

# Treatment outcome of oncologic patients treated in emergency department at black lion specialized hospital, Ethiopia

## Abstract

**Background:** Emergency department is a section of an institution that is staffed and equipped to provide rapid and varied emergency care, especially for those who are stricken with sudden and acute illness or who are the victims of severe health problem. Oncology patients in emergency department are causing a significant burden for health care system due to late seeking of care by the cancer patient to the Hospital at an advanced stage.

**Methods:** A cross-sectional study was conducted at black lion Specialized Hospital. A one-year data was abstracted of 426 cancer diagnosed patients. The extraction was done from April 1 to April 30 2017. Data abstraction format was developed based on the nature of the record.

**Result:** Four hundred twenty-six oncology patients record were analyzed. The mean age was 42.5 years. Two hundred twelve (49.8%) and 214 (50.2%) were male and female respectively. Gastrointestinal cancer 128(30%) was the most common cancer type followed by Hematologic 81 (19%) cancer. Based on symptoms the common complaints were pain (14.8%), Easily Fatigability (11.7%), Dysphagia (11.5%) and Bleeding (10.8%).

**Conclusion:** The common types of cancer diagnosed at the emergency department were Gastro-intestinal and Hematology malignancies. Pain was the predominant complain among oncology patient present in an emergency department. Most of cancer patients present in emergency department is due to the effect of tumor. One tenth of the patient died while receiving care.

**Keywords:** Oncology, Pattern, Outcomes and Length of stay

## Introduction

Cancer is one of the Leading causes of morbidity and mortality all over the world. According to WHO report there are about 14million new cases were reported on 2012. Globally cancer is a second leading cause of death and 8.8million deaths was recorded in 2015 that means about 1.6 deaths is due to cancer. Cancer cause an estimated 70% in low and middle-income countries the major reason in high mortality in low income country could be delay in presentation, Unable to get diagnosis and treatment. In 2015 report indicated, only 35% low income country patients and more than 90% high income countries have access to treatment.<sup>1</sup> Oncological emergency care concern is including overcrowding, long waiting time and Lack of access to specialized care. Cancer patient also visited frequently emergency department (ED) when they are near to end life with Late Stages of Cancer. Cancer patients in ED helps to recognize life threatening presentation but not directly related to care delivered in ED. Cancer care quality issue are such as inadequate access and utilization for prevention, diagnosis service inadequate and un coordinated care or fragmented healthcare delivery, poor symptom management monitoring and controlling of complication.<sup>2</sup> As malignancy is a common problem of the world and cancer patients also at high risk developing wide range of medical emergencies. The medical emergency can present as a result of local tumor effect of rapid metastasis and may appear secondary to a tine or plastic treatment. Oncologic emergency can be broadly classified into four categories (Metabolic, Hematologic, Structural and Treatment Related Emergency). 5-10% incidence rate with Hypercalcemia,

this problem should be corrected as much as early in ED. Almost all cancer patients ED visits are due to acute Tumor Lysis Syndromes and Lactic Acidosis.<sup>3</sup> Tumor Lysis one of life threatening clinical condition most commonly encounters ED Physician and Nurses. Patients with >80% Hematologic Malignancies have a chance to develop Febrile Neutropenia, which are eligible for acute care and even forward admission. Leukocytosis is one of serious oncologic emergency in which mortality risk is more than 40% if untreated early. Spinal Cord Compression so the commonest ED presentation among oncology Neurologic emergency patient. Superior Vena Cava (SVC) obstruction is a common problem, which present with chest pain, distended neck and facials welling. Other problem of oncology patient that need emergency care is due to increased ICP, urine obstruction, anaphylaxis and others.<sup>4</sup> Therefore, many conditions related to malignancy and their treatment can be life threatening and need a very comprehensive and urgent emergency care. In Spain from 112patients, most common cause to seek emergency care was 21patients with Fever, 15patient's Dyspnea a acute Abdominal pain and pain about 11patients; this all patients need admission and emergency care.<sup>5</sup> According to World cancer declarations progress report in 2016, Ethiopia cancer country profiles reported that mortality of Male is 14,500 and Female were 26,200<sup>6</sup>.

A study done in black lion specialized hospital oncology departments stated that 10% of patients didn't come early to Hospital. About 47% was Gynecological Malignancies, 26% Breast cancer, 22% Head and Neck cancer, Sarcoma 15%, GI 12%, Hematologic and

Urologic 9% and Thyroid 5%. As this study shows to us, as far as Oncology patient presentation is very late they will need frequency care to ED<sup>7</sup>. Emergency patient length of play has a significant role on emergency service and for patient life quality. Therefore, it is important to assess Treatment outcome of Oncologic Patients treated in Emergency department.

## Methods

### Study area and period

This study was conducted at black lion Specialized Hospital, Adult Emergency Department from April 2016 to March 2017. It is the largest referral hospital and the only oncologic treatment center in the country. The emergency department provides emergency care for more than 1847 emergency patients per month every year. This department has more than 56 beds, 62 Nurses and about 6 emergency Physicians working permanently. The hospital provides service in Internal Medicine, Surgical, Pediatric, Gynecological and Obstetrics, Oncology. This hospital provides a tertiary level referral treatment and it is opened for 24 hours for emergency services.

