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A study of clinical profile of hospitalised newly diagnosed PLHIV patients at a tertiary care institute

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Abstract

Introduction: Human Immunodeficiency Virus (HIV) is a retrovirus which attacks the immune system of the human body and makes the body susceptible to opportunistic infections.In this study we are studying the clinical profile of patients who are newly diagnosed as a HIV positive during the hospital stay.

Aim: Demographic profile, clinical profile, mortality and various other associated factors in newly diagnosed HIV patients

Methods: This observationalcross-sectional study. All the patients who satisfied selection criteria were considered who are admitted. Written consent for participating in this study was taken of all patients.

Results: A total of 40 patients are included in the study who were admitted at a tertiary care centre and were diagnosed as HIV positive during the hospital stay. Themean age of newly diagnosed cases was 39.33, with range from 19 to 65.23 (60.7%) patients were males while 17 (38.7%) were females, 22 (55%) of the patients had secondary education. Loss of appetite was present in 34(85%) patients while 26patients presented with fever, 23 with wight loss. 16 (40%) patients had comorbidities out of which 5 (55.6%) had Diabetes mellitus. There were that 29 patients (72.5%) with WHO clinical stage 4. 31 patients had severe immunosuppression (CD4<200) (77.5%) and 31 were having opportunistic infections (77.5%). Tuberculosis was the most common OI, present in 28 patients (90.3%). Extra pulmonary TB was present in 26 patients (92.9%). CNS TB was the most common type of TB, in 16 patients (57.14%). In the present study, 85% of the cases were discharged while 15% of them were succumbed.

Conclusion: In this study we conclude that majority of the newly diagnosed patients are middle aged with male preponderance and presented with more advanced WHO clinical stage at the time of diagnosis. Majority of the patients had severe immunosuppression. Most of these patients had Opportunistic infections, tuberculosis being the most common OI. Extrapulmonary TB was common

in the study population. Mortality was 15% among newly diagnosed PLHIV patients admitted at tertiary care hospital

Keywords: Newly diagnosed HIV, Opportunistic infections, Tuberculosis, CD4 Count, immunosuppression.

Introduction

Human Immunodeficiency Virus (HIV) is a retrovirus which attacks the immune system of the human body. Its primary target is the CD4 cell which is responsible for identifying non-self antigens in human body and building immune response against such pathogenic antigens. HIV infects CD4 cells and thereby decreasing its function. This predisposes the patient to variety of the diseases and infections, which lead to morbidity and mortality in these patients. HIV infection is considered a pandemic. It is considered as a chronic manageable disease. As per UNAIDS 2021 global report [5]. HIV has 3 clinical stages, Acute, chronic and AIDS. [6]

Aim

Demographic profile, clinical profile, mortality and various other associated factors in hospitalised newly diagnosed HIV patients at a tertiary care hospital.

Materials And Methods

Type of study: The following study will be a observational cross sectional study.

Site of Study: Tertiary care hospital and medical teaching institute.

Risks involved: As this is observational cross-sectional study, no risk is involved

Study period: 18 months

Inclusion Criteria

1. Patients who are diagnosed as HIV positive by NACO guidelines during the course of hospitalisation in medicine wards at a tertiary care institute
2. Patients or their relatives giving written informed consent for this study

Exclusion criteria:

1. Age <12 years.
2. Patients or their relatives not giving written informed consent/assent for this study

Methods

The study is conducted from January 2021 to December 2022 in the department of General Medicine of a tertiary care hospital. Permission from Institutional Ethical committee was obtained prior to commencement of the study. Patients admitted in medicine wards were screened and those newly diagnosed with HIV according to NACO guidelines were considered for the study. Patients who satisfied selection criteria and giving Written informed consent for participating in this study was selected for the study. All patients were informed and explained about the study. Detailed history, clinical examinations, laboratory investigations and treatment given to all patients were collected with the help of structured proforma. This data was further tabulated and analysed to draw conclusions.

