Original Article

Skin manifestations of hematologic malignancies

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Abstract

Hematologic malignancies can present with various cutaneous manifestations. These include specific cutaneous diseases & non-specific cutaneous lesions. Non-specific skin lesions are more common in patients with hodgkins diseases. Generalized severe pruritus may precede other findings of Hodgkins disease by many months . So an evaluation for underlying lymphoma should be considered in patient with severe itching. 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 & peripheral blood are normal. Those patients are classified as aleukemic leukemia cutis. This cross sectional observational study was carried out in the Hematology department of Bangabandhu Sheikh Mujib Medical University from January 2012 to January 2013 with the intention to know the prevalence of skin manifestations of hematologic malignancies & to help diagnose and manage hematologic malignancies in some extent. Total 127 consecutive patients who were already diagnosed as haematological malignancies & hospitalized were evaluated at the period of one year. Different types of cutaneous lesions were found in our study population, Infections were the highest number, 32(25.19%) patients suffering from various infections. Other findings includemalignant infiltration, 10(7.87%); hemorrhagic lesions (petechia and ecchymosis), 17(13.38%); drug reaction, 5(3.93%); gingival hyperplasia, 3(2.36%); pruritus, 23(18.11%); pigmentation, 20(15.74%); prurigo, 8(6.29%) and ichthyosiform lesion, 19(14.96%).

Key words : Skin manifestations, hematologic malignancies

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Introduction

Various cutaneous lesions observed in hematologic malignancies include specific cutaneous diseases resulting from infiltration of the skin by the malignant cells. Non specific cutaneous lesions resulting from infection or hemorrhage resulting from the bone marrow dysfuction induced by the malignant process or chemotherapy. There are some characteristic diseases such as pyoderma gangrinosum and sweet syndrome may be associated with hematologic malignancies.[1] Non-specific skin lesions are more common in patients with Hodgkins diseases.[2] Generalized severe pruritus may precede other finding of Hodgking disease by many months or may occur in patients with a known diagnosis.[3] An evaluation for underlying lymphoma should be considered in patient with severe itching.[4]

The cutaneous manifestations of leukemias are 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 layers of the skin. The clinical appearance of leukemia cutis is variable and may range from papules and nodules to a generalized cutaneous eruption.[5] 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.[6] 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 (aleukemic leukaemia cutis). Specific cutaneous involvement has been reported in 10% to 50% of patients with acute myelogenous leukemia and in about 2% ofpatients with chronic myelogenous leukemia (CML).[1,3,6] Clinical and histopathologic features are variable.[7-12]

This study was carried out to demonstrated cutaneous findings of various hematological malignencies that may help in planning subsequent management of these patients, especially in cases where skin lesions precede the onset of leukemia.

Methods

This cross sectional observational study was carried out in the Hematology department of Bangabandhu Sheikh Mujib Medical University from January 2012 to January 2013. Total 127 consecutive patients who were already diagnosed as haematological malignancies & hospitalized were evaluated at the period of one year. All age groups & those who were willing to give informed written consent were included in this study. Study protocol was approved by the ethical committee of BSMMU.

Results

Most of the patients 51(40.15%) of Hematologic malignancies were between 41-60 years of age group. (Table-I)

Table-I: Age distribution of the patients

Age	Number
0-20	38(29.92%%)
21-40	27(21.25%)
41-60	51(40.15%)
>61	11(8.66%)
Total	127(100%)

Out of 127 patients, 41(32.26%) were suffering from lymphomas (HL, NHL), 75(59.05%) from leukemias (AML, ALL, CML, CLL) and 11(8.66%) with multiple myeloma (MM). Among lymphomas 27(21.25%) were non-hodgkin (NH) & 14(11.02%) were hodgkin lymphomas (HL). Among 75(59.05%) leukemia patients

Table-II: Distribution of different types of hematologic malignancies

Types of Hematologic Malignancis	Number
NHL	27(21.25%)
HL	14(11.02%)
AML	31(24.40%)
ALL	26(20.47%)
CML	11(8.65%)
CLL	7(5.51%)
MM	11(8.66%)
Total	127(100%)