### Study design

Across- sectional study was conducted on oncology patients in BLSH adult Emergency department from April 01 2016 to March 31, 2017.

### Population

The study populations were all emergency patients who received treatment in black lion Specialized Hospital emergency department during the study period. All individuals above 13 years old and admitted with oncologic problems were included from the study. Those with incomplete medical records were excluded in this study.

### Sample size determination

Since the objectives of this study is to determine the treatment outcome of oncology patients in adult ED for one year the records of all adult oncology patient admitted to the ED during the April 01 2016 to March 31, 2017.

### Data collection tools and procedures

The data collection instrument was pre-tested for necessary modifications in the questionnaire. The questionnaires were prepared in English language, as far as am using it to collect from secondary data source. The collected data were compared and checked for completeness, missed questions by the supervisors. Two supervisors and five at a collectors who have previous work experiences on data collection were recruited. They were trained and oriented for one day on the contents of the questionnaire and how to collect information from secondary data sources.

### Data analysis

The quantitative data were entered by using, computer processing, and SPSS software version 20.00. The data description methods were by using proportion rates, percentages, ratios, Frequency distributions tables.

### Ethical approval

This study was conducted after obtaining ethical approval from the ethical review board of college of health sciences, Addis Ababa

University. Written letter was presented for the emergency department from the college of health sciences. The clinical director was informed about the purpose of the study and confidentiality of the clients' information. After a thorough discussion with the clinical director, letter of support was written for the record and archive officer. The record and archive officers were informed about the study by the data collectors.

## Result

Most of the patients were at age of 25-49.9 years old. The death rate is higher in the age of 50-74.9 years as compared to the age below 25 years. Majority of the patients admitted in the hospital for less than 10 days. Most of the patients were married (Table 1).

**Table 1** socio-demographic characteristics of the patients and their treatment outcome in the black lion specialized hospital emergency department.

| Variables                             | Response categories | Treatment outcome |            |
|---------------------------------------|---------------------|-------------------|------------|
|                                       |                     | Death             | Alive      |
| <b>Age in years</b>                   | 1-24.9              | 5(7.7%)           | 60(92.3%)  |
|                                       | 25-49.9             | 23(11.2%)         | 183(88.8%) |
|                                       | 50-74.9             | 21(14.6%)         | 123(85.4%) |
|                                       | 75-99.9             | 0                 | 11(100.0%) |
| <b>Region</b>                         | Addis Ababa         | 19(15.0%)         | 108(85.0%) |
|                                       | Oromia              | 14(10.5%)         | 119(89.5%) |
|                                       | Amhara              | 3(6.3%)           | 45(93.8%)  |
|                                       | SNNPR               | 5(9.6%)           | 47(90.4%)  |
|                                       | Others*             | 8(12.1%)          | 58(87.9%)  |
| <b>Length of stay in the hospital</b> | 1-10 days           | 46(12.1%)         | 333(87.9%) |
|                                       | Above 11 days       | 3(6.4%)           | 44(93.6%)  |
| <b>sex of patient</b>                 | Male                | 23(10.8%)         | 189(89.2%) |
|                                       | Female              | 26(12.1%)         | 188(87.9%) |
| <b>Marital status of the patient</b>  | Married             | 33(11.9%)         | 245(88.1%) |
|                                       | Single              | 12(10.7%)         | 100(89.3%) |
|                                       | Windowed            | 1(12.5%)          | 7(87.5%)   |
|                                       | Divorced            | 3(10.7%)          | 25(89.3%)  |

\*Tigray, Somalia, Dire Dawa, Afar, BenishangulGumuz, Gambella and Harari

### Types of diagnosed cancer

Gastro-intestinal cancer was the leading cause of death followed by gynecologic cancer. The least cause of death was skin cancer followed by urinary tract cancer (Table 2). The common chief complaints of the patients at the time of hospital visit were pain followed by fatigue and bleeding (Table 3).

**Table 2** comparisons based on the type of diagnosed cancer between dead and alive in black lion specialized hospital emergency department.

| Variables               | Treatment Outcome |           |
|-------------------------|-------------------|-----------|
|                         | Dead              | Survive   |
| <b>Diagnosed cancer</b> | Head and Neck     | 4(9.3%)   |
|                         |                   | 39(90.7%) |

Table continued....

| Variables         | Treatment Outcome |            |
|-------------------|-------------------|------------|
| Gastro-intestinal | 13(10.2%)         | 115(89.8%) |
| Breast            | 3(14.3%)          | 18(85.7%)  |
| Gynecologic       | 10(20.0%)         | 40(80.0%)  |
| Skin              | 0                 | 1(100.0%)  |
| Urinary           | 1(2.5%)           | 39(97.5%)  |
| Lung              | 6(24.0%)          | 19(76.0%)  |
| Lymphoma          | 4(23.5%)          | 13(76.5%)  |
| Hematologic       | 7(8.6%)           | 74(91.4%)  |
| Sarcoma           | 1(8.3%)           | 11(91.7%)  |
| Others*           | 0                 | 8(100.0%)  |