Results And Observations

Age

Table 1: Mean age in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

Age	**N=40**
Mean	39.33
SD	10.74
Range	19.00 – 65.00

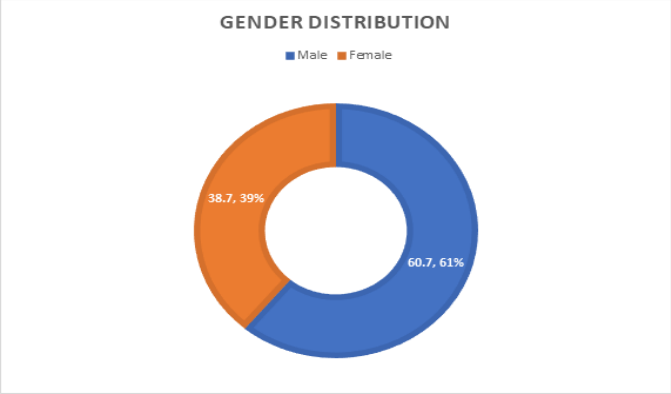
In this study 40 newly diagnosed patients during the hospital course were included, and the mean age of

newly diagnosed cases was 39.33 with a standard deviation of 10.74.

Gender

In our study, 23 (60.7%) of the patients were male while 17 (38.7%) were females. The male preponderance was present.

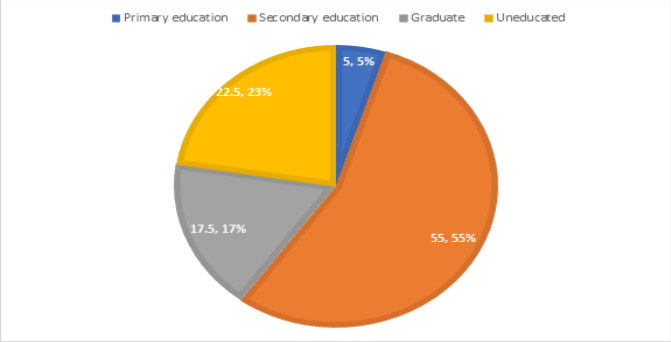
Figure 1: Gender distribution in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Education

Secondary education was present in 22 patients (55%) of the study population followed by uneducated 09 (22.5%) followed by graduates in 07 patients (17.5%) followed by primary education in 2 patients (5%).

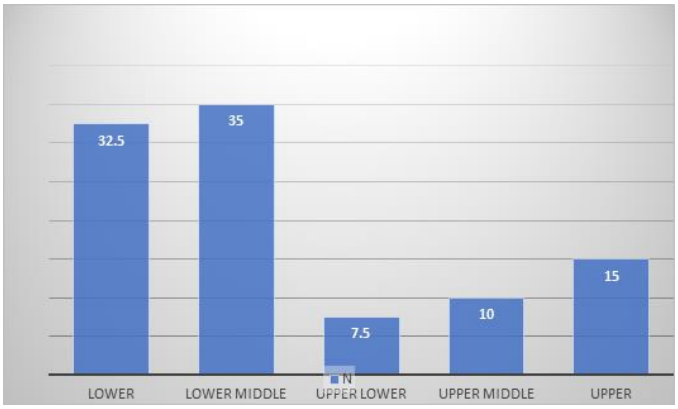
Figure 2: Distribution of education in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Socioeconomic status

Majority of the patients were from Lower middle class 14 (35%) followed by lower class 13 (32.5) followed by upper 06 (15%), upper middle 04 (10%) and upper lower 03 (7.5%).

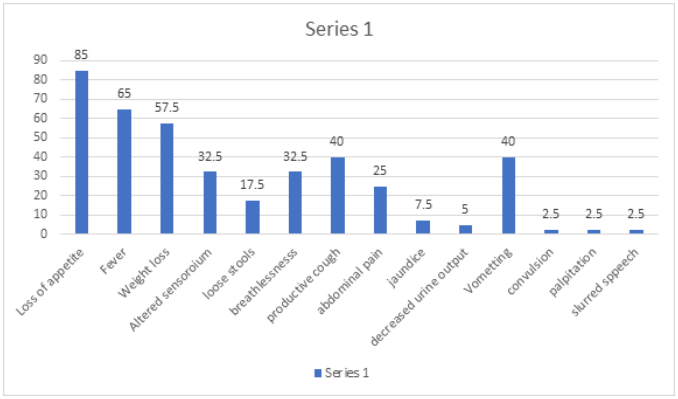
Figure 3: Distribution of Socioeconomic status in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Distribution of Chief Complaints among hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

We compared chief presenting complains in newly diagnosed PLHIV patients and it was observed that, loss of appetite in 34 (85%), fever in 26 (65%), weight loss in 23 (57.5%), and altered sensorium in 13 (32.5%) were significantly more common in these patients while palpitation, convulsions and slurred speech are the least common symptoms in 01 patient each (2.5% each).

