

Study of Hematological Manifestations in HIV/Aids and To Assess Their Correlation to Severity of DiseaseVinit Agarwal¹, Shiv Charan Jelia², Shyoji Ram Meena³, Devendra Ajmera⁴, Pankaj Jain⁵, Shail Agarwal⁶.^{1,6} Resident Doctor, ^{2,3} Senior Professor, ^{4,5} Assistant Professor.¹⁻⁵ Department of General Medicine, ⁶ Departments of Skin and VD.

Government Medical College Kota

Correspondence Author: Shiv Charan Jelia, Senior Professor, Government Medical College Kota**Type of Publication:** Original Research Paper**Conflicts of Interest:** Nil**Abstract****Background-** The acquired immunodeficiency syndrome (AIDS), is a fatal illness caused by a retrovirus known as the human immunodeficiency virus that breaks down the body's immune system, progressively leads to AIDS.**Methods-** It was a hospital based observational descriptive study conducted in department of medicine and ART centre at Government Medical College Kota and associated group of hospital.**Results-** Mean HB level in HIV patients was 8.21±2.59gm/dl, total WBC level was 4.36±0.60×10³ cells/μl, Absolute lymphocytes level was 0.060±0.02×10³ cells/μl and platelet level was 13.33±6.80×10³ cells/μL.**Conclusion-** Hematological abnormalities were common in patients with Acquired Immuno Deficiency Syndrome. Hemoglobin concentration, percentage of neutrophils and lymphocytes were significantly reduced.**Keywords:** Acquired Immuno Deficiency Syndrome (AIDS), Hematological manifestations, Hemoglobin, Neutrophils, Lymphocytes.**Introduction**

The acquired immunodeficiency syndrome (AIDS), is a fatal illness caused by a retrovirus known as the human immunodeficiency virus that breaks down the body's immune system, progressively leads to AIDS . There are

2.47 million persons in India living with HIV; equivalent to approximately 0.36% of the adult population. The revised national estimate reflects the availability of improved data rather than a Substantial decrease in actual HIV prevalence in India. The transmission route is still predominantly sexual (87.4%); other routes of transmission by order of proportion include prenatal (4.7%), unsafe blood and blood products (1.7%), infected needles and syringes (1.8%) and unspecified routes of transmission.¹Haematological abnormalities were common in patients with HIV infection. The common peripheral blood findings include anemia, thrombocytopenia, leucopenia or pancytopenia. These abnormalities may be attributable to the direct toxic effect of the virus on progenitor cells, ineffective hematopoiesis, opportunistic infections, immune mechanisms and drug reactions.² Anemia was a very common finding in patients with HIV infection, particularly in individuals with more advanced HIV disease.HIV infection alone without other complicating illness may produce anemia in some patients. HIV not only causes low CD4 counts but is also associated with granulocytopenia, thrombocytopenia, loss of specific cytotoxic lymphocytes and antibody specific response.³

Material and Methods

Place of study

Inpatient and outpatient departments of department of medicine and ART centre at Government Medical College Kota and associated group of hospital.

Study design

It was a hospital based observational descriptive study.

Sample size

The sample size was 100 patients.

Sampling method

Connivance sampling

Duration of study

One year between June 2016 to May 2017

Inclusion Criteria

- 1.The patients diagnosed with HIV-1 &2 reactive by ELISA method (both symptomatic and asymptomatic)
- 2.age >18 years.

Exclusion Criteria

- 1.Patients with previously known hematological disorder prior to HIV infection
- 2.Patients with hepatic disorders and renal disorders due to other causes was be excluded from the study

Study population

All the patients who are HIV positive and fulfilling the inclusion and exclusion criteria attending OPD and IPD at department of medicine and ART center of Government Medical College Kota and associated group of hospitals .

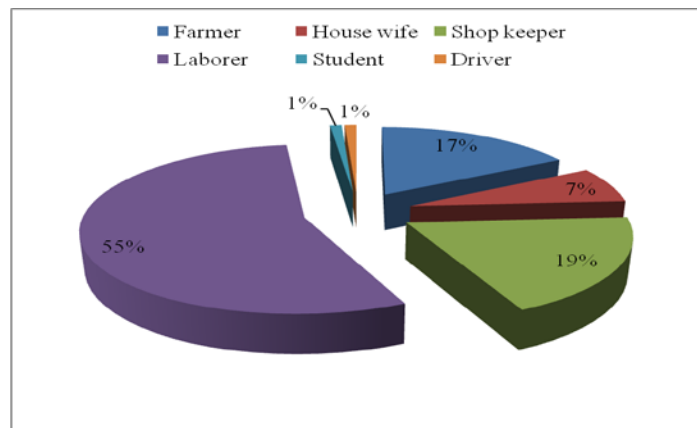
Data collection

All the patients who are HIV positive and fulfilling the inclusion and exclusion criteria attending OPD and IPD at department of medicine and ART center of Government Medical College Kota and associated group of hospitals . The patients was examined by investigator of the study (Dr. Vinit Agarwal , junior resident in department of Medicine , and Dr. Shiv Charan Jelja , Sr. Professor and Head of Department of department of medicine) .The

patients was evaluated according to predetermined and pretested proforma to record the details of history , physical examination and investigations.

