease, and the majority did not have a defined oncological prognosis. or, they were full investment. However, until the time of discharge from the IPCU, all patients had discussed the invasive measures reported in the medical records and, in 73% of the cases, the protocol "no-resuscitate and no-intubate" was defined. It was concluded that factors such as training professionals in communication skills, "protocols" for discussing early care and a strong multidisciplinary team played a role in these results.<sup>16</sup>

The literature suggests close collaboration between oncologists and intensivists for recognition and decision making in this group of patients.<sup>1</sup> A study carried out with intensivists concluded that doctors are usually in this situation of prognostic evaluation, but they do not feel prepared for it and report difficulty and intense stress.<sup>17</sup> In view of recent concepts, the primary purpose of the ICU must not only be to promote aggressive treatment, but the decision-making process must be based on the principles of palliative

care.<sup>18</sup> Thus, it has become mandatory that intensivists receive training to have the ability and competence to fulfill this role.<sup>19</sup> There are also data in the literature stating that, oncologists who completed an internship in palliative care in their training, were more attentive to refer to palliative care, suggesting that the experience may have increased attention to the benefits of the specialty.<sup>20</sup>

A study conducted by Delgado-Guay M. et al with patients admitted to the ICU and who were evaluated by the palliative care team, demonstrated the presence of severe physical and emotional symptoms, in which multiple interventions were recommended, with a significant improvement in symptoms. The study results suggest that the integration of palliative care improves the quality of life of this group of critically ill patients<sup>10</sup>. In our study, regarding prescription changes, it was necessary to adjust sedation (68.7%), analgesia (82.1%), hydration (68.7%) and diet volume (58.2%). The de-escalation of antibiotics was identified in 44.8% of the medical records. These results reflect the particularity of each patient and the recognition of each symptom related to the therapeutic program by the specialized team. Coelho C. et al describes that decisions must be based on evidence, good practices, clinical experience and judgment. Guides an effective line of communication with the patient, family members and/or decision-maker, and respects the patient's autonomy and dignity.<sup>21</sup>

The definition of dying with dignity recognizes unconditional intrinsic human values such as physical comfort, quality of life, autonomy, purpose, preparation and interpersonal connection. Preserving dignity, avoiding harm, and preventing and resolving conflicts are the responsibilities of the health professional in charge of caring for the patient during his/her end of life. Therefore, there is a paradigm shift, as the focus becomes

alleviating suffering rather than curing the patient's illness.<sup>21</sup>

Regarding cancer treatment, the American Society of Clinical Oncology (ASCO) indicates that chemotherapy administered in the last two weeks of life is a sign of the need to improve clinical practice.<sup>22</sup> Ledoux et al, evaluated patients who died in the ICU in 2010, 42 were oncological and 19% of patients received chemotherapy in the last two weeks of life. The authors concluded that the data suggest difficulty for intensivists and onco-hematologists in identifying the end-of-life stage and that early palliative care could improve this identification and decrease the number of chemotherapy at the end of life.<sup>23</sup> And also about early intervention in palliative care, Norton et al conducted a prospective study with patients admitted to the ICU. One group received the proactive palliative care intervention and the other received usual intensive care. The authors concluded that the group that received the intervention had a shorter length of stay in the ICU with no difference in mortality or discharge rates.<sup>24</sup>

The study by Delgado-Guay (2009) showed an average length of stay of 16 days in the ICU of patients who were referred to the palliative care team, and the interval between admission and evaluation of palliative care was 10 days, while the interval between from palliative assessment to ICU discharge was 6 days. It is suggested that an early assessment of the palliative care team allows for longer contact time with the patient and family, which leads to better symptom control, family support and therapeutic programming with the possibility of discharge to the ward or, death with more comfort. and dignity.<sup>10, 24</sup>

Our group previously carried out a study on the time taken from outpatient oncology referral to palliative care and it was identified that oncology takes an average of two years to refer cancer patients with metastatic or locally

advanced disease to a palliative care team<sup>25</sup>. The ASCO review suggests early involvement, within 8 weeks, for better quality of life, reduction of futile end-of-life procedures, and increased survival<sup>25</sup>. In the present study, it was identified that 23.9% of the patients had had contact with an outpatient palliative care team, and 6% had a note of advance directives of will in their medical records. Considering that 86.6% of the patients had metastatic disease, the early involvement of the palliative care team could avoid futile procedures at the end of life.

The present study has some limitations. This was a retrospective and descriptive study, so there is no way to perform a comparative analysis between groups to assess the benefit of interventions. As it is a single-center study, with a sequence of care flow, it is not possible to generalize these data to other institutions. However, it is possible to reflect on the patients seen daily, and thus provide the creation of new care and referral flows, in order to improve clinical practice.

## CONCLUSION

ICU admissions occur due to acute complications and treatment is performed as recommended, with the presence of metastasis not being a limiting factor. It is suggested that early assessment of the palliative care team adds criteria for decision-making, communication, symptom control, non-use of futile measures to prolong life, and shorter ICU stay. The integrated assessment considers the importance of the medical team in the different specialties, since the knowledge of the oncologist and the intensive care physician is of paramount importance for the care of these patients in critical condition. In view of the difficulty of the topic and, mainly, the individuality of the patient in their specific context, mutual collaboration between the specialties is necessary so that the patient and

family are treated efficiently, humanely and in accordance with their values.

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