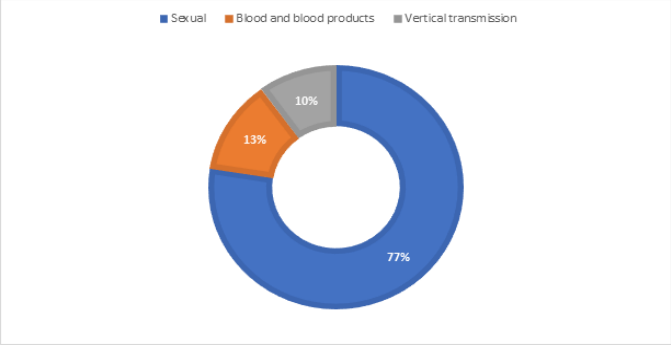
Figure4: Distribution of chief Complaints among hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Routes of Transmission among hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

In this study 31 patients (77.5%) of the population acquired the infection by sexual route, 05 (12.5 %) by blood and blood transfusion and 04 (10%) by vertical transmission.

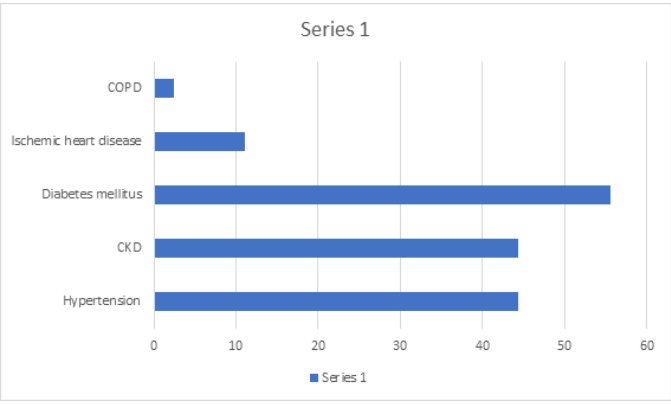
Figure 5: Routes of Transmission in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Distribution of comorbidities in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

Among the study population, the most common comorbidity was Diabetes mellitus in 05 (55.6%) followed by Hypertension and CKD present in 04 patients each (44.35%).

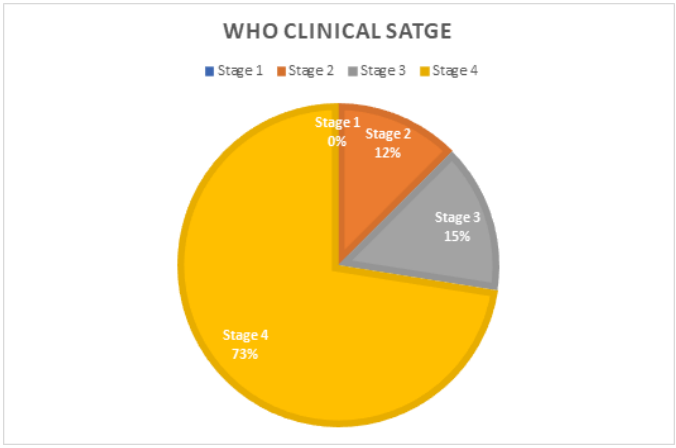
Figure 6: Distribution of comorbidities in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Profile of WHO Clinical staging in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

There were 29 patients (72.5%) with clinical stage 4 were among newly diagnosed HIV cases, 06 (15%) patients were in stage 3 and 05 (12.55%) in stage 2

