www.jmscr.igmpublication.org
Impact Factor 5.84
Index Copernicus Value: 83.27
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v5i1.114

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Original Research Article

Anaemia in Patients on Anti Retro Viral Therapy

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Abstract
Aims of the Study: *To study the incidence of anaemia in patient taking anti retro viral therapy.*
Methods and Material: *Three hundred cases of people living with HIV were studied and compared with data from literature.*
Results: *All the three hundred [n=300] cases of people living with HIV, initiated on anti retro viral therapy were admitted cases. Out of those two hundred cases seventy three [n=73] cases had anaemia. Among those seventy three cases forty three [n=43] were females and thirty [n=30] cases were males. Macrocytic anaemia was present in forty two [n=42] cases. All the patients were treated with zidovudine based regimen. In our study CD4 count was less than 200 in twenty eight [n=28] cases. Breathlessnes and anorexia were common symptoms. Pallor was commonest sign.*
Conclusion: *Macrocytic normochromic anaemia is most common among the cases with zidovudine based anti retro viral regimen.*

INTRODUCTION

Acquired immune deficiency syndrome (AIDS) is caused by Human Immunodeficiency Virus (HIV). It is serious disorder of immune system in which normal defence of body breaks against infection leading to life threatening condition. AIDS was first recognised in United States in summer of 1981 among homosexuals since then HIV pandemic is being increased worldwide exponentialy[1]. As per William Osler; a person who takes medicine must recover twice. Once from disease and once from the complications of medication. With their benefit antiretroviral treatment (ART) also comes along with adverse events[2]. ARV drugs are associated with a broad range of toxicity, ranging from low grade intolerance, which may be self-limiting, to life-threatening side-effects. So, it is important to look for the potential side effects of antiretroviral therapy. Most of the toxicity/side-effects can be adequately co-managed with efficient clinical monitoring at all levels of the health care system[3].Among those side effects; our interest is to study the prevalence of anaemia in patients taking anti retro viral therapy.

AIMS AND OBJECTIVES

- To study the incidence anaemia in patient taking anti retro viral therapy.

SUBJECTS AND METHODS

Source of data

The study was conducted in people living with HIV admitted in medical wards who were on First line Antiretroviral therapy (ART) from January

2016 to December 2016. Total 300 individuals were included in this study. A detailed history and clinical examination with required relevant investigations were carried out in every patient. As in our institute only first line ART is available so only NNRTI and NRTI are included in our study

a) Inclusion Criteria: -

1. Patients reactive for HIV-1 and/or HIV-2 antibodies.
2. Patients fulfilling above criteria and started on ART.
3. Patients presented anaemia between 1st January 2016 to 31st December 2016.
4. Age more than 12 years.

b) Exclusion criteria: -

1. Patients non-reactive for HIV-1 or HIV-2 antibodies.
2. Patients who reactive to HIV1 and/or HIV2 antibodies but not on ART.
3. Patients with age less than 12 years.

Complete blood counts were done. Patients having Haemoglobin<8 gm/dl were labelled as anaemia. Anaemia was labelled as anti retro viral-induced anaemia if there were no other identifiable causes after work-up, if a temporal relation was determined with the introduction of the drug, and if recovery was obtained following cessation of the drug. Further, patients with gastrointestinal bleed and patients on drugs which may lead to bone marrow suppression were excluded. Baseline Hemogloin before starting ART was tested.

