



ORIGINAL RESEARCH PAPER

Medicine

A STUDY OF HEMATOLOGIC MANIFESTATIONS IN PATIENTS WITH HIV INFECTION

KEY WORDS:

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ABSTRACT

Human Immunodeficiency Virus attacks the body's immune system. Months to years after a person is infected with HIV, the virus destroys all the T lymphocytes. The infections which normally won't cause severe or fatal disease will eventually cause the death of the HIV patient. AIDS in an adult is defined by the existence of atleast two of the major signs associated with at least one minor sign, in the absence of known cause of immunosuppression such as cancer or severe malnutrition or other recognized etiologies.

AIMS AND OBJECTIVES To study the blood picture of HIV infected patients, Analyze specific laboratory determinations of anemias, leukopenia, and thrombocytopenia and correlate with CD4 lymphocyte count. Identify the clinical manifestations of altered hematopoiesis related to HIV, To study the bone marrow picture in patients of HIV with pancytopenia.

SUMMARY The variation in the prevalence of hematological parameters in different stages of disease are due to a no of factors which include CD4 count, clinical disease status, drug therapy, opportunistic infections and malignancies. The most common symptom was fatigue (86%) and fever and the most common signs were pallor and oral thrush. Among the hematological abnormalities anemia was the commonest. The commonest type of anemia was Normocytic Hypochromic. Leucopenia was seen in 40% cases which is statistically significant.

INTRODUCTION

Human Immunodeficiency Virus attacks the body's immune system. Months to years after a person is infected with HIV, the virus destroys all the T lymphocytes. The infections which normally won't cause severe or fatal disease will eventually cause the death of the HIV patient.

CDC surveillance case definition for AIDS, 1993 (A) definitive diagnosis of AIDS(with or without laboratory evidence of hiv infection)

- Candidiasis of the esophagus, trachea, bronchi and lungs
- Cryptococcosis, extrapulmonary
- Cryptosporidiosis with diarrhea persisting >1 mth
- CMV disease of any organ other than liver, spleen or lymph node
- Herpes simplex virus causing a mucocutaneous ulcer that persists longer than 1 month
- Kaposi sarcoma in a patient <60
- Lymphoma of the brain in a patient <60 yrs of age
- Pneumocystis jiroveci pneumonia
- Toxoplasmosis of the brain
- MAC Infection
- PML

WHO clinical case definition

AIDS in an adult is defined by the existence of atleast two of the major signs associated with at least one minor sign, in the absence of known cause of immunosuppression such as cancer or severe malnutrition or other recognized etiologies.

This case definition for AIDS is for use in developing countries that lacked sophisticated diagnostic resources.

Major signs

- Weight loss >10% of body weight
- Chronic diarrhea for >1 mth
- Prolonged fever >1 mth
- Minor signs
- Persistent cough >1 mth
- Generalized pruritic dermatitis
- History of herpes zoster
- Oropharyngeal candidiasis
- Chronic progressive or disseminated herpes infection
- Generalized lymphadenopathy

HIV infection is a multisystem disease, hematological abnormalities are among the most common clinicopathological manifestations of HIV infection eg. impaired hematopoiesis, immune mediated cytopenias, coagulopathies, particularly in the later part of the disease.

Presently in India 5 millions are infected.

15% affected individuals have mild anemia, incidence increases with advancement. Leucopenia was present in 65% of AIDS patients while thrombocytopenia was present in 40% of AIDS Patients.

Among neoplastic complications, Kaposi sarcoma is the most common neoplasm. Other malignancies increasingly seen in AIDS are Non Hodgkin's Lymphoma, seminoma and non melanoma skin cancer.

Bone marrow examination showed myelodysplastic changes in 69% of AIDS Patients.

Aims and objectives

- 1) To study the blood picture of HIV infected patients
- 2) Analyze specific laboratory determinations of anemias, leukopenia, and thrombocytopenia and correlate with CD4 lymphocyte count.
- 3) Identify the clinical manifestations of altered hematopoiesis related to HIV.
- 4) To study the bone marrow picture in patients of HIV with pancytopenia.

Materials and methods

Inclusion criteria

HIV positive patients as per WHO criteria irrespective of their antiretroviral treatment status, attending to Department of medicine /ART Centre, Patna Medical College & Hospital, Patna during the period of August 2017 to November 2018 were studied.

Exclusion criteria

- 1) patients with previously known hematological disorder
- 2) congenital hematological disorders
- 3) age <12

Investigations

- 1) CBC with PBS
- 2) Bone marrow biopsy whenever indicated
- 3) CD4 count by flow cytometry
- 4) lymph node biopsy , USG abdomen , CT scan , MRI wherever indicated

observation

Out of the 100 patients studied 80 were males as against 20 females with a sex ratio of 4:1 . These 100 patients were studied and clinical and hematologic parameters were analysed .

The average HB% was 10.02% .

The total leucocyte count ranged from 1900 to 12300 cells/mm³ with a prevalence of leucopenia of 40% . In the present study it is statistically significant .

The neutrophil count ranged from 38% to 89% of TLC . , with only 7% cases having Granulocytopenia .

The lymphocyte count ranged from 8.7 to 54% of TLC with prevalence of Lymphopenia of about 38% .

The platelet count ranges from 0.7 to 4.5 lacs/mm³ with a prevalence of thrombocytopenia of about 13% .

The CD4 count mean was 135.14 . CD8 count ranged from 248 to 2140 and CD4/CD8 ratio range from 0.03 to 0.08 .

The most common anemia was normocytic hypochromic anemia , seen in 49% cases . , Then macrocytic hypochromic then pancytopenia seen in 3% cases .

Out of the 80 cases having CD4 count less than 200 , 73 cases had their Haemoglobin less than 13% . The severity of anemia increased with declining CD4 Count .

summary

- 1) The variation in the prevalence of hematological parameters in different stages of disease due to a no of factors which include CD4 count , clinical disease status , drug therapy , opportunistic infections and malignancies .
- 2) The most common symptom was fatigue(86%) and fever and the most common signs were pallor and oral thrush .
- 3) Among the hematological abnormalities anemia was the commonest .
- 4) The commonest type of anemia was Normocytic Hypochromic.
- 5) Leucopenia was seen in 40% cases which is statistically significant .

CONCLUSION

In the present study , out of 100 patients , the commonest hematological manifestations found were anemia , leucopenia and thrombocytopenia .

The frequency and severity of these hematological manifestations increased with decline in CD4 count .

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