

Hematologic Malignancies 2013 Retrospective Study at Truman Medical Center

Kristen Strasser, MD & Abdulraheem Qasem, MD

Introduction:

Hematologic Malignancies includes malignant diseases of the bone marrow and primary cancer of the lymphoid tissues. It includes leukemia, lymphoma, myelodysplastic syndrome (MDS), and plasma cell disorders. Leukemias are divided into acute and chronic and myeloid or lymphoid forms. Lymphomas are divided into Hodgkin and Non Hodgkin variants. We reviewed all the cases of leukemias and lymphomas diagnosed and treated in 2013 at Truman Medical Center. We obtained the list of patient and diagnosis from tumor registry database and then extracted the data from the electronic medical records. The goal of the study is to evaluate whether the patients were treated according to National Comprehensive Cancer Network (NCCN) guidelines. Did patients receive Granulocyte-colony stimulating growth factor (G-CSF) when indicated? Did they receive appropriate antimicrobial prophylaxis?

Study:

A list of patients and diagnoses were obtained from our tumor registry database. We then did a retrospective chart review to abstract the data of stage, treatment received, G-CSF and antimicrobial prophylaxis administration, and outcome. We then evaluated if the recommended treatment was in accordance to NCCN guidelines. We then looked whether the patients received all the recommended treatment, and, if not, what were the barriers to treatment?

Data:

Total of 26 patients were diagnosed with lymphoma or leukemia in 2013. See (table 1) and Figure (1). The recommended treatment was in concordance of NCCN guidelines in 26/26 (100%). However, only 20/26 (76.92%) finished or fully received the recommended treatment.

Table (1): Histologic Type

	Number of Cases	Percent
DLBCL	5	19.2
Burkitt's Lymphoma	1	3.8
Follicular Lymphoma	1	3.8
CLL/SLL	4	15.4
PMLBCL	1	3.8
Hodgkin Lymphoma	2	7.7
Other Lymphoma	4	15.4
AML	6	23.1
ALL	1	3.8
CML	1	3.8
Total	26	100.0

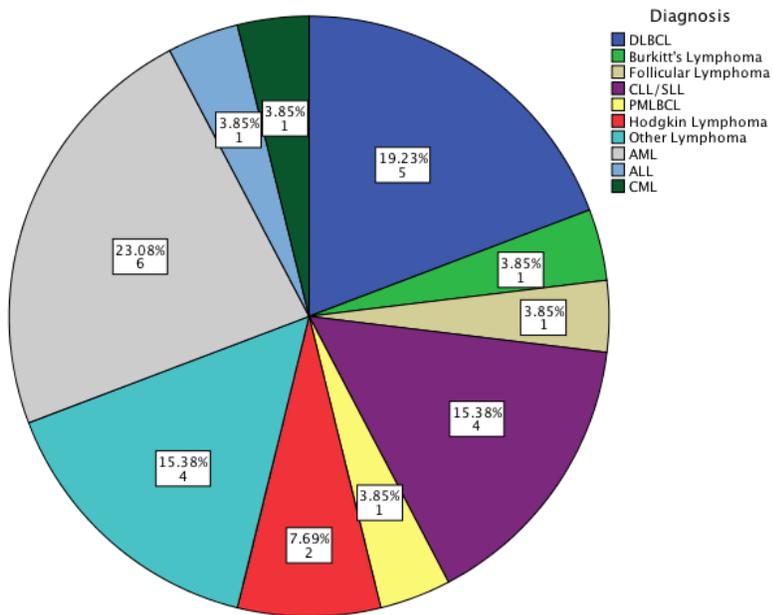


Figure (1): Distribution of hematologic malignancies.

