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ORIGINAL ARTICLE

Awareness of Leukemia Among Medical Students

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ABSTRACT

Objectives: The goal of current study is the assessment of awareness and knowledge about the leukemia among medical students.
Background: Leukemia is a malignant disorder characterized by abnormal hematopoietic development and abandoned production of WBCS and their precursors in bone marrow and blood. It is the leading cause of death in children due to cancer.
Design: A questionnaire having 14 close ended questions is given to 200 students. Data of 150 students was included in the studies while other was excluded due to incomplete information.
Result: It is shown by the result that the knowledge of leukemia among medical students is 71.3%. 25.3% said leukemia is inherited, and 54% think it can acquired through blood transfusion, only 7% students know about its type, and 48.7% students think survival rate is decreasing with age. The result of statistical analysis shows significant results.
Conclusion: There is a strong relationship between leukemia and Down syndrome but majority of students don't aware about this, therefore an educational program is required for medical students to improve their knowledge about leukemia.

INTRODUCTION

Leukemia is a malignant disorder characterized by abnormal hematopoietic development and abandoned production of WBCS and their precursors in bone marrow and blood. It is commonly accompanied by the reduction of further hematopoietic types such as platelets erythrocytes that leads to anemia and increased vulnerability to bleeding disorders and infections [1]. It is the leading cause of death in children due to cancer. It is classified into four types such as acute and chronic leukemia, including AML (acute myeloid leukemia), ALL (acute lymphoid leukemia), CML (chronic myeloid leukemia), CLL (chronic lymphoid leukemia) [2]. Acute myeloid leukemia is the gathering of large number of abnormal cells that fails to differentiates functional granulocytes [3] In chronic myeloid leukemia a gene is involved that is BCR-ABL inhibits DNA repair and cell apoptosis leading to genetic abnormalities [4]. Chronic lymphoid leukemia is the common leukemia characterized by increase of neoplastic B lymphocytes in spleen bone marrow blood and bone marrow it is usually occur at the age of 50 more common in women than man death is occur after few years of diagnosis [5]. Acute lymphoid leukemia is a cancer of thymocytes most common in children than men there is presence of blast cells in blood [6].

In acute leukemias including acute myeloid leukemia, acute lymphoid leukemia there is surplus production of immature cells (myeloid

and lymphoid). In chronic leukemias including chronic lymphoid leukemia, chronic myeloid leukemia there is uncontrolled proliferation of non-functional mature blood cells [7,8].

Leukemia is a treatable disease therapeutic regimens can be associated with extremely adverse effects and are extremely destructive[9]. Radiation therapy, bone marrow transplantation, cytotoxic chemotherapy is the primary options for treatment. Radiotherapy and chemotherapy are first line treatment with the side effects of fatigue, weight loss, anorexia and alopecia [10].

Bosutinib Dasatinib Imatinib Nilotinib Ponatinib are certain drugs used to manage leukemia myelosuppression, vomiting, cramps, abdominal, pain, diarrhea, fatigue rash are the common side effects of imatinib [11,12]. Fluid retention, hemorrhage, musculoskeletal pain, fatigue, myelosuppression are the common side effects of is dasatinib nasopharyngitis, upper respiratory tract infections sneezing, pyrexia, muscle hair loss spasms, constipation, myalgia abdominal pain are the side effects of Nilotinib. Thrombocytopenia, fatigue, anemia, pyrexia, pain, rash, vomiting diarrhea nausea are the side effects of Bosutinib [13].

All (acute lymphoid leukemia) has the maximum prevalence in childhood while CLL (chronic lymphoid leukemia), CML (chronic myeloid leukemia), AML (acute myeloid leukemia) are common in adulthood. Bone marrow and peripheral blood analyzed for its diagnosis, accessing the cytogeneses and performing flow cytometry for leukemic cells [14].

AIM OF STUDY

The aim of study is the assessment of awareness and knowledge about the leukemia among medical students.

METHODOLOGY

A questionnaire of fourteen questions having open ended and close ended questions is given to medical students. A sample size of 200 students (male and female) with the age group of 20 to 25 years has been taken for survey-based study to evaluate awareness of leukemia. The data of 150 students were included in the studies while other were excluded due to incomplete information.

