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Clinical analysis of the cancer patients who admitted to the emergency room.

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Abstract

Objective: Patients with cancer diagnosis often admit to emergency room with complaints that are directly or indirectly related to their current condition. We aimed to analyze what complaints the cancer patients admit with most, how long the cancer patients who are treated with antitumor treatment admit to the emergency room after the antitumor treatment, which departments were consulted with these patients most and the outcomes of these patients in the emergency room.

Method: In this study, 1946 male and female patients older than 18 years old with oncological diseases who admitted to the emergency room for any complaints were analyzed retrospectively.

Results: 879 (45.2%) of the patients were females and 1067 (54.8%) of them were males. The mean age was 59.1. The most common complaint was abdominal pain with 344 (17.7%) patients. The most common malignancy was lung cancer with 335 (17.3%) patients. 610 (31.3%) of the patients in the study were still receiving chemotherapy whereas 1052 (54%) of the patients never had chemotherapy. 285 (14.6%) patients were not receiving chemotherapy although they previously had. It was found that the patients admitted to the emergency room a mean of 69.9 days after the chemotherapy. 651 (33.5%) of the patients were not consulted with any departments whereas other patients were consulted with other departments, with medical oncology being the most consulted department. 1017 (52.2%) patients were discharged from the emergency room and 895 (46%) patients were hospitalized. 33 patients (1.7%) died in the emergency room.

Conclusions: Patients with lung cancer admitted to the emergency rooms more often. Cancer patients admitted to the emergency department with abdominal pain and shortness of breath most. Emergency physicians have increased responsibility for tests, treatment and hospitalization of these patients as the patients are generally older and have multiple conditions.

Keywords: Cancer, Emergency room, Oncology.

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Introduction

Death caused by cancer is the second most common reason after cardiovascular causes in our country, Turkey. With the increase in older population, an increase in new cancer cases and side effects of cancer treatment are expected [1]. This increase affects emergency rooms as well as oncology departments in terms of volume and work force. Cancer patients can admit to emergency rooms for complaints caused by their condition like pain, bleeding and respiratory distress as well as the metabolic, infectious and endocrine problems caused by their condition. In addition to this, these patients can admit for febrile neutropenia or hypersensitivity reactions caused by antitumor medication administered for their treatment, or malnutrition or lack of care caused by inadequacy of social conditions. They also can admit to the hospital for trauma, cardiovascular diseases, pulmonary diseases and other conditions that are not caused by cancer [2,3]. Usually, the benefits of emergency rooms to the cancer patients are more than expected.

We aimed to analyze what complaints the cancer patients admit with most, how long the cancer patients who are treated with antitumor treatment admit to the emergency room after the antitumor treatment, which departments were consulted with these patients most and the outcomes of these patients in the emergency room in a period of one year.

Materials and Methods

1946 male and female patients aged over 18 with an oncological disease in their medical history who admitted to our emergency clinic with any complaint between 01/01/2014 - 31/12/2014 were included in the study. The study was

approved by İnönü University Faculty of Medicine Ethics Committee. Age, gender, admission complaint, oncological diagnosis, chemotherapy status of the patients and the days since the last chemotherapy if the patient had chemotherapy, the tests ordered for the patient, the consulted departments, hospitalization status and hospitalized department if the patient was hospitalized were recorded. The Data was summarized as frequency, percentage, mean and standard deviation and median (min-max). IBM SPSS Statistics 23.0 software was used to calculate descriptive statistics.

Results

879 (45.2%) of the patients who admitted during the study period were females and 1067 (54.8%) patients were males. Mean age was 59.1 years and median value was 61. 344 (17.7%) patients had the most frequent complaint, abdominal pain. 273 (14%) patients had shortness of breath, 194 (10%) patients had fatigue, and 137 (7%) patients had fever complaint (Table 1).