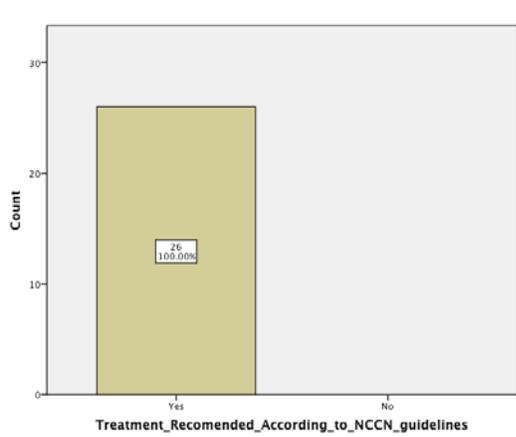


Figure (2)

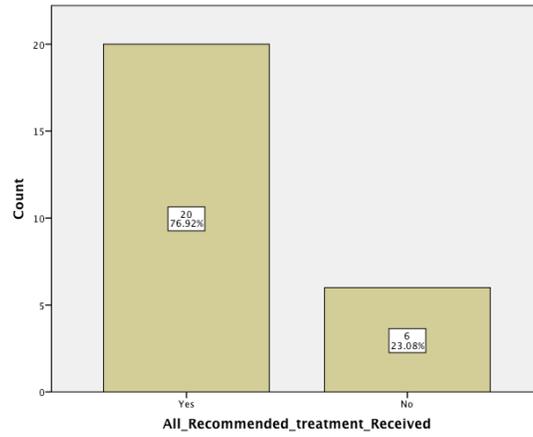


Figure (3)

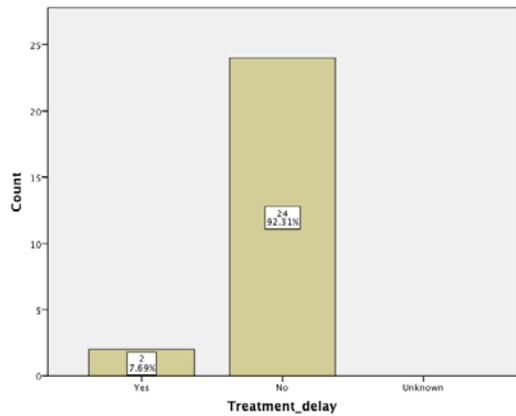


Figure (4)

Of the 6 of 26 patients who had incomplete or missing treatment; 1/ 6 (16.5 %) of these patients incomplete treatment was due to our medical error, hand off in inpatient to outpatient chemotherapy, 3/6 (50%) due to patient preference/refusal, 1/6 (16.5%) due to illegal status and inability to obtain radiation and later bone marrow transplant, and 1/6 (16.5%) patient disappeared after diagnosis (last visit was ER encounter for alcoholism).

Supportive Care:

G-CSF was indicated in 10 patients and all of them received it (100% compliance with guidelines). The compliance with anti-microbial prophylaxis was 92.31%, only 2/26 (7.69%) didn't receive anti-microbial prophylaxis when it was indicated. See Figure (5 & 6).

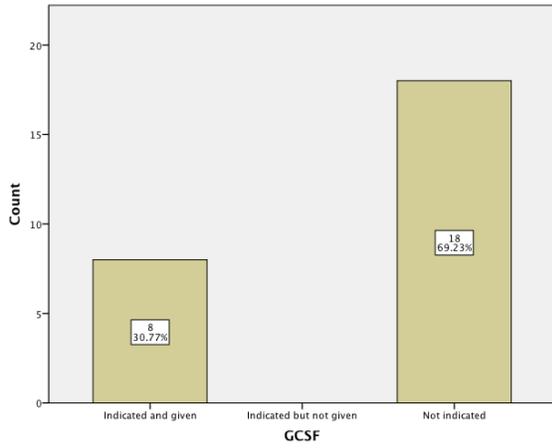


Figure (5)

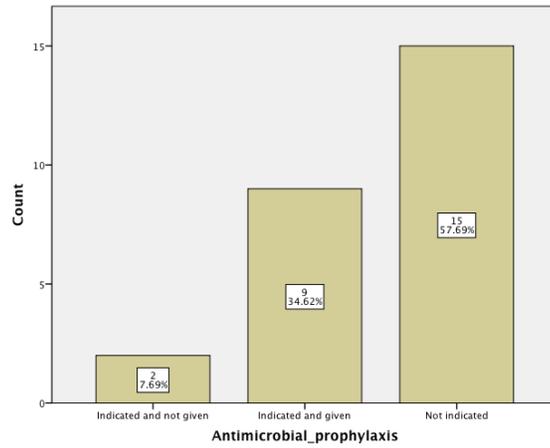


Figure (6)

Outcome:

We gathered the outcome data from the documented note on the last hospital visit or according to the last recorded data in the tumor registry.