OBSERVATIONS AND RESULTS

Table 1: Age and Sex Wise Distribution In Anaemic Patients

AGE GROUP	FEMALES	MALES
13-20	05	03
21-30	04	05
31-40	12	09
41-50	14	11
51-60	06	01
>61	02	01
TOTAL	43	30

Table 2: Anaemia With Respect To Art Regimen

Art Regimen	Number Of Patients
Zln	61
Zle	12

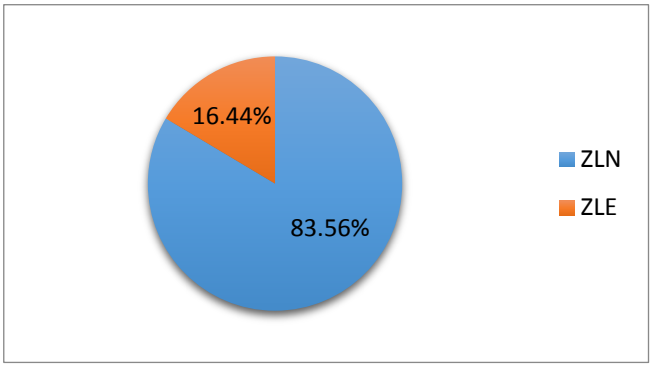


Table 3: Anaemia With Respect To Gender

Gender	Number Of Patients
Female	43
Male	30

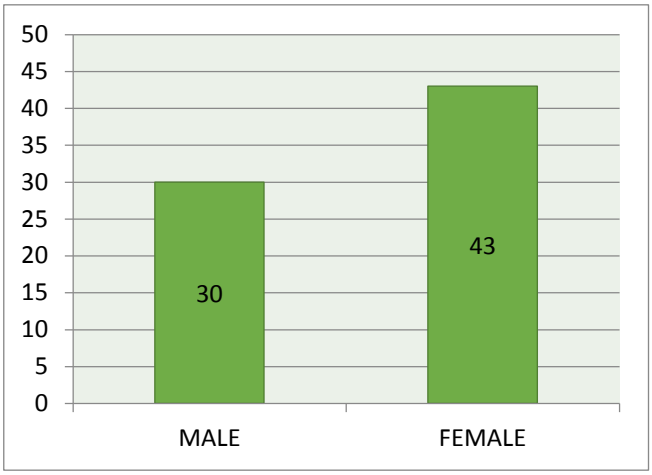


Table 4: Anaemia And Cd4 Correlation

Cd4 Count	Number Of Patients
<200	28
200-350	27
>350	18

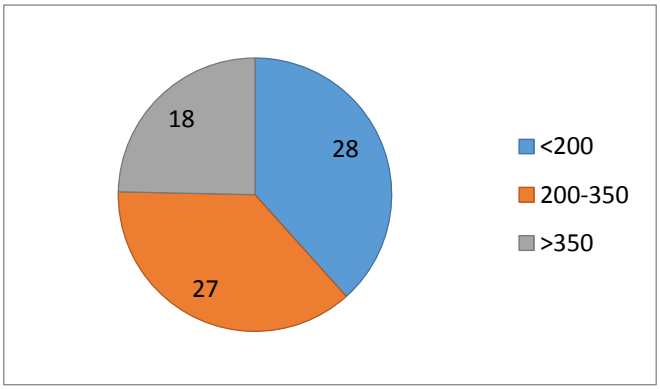
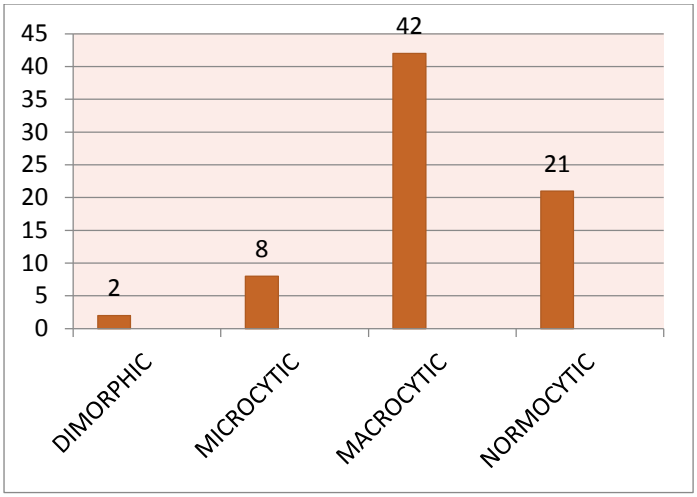


Table 5: Rbc Morphology In Patient Of Anemia

Rbc Morphology	Number Of Patients
Macrocytic	42
Normocytic	21
Microcytic	08
Dimorphic	02



1 shows maximum number of cases with anaemia presented in fourth decade.

Table 2 shows Total 73 patients with anaemia were found in this study. Out of which 61 patient were on ZLN while 12 patients were on ZLE.

Table 3 shows number of females (n=43) were more as compared to number of males (n=30). These values are statistically significant with Z=2.68 and p<0.01.

Table 4 shows correlation between anaemia and CD4. Among patients of anaemia, CD4 Count <200 was seen in 28 patient, 200-350 in 27 patients and >350 in 18 patients.

Table 5 shows study among 73 patients of anaemia, peripheral smear showed macrocytosisin 57 %(n=42) patients, normocytic morphology was seen in 29% (n=21) patients, microcytosis was seen in 11% (n=8) patients and Dimorphic picture was seen in 3% (n=2) patients i.e. macrocytosis was common among patients of zidovudine induced anaemia. These values are statistically significant. Chi square=51.54, DF=3 and P< 0.01

DISCUSSION

In our study, 73 patients suffered from anaemia. Out of 73, 61 patients were on ZLN while 12 patients were on ZLE i.e. all the regimens were zidovudine based as it causes marrow suppression. Agrawal D et al.[4] studied over 1259 patients receiving zidovudine and found that 213 (16.2%) patients on AZT regimen developed anaemia (<8 g/dL). A

In our study CD4 counts in patients of anaemia were as follows: count <200 in 28 patients (38%), count 200 to 350 in 27 patients (37%) and > 350 in18 patients (25%).Dash K et al.[5] stated that patients with low CD4 count were more prone to developing severe anaemia.

Females (43) were more prone to develop anaemia than males (30).These values are statistically significant. Agrawal D et al.[4]studied over 1259 patients receiving zidovudine and found that females were more prone to develop anaemia. Santosh NH et al.[6]in their study found that among the 21 patients of Zidovudine induced anaemia, majority (13 patients) were females. Sharma SK et al.[7] found female gender to be a risk factor for zidovudine induced anaemia.

On the basis of RBC morphology we found that peripheral smear of majority of anaemic patients showed macrocytosis (n=42). 21 patients had normocytic morphology while microcytosis was found in 8 patients and dimorphic picture was seen in 2 patients. Rajput AM et al.[8]in their study found 15 patients of ART induced anaemia, of which macrocytosis was observed in 6 patients. Tadele A.[9] found that of all the patients developing anaemia 80.6% patients had macrocytosis. Sharma SK.[7]found that peripheral smear of patients with ART induced anaemia showed normocytic normochromic anaemia in almost half of the patients and in the remaining it showed macrocytic changes.

CONCLUSION AND RESULTS

Anaemia is more common in zidovudine based regimen. Most common age group affected is fourth decade. Females are more prone to anaemia

than males and it is statistically significant. Patients with CD4 count less than 200 /ul are at more risk of anamia. Macrocytosis is commonest peripheral blood picture.

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