

# Study on Cutaneous Manifestations of Leukemia and Lymphoma.

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## Abstract

Leukemia and Lymphoma can present with various cutaneous manifestations. These include specific cutaneous diseases and non-specific cutaneous lesions. Non-specific skin lesions are more common in patients with Hodgkins diseases. Leukemia cutis (specific skin lesions of Leukemia) most commonly occurs concomitant with or following the diagnosis of leukemia. The skin may also be the site of relapse of Leukemia after chemotherapy. Uncommonly leukemia cutis may be identified while the bone marrow and peripheral blood are normal. Those patients are classified as aleukemic leukemia cutis. The objective of this study is to know the prevalence of skin manifestations of hematologic malignancies and to help the diagnosis and management of hematologic malignancies in some extent. It is a cross sectional observational study in which the skin lesions of the patients in hematologic malignancies who were already diagnosed & hospitalized in the hematology department of Bangabandhu Sheikh Mujib Medical University were evaluated in the period of one year. We found malignant infiltrative lesions & hemorrhagic findings both were predominate in leukemia. Infections were predominant in both Leukemia & Lymphoma.

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**Key words :** Leukemia, Lymphoma & Skin manifestations.

## Introduction

Various cutaneous lesions can be observed in patients with Leukemia and Lymphoma. These include specific cutaneous diseases resulting from infiltration of the skin by the malignant cells. Nonspecific cutaneous lesions resulting from infection or hemorrhage resulting from the bone marrow dysfunction induced by the malignant process or chemotherapy. There are some characteristic diseases such as pyodermagangrenosum and sweet syndrome may be associated with hematologic malignancies<sup>1</sup>.

Non-specific skin lesions are more common in patients with Hodgkins diseases<sup>2</sup>. Generalized severe pruritus may precede other finding of Hodgking disease by many months or may occur in patients with a known diagnosis<sup>2</sup>. An evaluation for underlying lymphoma should be considered in patient with severe itching<sup>2</sup>.

The cutaneous manifestations of leukemias are conventionally divided into non-specific benign lesions and specific malignant lesions.

Specific lesions (leukemia cutis) are localized or disseminated infiltrations of the skin by malignant leukemic cells which may involve all

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layers of the skin. The clinical appearance of leukemia cutis is variable and may range from papules and nodules to a generalized cutaneous eruption<sup>3</sup>. The histopathologic examination of the skin lesion is essential for diagnosis of leukemia cutis. Specific skin lesions are usually observed in patients with an aggressive clinical course and are associated with a poor prognosis<sup>4</sup>. However, an overall survival of patients with specific skin lesions of chronic lymphocytic leukemia is significantly better, as compared with other types of leukemia. Rarely, skin lesions containing leukemic cells may be present before evidence of leukemia in the peripheral blood and bone marrow (aleukemicleukaemia cutis).

Specific cutaneous involvement has been reported in 10% to 50% of patients with acute myelogenous leukemia and in about 2% of patients with chronic myelogenous leukemia (CML)<sup>(2-4)</sup>. Clinical and histopathologic features are variable<sup>5</sup>. Accurate identification is important in planning subsequent management of these patients, especially in cases where skin lesions precede the onset of leukemia<sup>6</sup>.

In this study, we demonstrated the cutaneous findings of patients with various Leukemias and Lymphomas.

### Methods

In this cross sectional observational study the skin lesions of the patients of hematologic malignancy who were already diagnosed and hospitalized in the hematology department of Bangabandhu Sheikh Mujib Medical University were evaluated during the period of one year from January 2013 to 2014. All age groups and those who were willing to give informed written consent were included in this study.

**Table-I: Age distribution of the patients.**

Age	Number
0-20	32 (30.18%)
21-40	23 (21.64%)
41-60	42 (39.82%)
>61	9 (8.49%)
	106 (total)

Most of patients of lymphomas and leukemias were between the 41-60 years of age group.

**Table-II: Distribution of different types of Leukemia & Lymphoma in patients.**

Types of Leukemia & Lymphoma	Number (%)
NHL	26 (24.52%)
HL	12 (11.32%)
AML	28 (26.41%)
ALL	24 (22.64%)
CML	10 (9.43%)
CLL	6 (5.66%)
	106 (Total)

Total number of patients are 106, out of them 34(32.07%) were suffering from Lymphomas (HL, NHL) and 68(64.15%) with Leukemias (AML, ALL, CML, CLL). Among lymphomas 26 were Non-Hodgkin (NH) & 12(11.32%) were Hodgkin lymphomas (HL). Among 68 leukemia patients 28(26.41%) had acute Myelocytic leukemia (AML), 24(22.64%) had Acute Lymphocytic leukemias (ALL), 10(9.43%) had chronic Myelocytic leukemia (CML), 6(5.66%) had chronic Lymphocytic leukemias (CLL).