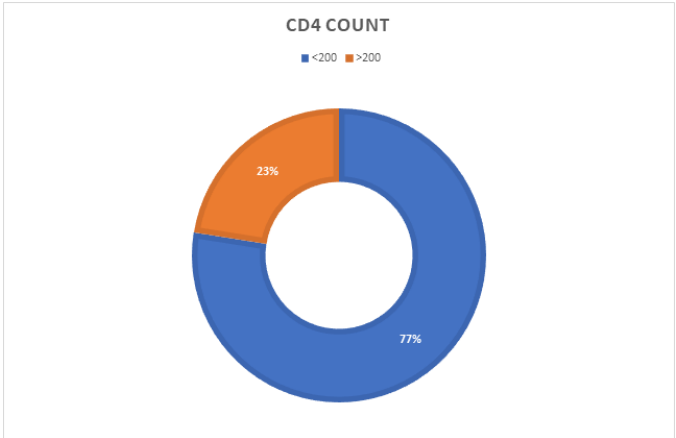
Figure 7: Profile of WHO Clinical staging in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Profile of present CD4 count in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

We compared present CD4 count of patients and divided them as those having count less than 200 that is suggestive of Severe immunosuppression and those with more than 200. Upon statistical analysis it is observed that 31 (77.5%) of patients were having Severe immunosuppression that is CD4 <200, and only 09 (22.5%) of them had CD4>200.

Figure 8: Profile of present CD4 count in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

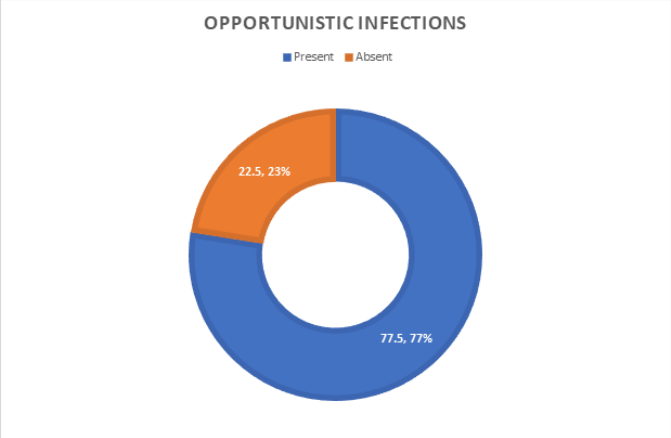


Distribution of opportunistic infection hospitalised

newly diagnosed PLHIV patients at tertiary care hospital.

Significantly higher number of patients who are newly diagnosed with HIV were having opportunistic infections 31 (77.5%) while only 09 (22.55%) of them were not having opportunistic infections.

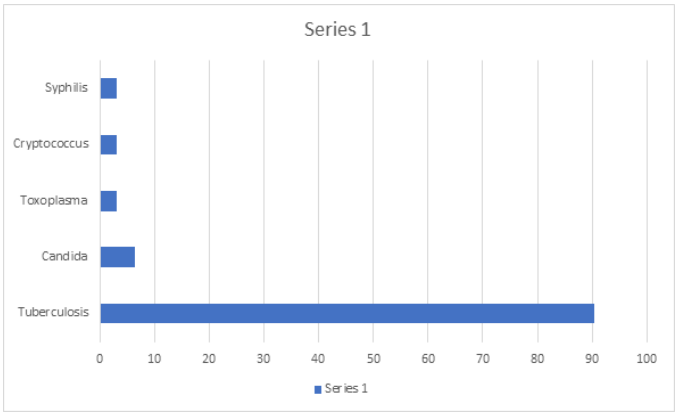
Figure 9: Distribution of opportunistic infection in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Profile of Opportunistic Infection in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

Out of 31 patients having opportunistic infections, 28 (90.3%) had tuberculosis, 02 (6.45%) had candida infection and 01 (3.2%) had toxoplasma, cryptococcus neoformans and syphilis as OI.

Figure 10: Profile of Opportunistic Infection in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Profile of tuberculosis hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

Out of the total population, 28 patients had tuberculosis and 12 (42.9%) of them had disseminated Tuberculosis (more than one system involved) while 16 (57.1%) patients had only one system involved. 15 (53.6%) of them had Extrapulmonary Tuberculosis, 11(39.3%) patients had both pulmonary and extrapulmonary TB, while only 2 patients (7.1%) had Pulmonary Tuberculosis.

