



TO STUDY THE PREVALENCE AND SEVERITY OF ANAEMIA IN NEWLY DIAGNOSED HIV PATIENTS AND THEIR CORRELATION WITH CD4 COUNT

Nematology

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ABSTRACT

BACKGROUND: more than 50% of HIV infected patients have haematological complications, the incidence as well as the severity of these complications increases as the HIV disease progresses.

Method :- this study was carried out in departments of medicine, JLN Medical College and hospital ajmer. in this observational study 100 patients were selected who attended the medical opd and admitted in various medical wards.

Results:- in this study frequency and severity of anaemia increases with declining CD4 counts and has got significant impact on clinical outcome

KEYWORDS

INTRODUCTION

more than 50% of HIV infected patients have haematological complications, the incidence as well as the severity of these complications increases as the HIV disease progresses. the main haematological manifestation in hiv include anaemia, leucopenia, thrombocytopenia, coagulation disorders, haematological malignancies, etc.

anaemia is the most common haematological abnormality that causes symptoms in patients with HIV.,1

neutropenia usually occurs as hiv disease progresses and is an independent risk factor for bacterial infection in advanced hiv disease.1 thrombocytopenia, platelet count less than 1.5/cumm is another common haematological abnormality in hiv infection.1 . thromboembolic phenomenon, various hypercoagulation abnormalities have been detected in patients infected with hiv.

Anaemia in these patients correlates with severity of disease2.

Anaemia in the HIV patients is likely multifactorial-

1. inflammatory cytokine appears to play a central role 3.
2. ineffective erythropoiesis 4.
3. opportunistic infections 5,6.

AIMS AND OBJECTIVES

1. To study the prevalence of anaemia in HIV patients.
2. To assess the correlation of anaemia with their CD-4 counts.

MATERIAL AND METHODS

This study was carried out in departments of medicine, JLN Medical College and hospital ajmer. in this observational study 100 patients were selected who attended the medical opd and admitted in various medical wards. and underwent routine and specific investigations.

Selection criteria- all HIV positive (ELISA three kit positive) patients.

Exclusion criteria-

1. patient who were having active bleeding
2. patients who were having following infections;
 - a. mycobacterial infections
 - b. fungal infections
 - c. B19 parvovirus infections
3. patients who were on following drugs; Zidovudine, dapsone, trimethoprim/ sulfamethoxazole, pyremethamine,
- 5- flucytosine, Ganciclovir, Interferon-alpha, Trimetrexate, Foscarnet
4. patients on other drugs which may lead to bone marrow suppression;
 - a. cytotoxic drugs used in cancer chemotherapy, alkylating agents, antimetabolites, antimitotics
 - b. chloramphenicol
 - c. insecticides

- d. antiprotozoals: quinacrine and chloroquine, mepacrine
- e. non steroidal anti-inflammatory drugs (including phenylbutazone, indomethacin, ibuprofen, aspirin)
- f. anticonvulsants-hydantoins, carbamazepine.
- g. antibiotics (sulfonamides), anti thyroid drugs (methimazole, propylthiouracil) antidiabetic drugs (chlorpropamide)
- I. antihistamines (cimetidine)

detailed general and systemic examination with emphasis on signs of hematological involvement like anemia, jaundice, clinically apparent bleeding manifestation lymphadenopathy, hepatosplenomegaly, finding of any associated opportunistic infection and any associated systemic manifestation such as HIV nephropathy, arthropathy was noted the individuals were divided into three groups;

Group 1;- patients with HIV infections and asymptomatic and CD4 counts above 200 per cu mm.

Group 2;- patients with HIV infections and asymptomatic but with conditions, which are not AIDS defining and CD4 counts above 200 per cummm

Group 3;- patients with clinical or immunological AIDS

The evaluation anaemia for patients falling under the three defined groups as above was done as; hemoglobin values and type of anaemia.

serum iron and transferrin iron binding capacity

Analysis for each hematologic perturbations was done by filtering out entries beyond a defined cut off value and calculating the percentages, in each of three groups mentioned above. for this study the following diagnostic parameters were taken;

- Anaemia-Hb < 12 gm/dl
- Severe anaemia-Hb < 7 gm/dl

Observations

The patients were divided into three groups;

Group 1;- patients with HIV infections and asymptomatic and CD4 counts above 200 per cu mm (CDC stage A1,A2).

