

Original Research Article

To Review the pathogenesis of the haematological manifestations of human immunodeficiency virus (HIV).

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Abstract:

Background & Method: The aim of the study is to Review the pathogenesis of the haematological manifestations of human immunodeficiency virus (HIV). All patients were screened by ELISA technique and diagnosed by western blot. Detailed general and systemic examination was carried out with emphasis on sign and symptoms or other relevant investigation for diagnosis of opportunistic infection/malignancy

Result: Out of the 150 study cases anaemia is most commonly affected hematological parameter in the study. Anaemia is most common with 48 cases (32%, n=150) while eosinophilia is least common cases 24 (16.3%, n=150), frequency of affected parameter anaemia > leucopenia > thrombocytopenia > eosinophilia. Data analysis in following hematological parameters with the difference of sex distribution under the Extended Mantel-Haenszel test for trend of chi –Squares test. Chi-sq. test X² Value =0.873 [DF = 1] 2-sided P = 0.350

Conclusion: In our study of 150 cases, highest prevalence of hematological manifestation of HIV positive patient i.e. 44.66% is found between 31-40 years of age. RDW is also commonly affected haematological parameter in HIV positive cases. Anaemia is most common haematological parameters of HIV positive cases. Normocytic normochromic anaemia is most common type of anaemia because HIV is a chronic disease.

Keywords: pathogenesis, haematological, manifestations & (HIV).

Study Designed: Observational Study.

1. Introduction

A number of stages of HIV infection have been recognized, including an acute viral syndrome, an asymptomatic stage, a variety of symptomatic conditions frequently characterized by generalized lymphadenopathy, and full-blown AIDS[1]. Patients with the acute viral syndrome typically present 26 weeks after exposure with fever, malaise, myalgias, maculopapular rash, diarrhea, lymphadenopathy, or aseptic meningitis. Laboratory findings include lymphocytosis with atypical plasmacytoid lymphocytes, a negative heterophile, and mild thrombocytopenia. Thrombocytopenia has been a frequent hematologic complication, along with leucopenia without lymphocytosis[2]. Of importance in the diagnosis of acute HIV infection, individuals may be serologically negative during the viral prodrome but typically develop anti-HIV antibodies 12 months after the onset of this illness. Circulating viral p24 antigen in the absence of anti-HIV antibody may be detectable during this acute phase, and individuals typically have high levels of plasma viremia, which subsequently decreases to low or undetectable levels as a consequence of the host immune response[3].

Positive viral cultures, and the presence of viral DNA and RNA in peripheral blood mononuclear cells and plasma, respectively, detected by the polymerase chain reaction. Studies evaluating lymph tissues of HIV-infected patients have shown that even in this asymptomatic period there is an abundance of replicating virus in these tissues, indicating that while these individuals may be clinically well, contrary to earlier views, HIV is clearly not latent during this period[4&5].

2. Material & Method

The present study was conducted in the Department of pathology in HIV positive patients and susceptible family members at Shyam Shah Medical College, Rewa, M.P. from Jan 2019 to Dec 2020.

All the 150 patients were screened by ELISA technique and diagnosed by western blot. Detailed general and systemic examination was carried out with emphasis on sign and symptoms or other relevant investigation for diagnosis of opportunistic infection/malignancy. The HIV status of all patients was confirmed by carrying out both ELISA as well western blot assays for HIV anti-body. After confirmation of HIV samples of whole blood of the patient were sent for routine a complete blood count.

Inclusion Criteria:

1. Age between of 5 to 69 years

3. Results

Table 1: Age distribution of study cases

Age	No. of cases	% (n=150)
0-10	05	3.00%
11-20	09	6.00%
21-30	31	20.66%
31-40	67	44.66%
41-50	28	18.66%
51-60	07	4.66%
61-70	03	2.00%

Out of 150 study cases HIV positive patients are most commonly i.e.44.66% (n=150) in age group of 31-40 years while least common (2%, n=150) in age of above 60 years.

Table 2: Distribution of hematological parameters

Total No. of Case	150	% (n=150)
Thrombocytopenia	35	23.3%
Eosinophilia	24	16.3%
Leucopenia	43	28.6%
Anaemia (Hb%)	48	32%

Out of the 150 study cases anaemia is most commonly affected hematological parameter in the study. Anaemia is most common with 48 cases (32%, n=150) while eosinophilia is least common cases 24(16.3%, n=150), frequency of affected parameter anaemia > leucopenia > thrombocytopenia > eosinophilia.

Table 3: Red cell distribution with HIV positive cases

Total study Cases	Male Affected	Female Affected	Total Affected Cases
150	89	61	189
% (n=sample)	59.3%	40.7%	63.00

Male are more commonly affected with 89 cases (59.3%), while female cases are 61 (40.7%).

Table 4: Data analysis- Distribution hematological Parameter- Anaemia

Paramitters	Female	Male
Normocytic Normochromic Anaemia	51.78%	60.64%
Microcytic Hypochromic Anaemia	31.25%	22.88%
Macrocytic Anaemia	16.97%	16.48%

Data analysis in following hematological parameters with the difference of sex distribution under the Extended Mantel-Haenszel test for trend of chi –Squares test. Chi-sq. test X2 Value =0.873 [DF = 1] 2-sided P = 0.350

4. Discussion

Anaemia (Hb%) Most common hematological parameter in our study. Anaemia 215 cases (71.6% (n=150)) in which male were 147(78.19%, n=188) and female cases were 68 (60.71%, n=112). Anaemia is defined when Hb% < 13gm/dl for male and Hb<12gm/dl for female with the reference of WHO anaemia criteria and various other studies[6].

In our study shows similar results in the longitudinal changes in hematological manifestation of HIV infection Anaemia (Hb%) : Most common hematological parameter in our study. Anaemia 215 cases (71.6% (n=150)) in which male were 147(78.19%, n=188) and female cases were 68 (60.71%, n=112) [7].

Anaemia is defined when Hb% < 13gm/dl for male and Hb<12gm/dl for female with the reference of WHO anaemia criteria and various other studies. In our study shows similar results as Deepak Arora et al. in the longitudinal changes in hematological manifestation of HIV infection in the multicentre AIDS cohort study in department of microbiology Adesh Institute of Medical Science and Research Bathinda over a 2 year period of time from 2007 to 2009. In this study anaemia in males was reported to be 89% while in female 71.4% [8].

Similar result of our study to be found by Ajay Wanchu et al. in the “profile of hematological abnormality of Indian HIV infected individual” in PGI Chandigarh over a period of 2 years from 2007-09 India when sample size n=200. This study also shows that anaemia is most common hematological finding in HIV positive cases. Anaemia was reported in seen 65.5% cases (131/200).

5. Conclusion

In our study of 150 cases, highest prevalence of hematological manifestation of HIV positive patient i.e. 44.66% is found between 31-40 years of age. RDW is also commonly affected haematological parameter in HIV positive cases. Anaemia is most common haematological parameters of HIV positive cases. Normocytic normochromic anaemia is most common type of anaemia because HIV is a chronic disease.

6. References

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