Figure 11: Types of tuberculosis in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

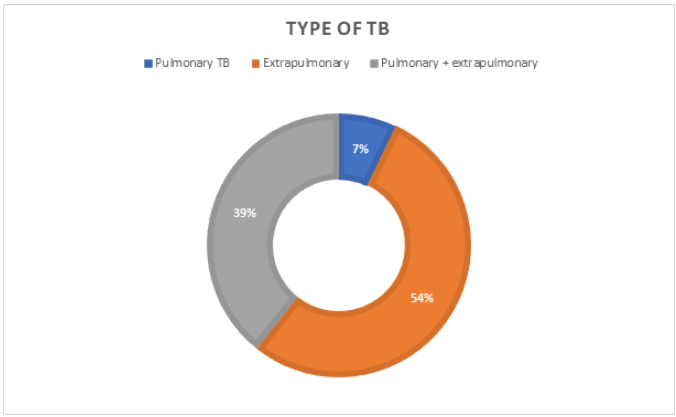
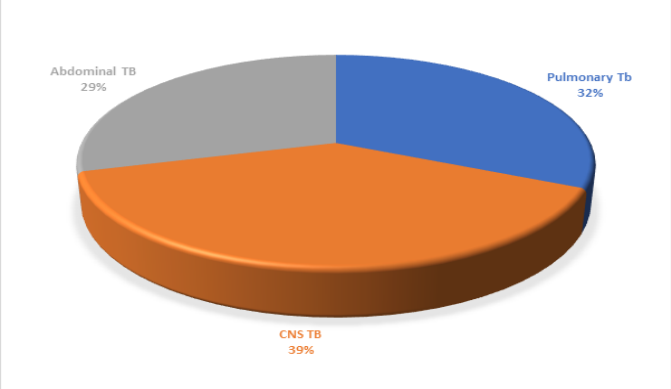


Table 2: Number of Systems involved in TB

System involved	N (%)
One system	16 (57.1)
More than one system (Disseminated TB)	12 (42.9)

In the present study population, 13 (46.5%) patients had pulmonary TB, 16 (57.14%) had CNS TB while 12 (42.9%) had abdominal Tuberculosis.

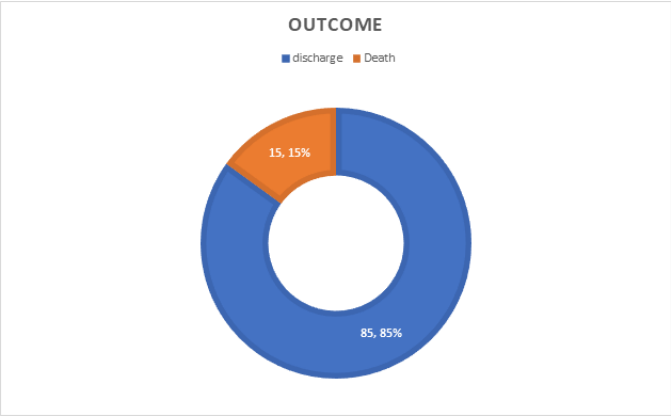
Figure 12: systemic involvement of TB in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Profile of Outcome in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.

In this study, 34 (85%) of the cases were discharged while 06 (15%) of them were succumbed to death.

Figure 13: Profile of Outcome in hospitalised newly diagnosed PLHIV patients at tertiary care hospital.



Discussion

This study has included 40 patients admitted at medicine wards of a tertiary care center which were newly diagnosed as HIV positive during the course of hospitalization.

The mean age of the study population was 39.33 years with male preponderance (60.7% males). Majority of the study population had secondary education (55%) and belonged to lower middle class of socioeconomic strata. Shen Y142 et al reported that the Median age of newly diagnosed HIV was 40 years (range: 18–80 years) which is similar to our study. Bishnu S et al [01] also reported similar findings to the present study.