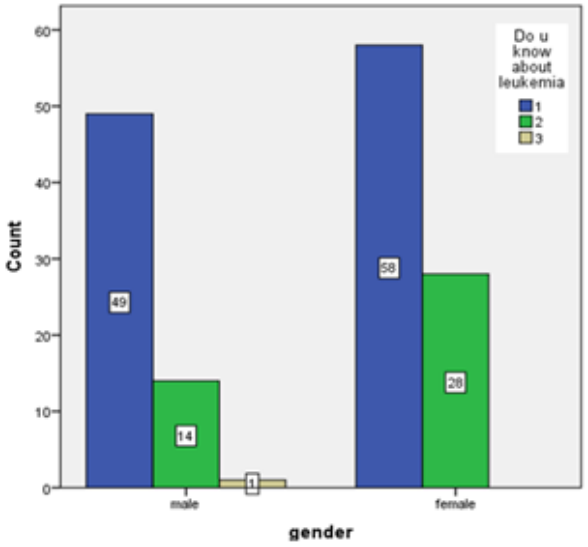

Figure 1. Compare gender with awareness of leukemia.

Table 1. Demographic information.

Gender	18-20 Years	20-25 Years	25+ Years	Total
Male	14	5	45	64
Female	13	31	42	86
Total	27	36	87	150

Table 2. Awareness of leukemia among medical students.

Knowledge of Leukemia	Yes n (%)	No n (%)	Don't Know n (%)
Do u know about leukemia	107(71.3%)	43(28.7)	0
Do u think leukemia is a cancer	96(64%)	21(14)	33(22)
Is leukemia inherited	38(25.3%)	32(21.3)	80(53.3)
Can leukemia be acquired through a blood transfusion	81(54%)	40(26.7)	29(19.3)
Are blood transfusions safe	29(19.3%)	85(56.7)	36(24)
Is there any one in your family or surrounding having this disease	26(17.3%)	101(67.3)	23(15.3)
Can people die as a result of leukemia	86(57.3%)	13(8.7)	51(34)
Do u know about the types of leukemia	43(28.7%)	58(38.7)	46(30.7)
Do u know about the symptoms of leukemia	1(7%)	37(24.7)	35(23.3)
Do u know about its diagnosis	2(1.3%)	34(22.7)	35(23.3)
Do u think it is the most common cancer in children	34(22.7%)	30(20)	86(57.3)
Do u know the newest forms of treatment for leukemia	1(7%)	52(34.7)	47(31.3)
Do u think survival rate is decreasing with increasing age	73(48.7%)	27(18)	49(32.7)
Do u think there is a relation between down syndrome in children with leukemia	8(5.3%)	34(22.7)	108(72)

Table 3. **Statically analysis mean knowledge scores.**

Knowledge of Leukemia Among Medical Students	P Value
Do u know about leukemia	0.195
Do u think leukemia is a cancer	0.608
Is leukemia inherited	0.37
Can leukemia be acquired through a blood transfusion	0.16
Are blood transfusions safe	0.456
Is there any one in your family or surrounding having this disease	0.693
Can people die as a result of leukemia	0.632
Do u know about the types of leukemia	0.257
Do u know about the symptoms of leukemia	0.617
Do u know about its diagnosis	0.385
Do u think it is the most common cancer in children	0.088
Do u know the newest forms of treatment for leukemia	0.011
Do u think survival rate is decreasing with increasing age	0.412
Do u think there is a relation between down syndrome in children with leukemia	0.189

RESULT AND DISCUSSION

The questionnaire was divided into two categories i.e. gender and age groups. The majority 86 (57%) participants are female and 64 (46.2%) are males. out of 86 females, 58 known about the leukemia and 28 females don't aware about leukemia, while in males 49 know about leukemia, 14 males do not aware about leukemia, results are also shown in Figure **1**.

In 86 females 13 were included in age group 18-20 years, 31 were included in age group 20-25 years and 42 females were 25 and above age. Out of 64 males 14 males were included in age group 18-20, 5 males were in age 20-25 years and 45 males were in 25 and above year (Table **1**).

Results shown that the knowledge of leukemia among medical students is 107 (71.3%) leukemia inherited 38 (25.3%), it can acquire through blood transfusion 81 (54%), student know blood transfusion safety 29 (19.3%), students know about its type, 1 (7%) students know about its symptoms, 73 (48.7%) students think survival rate is decreasing with age, and think there is a relation between down syndrome in children with leukemia (Table **2**).

In Table **3**, we describe the p value affect the result. P-value shows that any changes between the gender and any other variable are significant or not. P–value for different age group over gender is 0.000 which is smaller than 0.05 that means age group affect the result.

CONCLUSION

The present study proposes that students need to be familiar with early signs and symptoms of leukemia, the newest forms of treatment and diagnosis of leukemia. An educational program is needed for medical students to enhance their knowledge about leukemia.

LIMITATIONS

The study sample was petite and was conveniently selected. As a result, these findings may not be generalized to the larger populations of interest. This study is only limited to medical students.

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