**Table-III: Cutaneous lesions in Leukemias & Lymphomas.**

Skin lesions	NHL	HL	AML	ALL	CML	CLL	Total
No lesion	12	6	8	4	6	4	40(37.73%)
Infections	6	4	7	5	2	0	24(22.64%)
Malignant infiltration	0	0	1	1	3	2	7(6.60%)
Hemorrhagic lesions	1	0	4	8	1	0	14(13.28%)
Drug reaction	0	1	0	0	1	0	2(1.88%)
Gingival hyperplasia	0	0	3	0	0	0	3(2.83%)
Pruritus	8	7	0	0	1	0	16(15.09%)
Pigmentation	7	4	0	1	5	1	18(16.98%)
Prurigo	2	3	0	0	0	1	6(5.66%)
Ichthyosis	11	5	0	0	0	0	16(15.09%)

Table-III : Different types of cutaneous lesions were found in study population.

Among patients infections were highest in number. Out of 106 patients found 24(22.64%) patient suffering from infection. Cutaneous herpes infections and mucosal candidiasis were grouped as infectious cutaneous manifestations.

We observed 7(6.60%) patients suffering from malignant infiltration & 14(13.28%) patients suffering from hemorrhagic lesions among them highest number found in ALL.

Petechia and ecchymosis observed secondary to thrombocytopenia were grouped as hemorrhagic findings. In our study population drug reactions were found in 3(2.83%) patients. Localised or generalized cutaneous reactions due to chemotherapeutic agents were grouped as cutaneous drug eruptions. Gingival hyperplasia was seen in 3(2.83%) patients and all of them were in AML patients. We found pruritus in 16(15.09%) patients & most of them had in NHL & HL group. Pigmentation found in 18(16.98%) patients & Prurigo in 6(5.66%) patients in our study population. In our study population 16(15.09%) patients were affected from Ichthyosiform lesion and all of them found in NHL & HL group.

### Discussion

The frequencies of cutaneous lesions, are variable according to the type of leukemia and lymphoma<sup>1</sup>. Among them infections were in highest number. Out of 106 patients we have got 24(22.64%) patients suffering from infection and most of the infections were found in AML, NHL, and all patients. Cutaneous herpes infections and mucosal candidiasis were grouped as infectious cutaneous manifestations.

Leukemic infiltrates may present as widespread macules, papules, infiltrated plaques or nodules, which are distinctive, blue violet or red brown color<sup>7</sup>. Some patients with leukemia develop diffuse maculopapular eruptions interpreted as allergic reactions to circulating leukemic cells but most are probably true leukemic infiltrates with very few malignant cells<sup>8</sup>.

The histologic findings in leukemia cutis vary depending on the subtype of leukemia. The leukemic cells may also infiltrate along the fibrous septae of the subcutaneous fat.

We found, total 7(6.60%) patients suffering from malignant infiltration. Out of 10(9.43%)

CML patients we have got malignant infiltration in three patients. One study done at Turkey they have got malignant infiltration in six patients out of 22 CML patients<sup>9</sup>. This study is nearly correlated with our study.

Mucosal hemorrhages, ulcerative gingivitis, infectious gingivitis and odontalgia may be observed<sup>10</sup>. Pallor, spontaneous hemorrhage, petechiae and ulceration have been described to occur more frequently in acute than chronic leukemia<sup>(11-12)</sup>.

Petechiae and ecchymosis observed secondary to thrombocytopenia were grouped as hemorrhagic findings.

In our study population 14(13.28%) patients were suffering from hemorrhagic lesions, among them eight found in ALL patients.

Gingival hyperplasia is secondary to infiltration of the gingival tissue with leukemia cells and is well described in the literature. In the most extensive review of the topic, gingival hyperplasia was observed in AML with a frequency of 3% to 5% among 1,076 patients receiving anti-leukemia chemotherapy at a referral centre[13-14]. Gingival hyperplasia is most commonly seen with AML patients.

We found gingival hyperplasia in 3 patients, out of 28(26.41%) AML patients. A.D. Yalcin, et al showed gingival hyperplasia in 4 patients out of 21 AML patients in their study<sup>1</sup>. This study is not correlated with our study.

Cutaneous involvement in malignant lymphomas may be primary or secondary. Malignant lymphomas may occur de novo in the skin or after spread from internal organs<sup>2</sup>. In our study 16(15.09%) patients were suffering from generalized pruritus, most of them were found in NHL & HL. Pigmentation were found in 18(16.98%) patients in which 7 patients had NHL, 5(4.71%) patients in CML, 4 patients with HL, 1 patient in ALL & 1 patient with CLL. Another non specific skin lesion like Prurigo we found in 6(5.66%) of patients. 16(15.09%) patients we have got Ichthyosiform dermatitis, out of them 11 had NHL & 5 found with HL patients.

We found fixed drug reaction in 2(1.88%) patients, in which 1 had HD, triggered by vincristine and another 1 in CML group.

A total of 106 patients we did not get skin infestation in 40(37.73%) patients. We have got skin infestations in 66 patients. It is 62.26% of our study population.

## Conclusion

62.26% patients had skin lesions independent from malignancy types. No statistical difference was found between different types of malignant disorders according to lesions. Malignant infiltrative lesions and hemorrhagic findings both were predominate in leukemia. Infections were predominant in both Leukemia & Lymphoma.

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