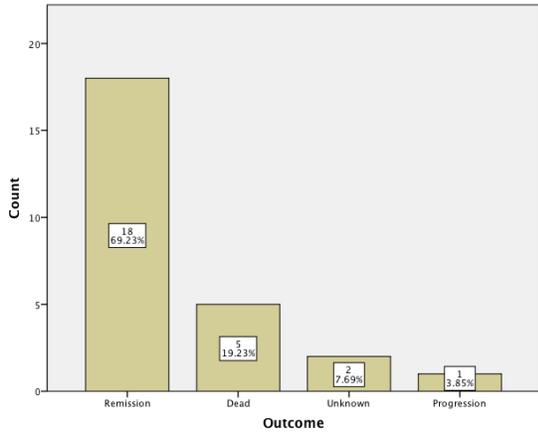


Figure (7)

To summarize, 69% of our leukemia/lymphoma patients diagnosed in 2013 achieved remission. 19% of patients expired by the end of this study (5 patients). 1 of them died d/t not receiving recommended treatment, 3 died despite receiving treatment (1 not full treatment d/t lack of ability to obtain transplant), and 1 died likely d/t disease not related to his malignancy.

Improvement in the care:

In 12/26 (46.35%) of the patients, improvement could be made in some way (see Table -2 and Figure 8)

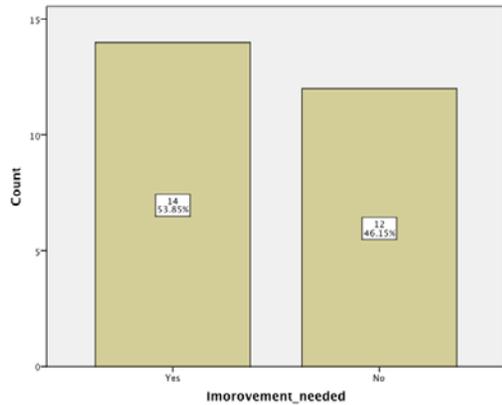


Figure (8)

Table (2):

Number of patients		Deficit
6	50%	Didn't receive all recommended treatment
2	16.5%	Delay in diagnosis.
2	16.5%	Delay in treatment due to complications of treatment.
2	16.5%	Didn't receive Anti-microbial prophylaxis when it was indicated.
12	100%	

Conclusion:

All the recommended treatment was in accordance to NCCN guidelines. However 24% of the patient didn't complete all the recommended treatment. The majority of these patients' incomplete care were due to patient refusal. In one case, it was due to undocumented immigration status and inability to obtain BMT and in another, was due to medical error in transition of care between inpatient and outpatient settings.

All of our patient did receive G-CSF when it is indicated (100% compliance). 92% of patients received anti-microbial therapy when it was indicated.

Most of our disease- specific outcome is consistent with national average outcome. Given the small number of these cases, the power of our study is low.

There are a lot of barriers that prevent us from delivering all the recommended care to our patients. Although most of these barriers are due to patient factors, some are due to physician and system factors.

Here are ways we can consider to overcome some of these barriers:

1. Discuss with physicians, chemotherapy nurses, and oncology pharmacists a way to communicate transition of care between inpatient and outpatient chemotherapy. Will a more uniform EMR reduce medical errors?
 - a. Will discuss timeline for institution of Oncology EMR with IT.
2. Work with surgery clinic, pathology staff, and radiology to decrease the delay in the diagnostic time for our cancer patients, if possible.
 - a. Will discuss this with specialists at tumor board
3. Obtain Institution access to NCCN chemotherapy templates as they provide evidence- based guidelines on indications for routine G-CSF and antimicrobial prophylaxis and will standardize supportive care for each chemotherapy regimen
 - a. We will obtain subscription to NCCN templates
 - b. In the future, will re-assess compliance of supportive care for our 2015 Leukemia and Lymphoma patients after access to NCCN templates
4. Working on access to more clinical trials involving these diseases.
 - a. We have teamed with NCI designated KU and are actively working on improving clinical trial enrollment.
5. Active recruitment of patients who miss their appointments. We may get the patient navigator more involved in following up on those patients and identify the barriers to follow up. For one patient, barrier was undocumented status.
 - a. We will utilize more aggressively our in-clinic social and psych services and resources to improve patient adherence