Group 2;- patients with HIV infections and asymptomatic but with conditions, which are not AIDS defining and CD4 counts above 200 per cummm. (CDC stage B1,B2)

Group 3;- patients with clinical or immunological AIDS. (CDC stage A3,B3,C1,C2,C3)

The group 1 comprises 41 patients (Male=22, Female=19)

Group 2 comprises 16 patients (male=5, female=11)

Group 3 comprises 43 patients (male=25, female=18)

The evaluation of anaemia for patients falling under the three defined groups as above is done as follows:-

- Hemoglobin values and type of anaemia.
- serum iron ,transferrin saturation and total iron binding capacity.

Analysis for anaemia will be done by filtering out entries beyond a defined cut off value and calculating the percentages, in each of the three groups mentioned above. for this study the following diagnostic parameters were taken;

- Anaemia-Hb < 12 gm/dl
- Severe anaemia-Hb < 7 gm/dl

In the present study for the frequency of Hb distribution, the observations are as follows:-

Group-1

- the Hb ranges from 15 gm% to 8 gm %.the mean Hb was 10.39 gm %.std deviation -1.70 gm %
- in males 4.5% of total male patients have Hb >12 gm% (1 out of 22),45.5 % of the male patients have hb in the range of 10-12 gm%(10 out of 22 patients) rest 50 % have Hb in the range 7-10 gm %(11 out of 22 patients)
- in females only 31.5% (6 out of 19) patients were having Hb in the range of 10 -12 gm %,most of females 68.42%(13 out of 19) patients have their hb in the range of 7-10 gm %.
- no patients in either group have hb <7 gm %.

(p value >.05 showing no correlation between Hb and CD4 counts for group 1)

Group 2

For the 16 patient screen Hb range from 4.6 gm% to 12 gm %.the mean Hb was 7.8 gm% .(std.dev.-2.367 gm%)

- 60 % of male (3 out of 5) patients have hb in the range 7-10 gm%
- 40% of the male patients (2 out of 5) have Hb <7 gm %.

In females-Hb band <7 gm % comprises maximum no.of patients 45.46% (5 out of 11 patients) followed by hb band 7-10 gm% comprising 27.2% (3 out of 11 patient) and by the hb band 10-12 gm % comprising 27.2%(3 out of 11) patients.

Overall the hb band <7 gm % comprises maximum patient -43.75 %(7 out of 16) patients followed by the hb band 7-10 gm % comprising 37.5% (6 out of 16)patients lastly followed by hb band 10-12 gm % comprising 19%(3 out of 16) patients.no patient were in hb band >12 gm%.

P value is <.01 showing that is very significant correlation between the hb and cd4 count for group 2.

Group 3

In males-Hb band 7 -10 gm % comprises maximum no.of patients 48% (12 out of 25 patients) followed by hb band <7 gm% comprising 28% (7 out of 25 patient) and the hb band 10-12 gm % comprising 20%(5 out of 25) male patients. and lastly by the hb band >12 gm % comprising 4%(1 out of 25) patients.

In females-Hb band 7 -10 gm % comprises maximum no.of patients 55.55% (10 out of 18patients) followed by hb band <7 gm% comprising 27.77% (5 out of 18 patient) and lastly the hb band 10-12 gm % comprising 16.66%(3 out of 18) patients.

Overall the hb band 7 -10 gm % comprises maximum patient -51.16 %(22 out of 43) patients followed by the hb band <7 gm % comprising 25.58% (11out of 43)patients, followed by hb band 10-12 gm % comprising 18.6%(8 out of 43) patients. and lastly 2.32% (1 out of 43) patient were in hb band >12 gm%.

P value is <.01 showing that is very significant correlation between the hb and cd4 count for group 3.

Of all the three categories (n=100) screened for anaemia ,it was found that anaemia was present in 98% of the patients with 27% having hb level between 10 -12 gm%.

56 % patients have their hb level in the range of 7-10 gm %.

19 % patients have their hb level <7 gm %

Only 2 % patients have their hb level >12 gm %

DISCUSSION

As expected high incidence of Anaemia is noted In our study.A Hb ranges from 4 gm % to 15 gm % with overall mean hb 9.35 gm %.

Patient in group 1 having mean Hb -10.2 gm %

Patient in group 2 having mean Hb -7.8 gm %

Patient in group 3 having mean Hb -8.28 gm %

This shows that as the CD4 count decreases and the clinical scenario worsens the severity and frequency of Anaemia increases hence Hb is very significantly correlated (P value <.01) group 2 and 3.

The prevalence of Anaemia in our study was 98% ,out of which 27% was having mild Anaemia, 56 % having moderate Anaemia, and 19 % was having severe Anaemia.

CONCLUSION

In the present study out of 100 patients screened the common hematological finding was Anaemia.

The frequency and severity of Anaemia increases with declining CD4 Counts and has got significant impact on clinical outcome.

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