Observation

Maximum 25% patients were belong to 41-50 Yrs age group and only 2% patients were less than 20 Yrs.73% patients were male and 23% were female.



Occupation wise distribution of AIDS patients.

Table no.1.Hematological manifestations wise distribution of AIDS patients (n=100)

Hematological manifestations	No. of patients	Percentage
Leucopenia	44	44%
Thrombocytopenia	12	12%
HB level below 10GM%	63	63%

Leucopenia was seen in 44% cases and thrombocytopenia in 12% of cases. Hemoglobin level below 10gm% was seen in 63%.

Table no.2. Blood picture wise distribution of AIDS patients (n=100)

Blood picture	No. of patients	Percentage
Dimorphic	4	4%
Marcocytic	15	15%
Microcytic hypochromic	11	11%

Normocytic hypochromic	52	52%
Normocytic Normochromic	18	18%

In this study 52% were normocytic hypochromic, 18% were Normocytic Normochromic, 15% patients were Microcytic hypochromic.

Table no.3. Haematological parameters of HIV patients.

Haematological parameters	Mean	SD
HB(gm/dl)	8.215	2.59
Total WBC ($\times 10^3$ cells/ μ L)	4.36	0.60
Absolute lymphocytes ($\times 10^3$ cells/ μ L)	0.060	0.02
Platelet ($\times 10^3$ / μ l)	13.33	6.80

Mean HB level in HIV patients was 8.21 ± 2.59 gm/dl, total WBC level was $4.36 \pm 0.60 \times 10^3$ cells/ μ l, Absolute lymphocytes level was $0.060 \pm 0.02 \times 10^3$ cells/ μ l and platelet level was $13.33 \pm 6.80 \times 10^3$ cells/ μ L.

Table no.4. Association between Hematological manifestations and severity of AIDS patients (n=100)

Hematological manifestations	CD4 count <200mm ³	CD4 count >200 mm ³	P-value
Leucopenia	12	22	0.045
Thrombocytopenia	3	9	0.024
HB level below 10GM%	17	46	0.047
p-value =0.692			

The association between severity of HIV infection and was Hematological manifestations significant.

Discussion

In our study, maximum numbers of patients (25%) belonged to 41-50 years of age group and 2% patients belonged to less than 20 years age group.

Studies done by Sitalakshmi et al, ⁴ was observed that maximum numbers of patients belonged to 41-50 years of age group. Chanarat et al. ⁵ also reported similar age group distribution.

Bartholomew Okechukwu Ibeh et al⁴ was observed the ages of the HIV⁺ HAART group 36 ± 10 Yrs.

Males were more commonly affected by the disease (73%) than female (27%) in our study.

Sitalakshmi et al, ⁵ was observed that male (60%) and female Was (40%).

Chanarat et al, ⁶ was also observed that male was more effected than female.

Leucopenia was seen in 44% cases and thrombocytopenia in 12% of cases. Hemoglobin level below 10gm% was seen in 63% in our study.

In the study by Chanarat et al, ⁵ was seen in 51% cases and thrombocytopenia in 16% of cases.

Leucopenia was seen in 30% cases and thrombocytopenia in 21% of cases. Hemoglobin concentration, percentage of neutrophils and lymphocytes were significantly reduced in study conducted by Ramakrishna et al⁴.

In our study 52% were normocytic hypochromic, 18% were Normocytic Normochromic, 15% patients were Microcytic hypochromic.

Swati Kathuria et al ⁵ was observed the prevalence of anemia, leucopenia and thrombocytopenia was 46%, 25% and 24% respectively. The incidence of these abnormalities increased in patients having lower CD4 counts. Anemia was more common in untreated group whereas patients on ART had a higher incidence of leucopenia.

Most common type of blood picture was normocytic normochromic blood picture seen in studies, Bodey et al,⁷ Moore et al.⁸

Mean HB level in HIV patients was 8.21 ± 2.59 gm/dl, total WBC level was $4.36 \pm 0.60 \times 10^3$ cells/ μ l, Absolute lymphocytes level was $0.060 \pm 0.02 \times 10^3$ cells/ μ l and platelet level was $13.33 \pm 6.80 \times 10^3$ cells/ μ L in our study and in the study by Chanarat et al,⁶ was seen same result.

Conclusions

Hematological abnormalities were common in patients with Acquired Immuno Deficiency Syndrome. Hemoglobin concentration, percentage of neutrophils and lymphocytes were significantly reduced.

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