Table 1. *The distribution of patients' admission complaint.*

Complaint	Patient Count (%)
Abdominal pain	344 (17.7%)
Shortness of breath	273 (14%)
Fatigue	194 (10%)
Fever	137 (7%)
Nausea	132 (6.8%)
Pain	103 (5.3%)
Other	763 (39.2%)

Table 2. *Diagnoses of the patients who admitted to emergency room.*

Malignancies	Patient Count (%)
Lung cancer	335 (17.3%)
Breast cancer	204 (10.5%)
Colon cancer	148 (7.6%)
Stomach cancer	124 (6.4%)
Lymphoma	121 (6.3%)
Ovarian cancer	97 (5%)
Prostate cancer	79 (4.1%)
Rectal cancer	71 (3.7%)
Other	767 (39.1%)

The most common malignancy among the patients was lung cancer with 335 (17.3%) patients, whereas 204 (10.5%) patients had breast cancer, 148 (7.6%) patients had colon cancer and 124 (6.4%) patients had stomach cancer. Other types were rare. One (0.1%) patient had malign epithelial tumor (Table 2).

While 610 (31.3%) of the patients in the study were still receiving chemotherapy, 1052 (54%) patients did not receive any chemotherapy. 285 (14.6%) patients previously had chemotherapy; but were not receiving at the time of the study. The patients in the study admitted to emergency rooms with a mean of 69.9 (0-7665) days after the chemotherapy. No tests were ordered for 210 (10.8%) of these patients while only laboratory tests were ordered for 137 (7.1%) patients and only radiology tests were ordered for 6 (0.3%) of the patients whereas both laboratory and radiologic tests were ordered regarding their complaints for 1590 (81.8%) of the patients.

651 (33.5%) of the patients whose pre-diagnoses were defined after the tests were not consulted with any departments while 245 (12.6%) patients were consulted with medical oncology. 144 (7.4%) of the patients were consulted with general surgery department, and 130 (6.7%) of the patients were consulted with medical oncology as well as the department of infectious diseases (Table 3).

Table 3. *Consultation rates that are performed for patients.*

Consultation	Patient Count (%)
Non-consulted patients	651(33.5%)
Medical oncology	245 (12.6%)
General surgery	144 (7.4%)
Medical oncology+Infectious diseases	130 (6.7%)
Pulmonology	111 (5.7%)
Hematology	106(5.4%)
Other	559 (28.7%)

As a result of these procedures, 1017 (52.2%) patients were discharged after the tests and consultations whereas 895 (46%) of them were hospitalized. 33 (1.7%) of the patients died in the emergency room. Two (0.1%) patients left the emergency room voluntarily by rejecting the treatment while their tests were running. 322 of the hospitalized patients were hospitalized in to the medical oncology department, 125 to hematology department, 106 to general surgery department, 91 to pulmonology department and the rest of them were hospitalized in to other related departments after necessary consultations.

Discussion

The importance of the cancer is increasing as the number of cancer patients is increasing. According to the World Health Organization records, 6 million people in the world lose their lives because of cancer. In addition to that, 10 million people are diagnosed with cancer every year. 47% of these new cancer cases are females and 53% are males. It is estimated that this number will increase in years and the number of new cancer cases to reach 20 million by 2020 [4,5]. In a study, it was reported that mean age of the cancer cases admitting to emergency room was 62, and 65% of these patients were males and 35% of them were females [6]. However, in another study

conducted by Yaylacı et al. involving 174 patients, 97 (55.7%) of the patients were males and 77 (44.3%) were females, and the mean age was reported to be 58.2 ± 14.5 [7]. In a study conducted by Kerrouault et al., they reported that the mean age of the patients admitting to emergency room was 62 and 65% of the patients were males [6]. In our study, 1067 (54.8%) of 1946 cancer patients who admitted to emergency room were males and 879 (45.2%) of them were females and the mean age was 59.1.

The admission of cancer patients to emergency rooms is generally unplanned. The reason for these admissions could be because of the disease as well as the treatment they are receiving. In a study by Gibson et al., it is reported that 69.4% of the patients admitted to the hospital in 7 days and 18.9% admitted in first 48 hours apart from their planned hospital visits [8]. In our study, 610 (31.3%) of the patients were continuing their chemotherapy while 1052 (54%) of the patients did not receive chemotherapy previously and 285 (14.6%) patients were not receiving chemotherapy although they received chemotherapy before. It was found that the patients admitted to the emergency room with a mean of 69.9 days after their treatment.