\*pancreatic cancer, thyroid cancer, prostate cancer

**Table 3** A comparison based on the chief complaints at the time of admission between dead and survivors in the black lion specialized hospital emergency department

| Variable                             | Treatment Outcome |            |
|--------------------------------------|-------------------|------------|
|                                      | Dead              | Survive    |
| <b>Chief complain of the patient</b> |                   |            |
| Pain                                 | 2(3.2%)           | 61(96.8%)  |
| Fatigability                         | 8(16.0%)          | 42(84.0%)  |
| Neck and Face Swelling               | 0                 | 17(100.0%) |
| Neurologic Symptoms                  | 1(5.6%)           | 17(94.4%)  |
| Dysphagia                            | 6(12.2%)          | 43(87.8%)  |
| Dyspnea                              | 9(23.7%)          | 29(76.3%)  |
| Fever                                | 2(8.3%)           | 22(91.7%)  |
| Infection                            | 8(88.9%)          | 1(11.1%)   |
| Nausea and Vomiting                  | 8(21.1%)          | 30(78.9%)  |
| Bleeding                             | 1(2.2%)           | 45(97.8%)  |
| Others*                              | 4(5.4%)           | 70(94.6%)  |

\*cough, constipation, rectal bleeding, breast lump, frequent urination

## Discussion

The main complains of oncologic patients were pain (14.8%). This finding is in line with a study finding in Australia (13%), Spain (22.5%), Italy (28.9%) and Korea (19%) in which Pain is the first and common symptom. Other report shows in Italy and USA Minneapolis Pain is the second complain.<sup>8-12</sup> This study demonstrates Bleeding (10.9%), Nausea and Vomiting (8.9%), and Fever(5.6%) are common complaint by patients. Similar report shows in Germany, Australia and Switzerland.<sup>13</sup> Other study shows length of stay of oncology patients in ED is 2hour are port in Germany, Australia and Switzerland.<sup>13</sup> When we compare with Australia the range was from minutes to hour (57minutesto40hours) median6.8hrs9.In Taiwan and Cairooncology patient length of stay in ED is shorter than TASHED, 2.91 and 3.6hrs.<sup>14,15</sup> According to the above study other countries have a very short length of stay of oncology patients when compared with

our study which accounts majority one to ten days.

Among 426patients, 81% have solid tumor and19% of them have Hematologic malignancies. A Korean study showed 88.8% solid tumor and 11.2% Hematologic Malignancies emergency.<sup>12</sup> Based on solidity and Hematologic emergency malignancies shows that nearly equal number. The Nigerian report<sup>16</sup> shows 54.6% of them are Hematologic malignancies and 45.4% of them are solid malignancies. In Victoria, Australia research report shows 58% solid tumor and 42% Hematologic.<sup>9</sup> Form the above reports different countries report shows higher frequency on solid malignancies, which is the same with our study findings.

About 30% is gastrointestinal cancer (Esophageal, Gastric and Ano-rectal) recorded in black lion specialized hospital. A research in Australia have reported only 10.5% (UpperGI, Digestive tumor and Colorectal) this result shows gastro intestinal cancer in high when compared with this study. The other report from Turkey showed 25.4% is gastrointestinal cancer, this shows less result than this study but Taiwan study reports34.8%, this is higher than the current study. GI cancer is the first common cancer type seen in black lion specialized hospital, but in Iran and Turkey it is in second place, in Australia fourth place.<sup>17,18</sup>

Gynecologic can ceris the third cancer seen in our study; it accounts11.7%, and other studies 6thcancer type in Canada. In Australia report also put Gynecologic cancer on fifth place.<sup>9</sup> This shows gynecologic emergency cases are more common in black lion hospital than other countries. Emergency department patient outcome of Australian research report discovered that 4.6% death, and 4.5% discharged to home. This study has less death than the current study.<sup>9</sup> This could be due to the fact that standard treatment is not well organized in the current study setting.

## Conclusion

In black lion specialized hospital showed Gastrointestinal tract, Hematology, Gynecology, Head and Neck, Urinary, Breast, Lung cancer are the most common cancer diagnosed from April 2016 to March 2017.Lymphoma, sarcoma and skin are rare cancer diagnosed in the hospital. The common symptoms of cancer patient present with in the hospital were pain, dysphagia, fatigability and bleeding complained by cancer patient. Dyspnea, Fever, Head and neck swelling, Neurologic symptoms and Nausea/Vomiting are rare symptoms complained by patient. Regarding the treatment outcome of Oncologic patients, 49 were dead and 377 were survived.

As most of the patients seek health care at later stage it is important to increase their health seeking behavior and reduce the mortality rate. Further study should be conducted with a larger sample size to identify the factors associated with the survival status of the oncologic patients.

## Acknowledgements

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## Conflict of interest

The author declares that there is no conflict of interest.

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