31(24.40%) had acute myelocytic leukemia (AML), 26(20.47%) had acute lymphocytic leukemias (ALL), 11(8.66%) had chronic myelocytic leukemia (CML), 7 (5.51%) had chronic lymphocytic leukemias (CLL) and 11(8.66%) patients we4re suffering from multiple myeloma (MM). (Table - II). Cutaneous herpes infections and mucosal candidiasis were grouped as infectious cutaneous manifestations. Thirty two (25.19%) patients suffering from infection. Petechia and ecchymosis were observed secondary to thrombocytopenia were grouped as hemorrhagic findings. Eleven (8.66%) patients were suffering from malignant infiltration & 17(13.38%) patients were suffering from hemorrhagic lesions. Among them highest number were found in ALL. Localized or generalized cutaneous reactions due to chemotherapeutic agents were grouped as cutaneous drug eruptions. In our study, drug reaction was found in 5(3.93%) patients. There were 3(2.36%) cases of gingival hyperplasia and all of them were found in AML. We found pruritus in 23(18.11%) patients & most of them with NHL & HL. Pigmentation & Prurigo were found in 20(15.74%) & 8(6.29%) patients. Ichthyosiform lesions were affected 19(14.96%) patients where majority of them found in NHL & HL.(Table - III)

Table-III: Skin lesions of hematologic malignancies

Skin lesions	NHL	HL	AML	ALL	CML	CLL	MM	Total
No lesion	11	7	6	5	7	3	4	43(35.85%)
Infections	8	5	6	5	3	1	4	32(25.19%)
Malignant infiltration	0	0	1	1	3	2	1	8(6.29%)
Hemorrhagic lesions	1	0	5	9	1	0	1	17(13.38%)
Drug reaction	1	1	0	0	2	0	1	5(3.93%)
Gingival hyperplasia	0	0	3	0	0	0	0	3(2.36%)
Pruritus	9	8	2	0	2	0	2	23(18.11%)
Pigmentation	7	5	0	1	4	1	2	20(15.74%)
Prurigo	3	2	0	0	1	1	1	8(6.29%)
Ichthyosis	12	5	0	0	1	0	1	19(14.96%)

Discussion

Frequency of cutaneous lesions may be variable according to the type of Hematologic malignancy.[13,14,15,16,17] In this study, among 127 patients, infections were highest in number. Out of 127 patients we have got 32 (25.19%) patients suffering from infection and most of the infections were found in AML, NHL & ALL patients. Cutaneous herpes infections and mucosal candidiasis were grouped as infectious cutaneous manifestations.

Leukemic infiltrates may present as widespread macules, papules, plaques or nodules, which are distinctive blue violet or red brown color.[18] 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.[19]

We found total 8(6.29%) patients suffering from malignant infiltration. Among them, out of 11 CML patients 3(2.36%) had malignant infiltration of the skin. One study done at Turkey they have got malignant infiltration in 6(22.27%) patients out of 22 CML patients.[20] This study is correlated with our study.

Mucosal hemorrhages, ulcerative gingivitis, infectious gingivitis and odontalgia may be observed.[21,22] Pallor, spontaneous hemorrhage, petechiae and ulceration have been described to occur more frequently in acute than chronic leukemia.[22] In our study population 17 patients were suffering from hemorrhagic lesions and among them 9 patients had ALL. Petechiae and ecchymosis were observed secondary to thrombocytopenia were grouped as hemorrhagic findings.

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.20 Gingival hyperplasia is most commonly seen with AML patients. We found gingival hyperplasia in 3(2.36%) patients out of 31 AML patients. Another study by Yalcin AD et al showed gingival hyperplasia in 4 patients out of 21 AML patients.[20] This study nearly 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. Non-specific skin findings such as pruritus, hyperpigmentation, nodular or papular prurigo, ichthyosis-like lesions etc. In our study 23(18.11%) patients were suffering from genertalized pruritus, most of them were found in NHL & HL. Pigmentatiun were found in 20(15.74%) patients in which 12 patients with NHL, 4 patients with CML, 5 patients with HL, 1 patient with ALL, 1 patient with CLL & 2 patients with Multiple myeloma. Another non specific skin lesion Prurigo we found in 8 patients. Total 19(14.96%) patients we have got Ichthyosiform lesions in different types of Hematologic malignamncies. Out of them 12 found with NHL & 5 found with HL patients.

We found fixed drug reaction in 5(3.93%) patients. Out of them one patient was of hodgkin lymphoma triggered by vincristine another two found in CML patient, one in hodgkin lymphoma and one in multiple myeloma patient.

Out of 127 patients we did not get any skin infestation in 43(35.85%) patients. We have got skin manifestations in 75 patients. It is the commonest (66.75%) and about two third of our study population.

About two third of our patients (66.75%) had skin lesions independent from malignancy types. No statistical difference was found between different type of malignant disorders according to lesions. Malignant infiltrative lesions & hemorrhagic findings, both were predominant in leukemia. Infections were predominant in both leukemia & lymphoma. Large scale study is needed for further evaluation.

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