Oncology related admission could indicate progression of the disease and decreased chance of survival [7]. In admissions caused by acute and life threatening causes, correct management in the emergency rooms could prevent serious morbidity and death [9-11]. In a study by Yücel et al. involving 336 patients, pain was the most common admission complaint with 107 (23%) patients. It was followed by shortness of breath with 80 (17%) patients, general condition deterioration with 58 (12%) patients and fever with 42 (9%) patients [12]. In Yaylacı et al.'s study, the most common complaint was shortness of breath (22%) [7]. In our study, the most common complaint, abdominal pain presented in 344 (17.7%) of the patients. In addition to this, 273 (14%) patients had shortness of breath, 194 (10%) patients had fatigue and 137 (7%) patients had fever complaint. Frequent admission with shortness of breath can be explained with the fact that the most common type of cancer in the world is lung cancer.

Swenson et al. reported that the most common cancer type in oncological admissions was lung cancer in their study [2]. Yücel et al. reported that the most common admission by oncological patients to emergency was thorax related diseases with 26%, followed by gastrointestinal system tumors with 26% and genitourinary system tumors with 17% and breast cancer patients with 10% [12]. Consistent with other studies and literature, lung cancer was the most common cancer type among the patients who admit to emergency room with 335 (17.3%) patients. It was followed by breast cancer cases with 204 (10.5) patients, colon cancer cases with 148 (7.6%) patients and stomach cancer with 124 (6.4%) patients. Although the most common cancer type was lung cancer in our study, which is consistent with the literature, the admission complaint was abdominal pain, which was not correlated with other studies. However, in another study, cancer related causes were found to be below 0.1% among 6317 patients aged below 50 who were assessed for new onset abdominal pain whereas the cancer related causes were found to be 4.1% among 2406 patients older than 50 [13].

In the laboratory tests of the patients admitting to emergency rooms, complete blood count values were found to be the one with most pathologies and the most common of these was found to be anemia [14]. Swenson et al. reported the rate of anemia 11% [2]. Accordingly, laboratory work up was ordered in 1727 (88.9%) of our patients and evaluated for any biochemical alterations.

In a study by Koçak et al., 70% of the oncological patients who admitted to emergency room were consulted with other departments and the most consulted department was internal medicine with 55% rate [14]. In our study, 1295 (66.5%) of the patients were consulted with other departments. Medical oncology consultation was the most common consultation with 245 patients in our study, which is consistent with Koçak et al.'s [14] study. Abdominal pain was the most common admission complaint in our study, and the second most common consultation was to general surgery (department?) with 144 patients.

In a study by Koçak et al., it was reported that only one third of the patients admitting to the emergency room were discharged from the emergency room and the rest of the patients were hospitalized and 19% of the patients died [14]. In Yücel et al.'s study, 165 (35%) of the patients were discharged from the emergency room whereas 303 (65%) of the patients were hospitalized, and 10 (3%) of the patients died in the emergency room [12]. In our study, 1017 (52.2%) of the patients were discharged after tests, treatment and consultations and 895 (46%) of the patients were hospitalized. 33 (1.7%) of the patients died in the emergency room. Hospitalization and discharge rates in our study are inconsistent with other studies and this might be due to the differences between admission complaints, test results of the patients, sociocultural level of the patients and the level of emergency rooms.

Conclusion

Patients with oncological diagnosis might admit to the emergency rooms for direct or indirect effects of their diseases or reasons that are unrelated to their diseases. The patients with lung cancer are the most common oncological patients who admit to the emergency rooms, as shown by many studies. Cancer patients admitted to the emergency room most commonly with abdominal pain and shortness of breath complaints. Most of these patients were consulted with other departments because of their problems and almost half of them were hospitalized. This indicates that oncological patients who admit to the emergency rooms should be assessed in detail because of their increased rate of multiple problems. The increase in cancer cases increases load of emergency rooms and other departments. There is a big responsibility and duty on emergency rooms in the process of cancer diagnosis and treatment in determining risky cases in which complications

might occur and evaluating if the findings are related to an oncological emergency or not.

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