The most common chief complain was loss of appetite (85%) followed by fever (65%) followed by weight loss (57.5%). Cough was present in 40% of the patients and Altered sensorium was present in 32.5%. Bishnu S et al [01], Fever was the commonest (28.89%) systemic, and overall symptom, followed closely by weight loss (28.61%), generalized weakness (22.22%), diarrhea (15.00%) and cough (14.44%). These findings are also comparable with the study by Lakoh145et al who reported that the most common symptoms were fever (77.5%), cough (56.1%), weight loss (53.8%), generalized malaise (53.2%), anorexia (38.7%), and diarrhea.

37.5% of the study population had comorbidities most common of them being diabetes mellitus (55.6%) followed by hypertension and chronic kidney disease (44.4% each). A Prioresch et al [2] had reported in their study that 35% of the population had DM but there was no significant association between DM and HIV infection.

Among the newly diagnosed HIV patients, significantly higher number of patients (72.5%) were with clinical stage 4, 15 % patients were in stage 3 and 12.55% in stage 2. Bishnu S et al [1], reported that Maximum number of patients (133, 36.94%) were in WHO clinical stage 4 while 83, 47 and 78 patients were in stages 3, 2 and 1, respectively which are similar findings to the present study. These findings are also comparable with the study by Lakoh et al. [3] The advanced WHO

clinical stage can be attributed to the delayed presentation of newly diagnosed cases with severe immunosuppression and AIDS defining illnesses. thus, aggressive screening program and high degree of suspicion is needed for Early diagnosis and treatment.

We compared present CD4 count of patients and divided them as those having count less than 200 that is suggestive of severe immunosuppression and those with more than 200. Upon statistical analysis it is observed that significantly higher number (77.5%) of patients in newly diagnosed group were having severe immunosuppression that is CD4 <200, and only 22.5% of them had CD4>200. Bishnu S et al [1], reported that 65 per cent of the study population had an initial CD4 count less than 200 cells/µl. According to WHO guidelines for immunological classification of HIV 154, this translates into the fact that a majority of the HIV patients in the present setting have advanced or severe immunosuppression at the time of diagnosis. These findings are similar to our study.

In context of presence of opportunistic infections between the two groups, it was found that significantly higher number of patients among the newly diagnosed HIV cases were having opportunistic infections (77.5%) while only 22.55 of them were not having opportunistic infections (p <0.001). The findings are consistent with study by Bishnu S [1] et al. The above findings can be justified because most of the patients are being diagnosed at very advanced stage of the disease and with severe immunosuppression. Thus, a high index of suspicion, more aggressive screening program, identifying at risk people, etc are the need of time for early diagnosis and treatment of HIV.

Out of the total population, 28 patients had tuberculosis and 12 (42.9%) of them had disseminated Tuberculosis (more than one system involved) while 16 (57.1%) patients had only one system involved. Extra-pulmonary tuberculosis was seen in 26 (92.9%) of our HIV/TB coinfected patients, of which 11 (39.2%) had simultaneous pulmonary disease while only 2 patients (7.1%) had isolated Pulmonary Tuberculosis. In the present study population, 46.5% patients had pulmonary TB, 57.14% had CNS TB while 42.9% had abdominal Tuberculosis. Tuberculosis with HIV/AIDS co-infection often has an atypical presentation. Fortunately, tuberculosis in HIV/AIDS is curable as in immunocompetent hosts. According to Praveen Kumar et al [04] Extra-pulmonary tuberculosis was seen in 19 (45.6%) of our HIV/TB patients, of which 15 (35.6%) had simultaneous pulmonary disease

In the present study, 85% of the cases were discharged while 15% of them were succumbed to death. On the contrary Lakoh et al [03], reported that a total of 52 deaths occurred during hospitalization among the newly diagnosed cases, yielding a HIV-associated in-hospital mortality rate of 30.1%.

Summary

- Amongst hospitalised newly diagnosed PLHIV patients at tertiary care hospital, Middle age was the most common age group, with mean age of 39.33 years
- Male preponderance was present in the study.
- In context of chief complains, most common chief complain was loss of appetite (85%) followed by fever (65%), weight loss (57.5%) and Cough (40%) of the patients.
- Diabetes mellitus was the most common comorbidity inhospitalised newly diagnosed PLHIV patients at tertiary care hospital.

- Among the hospitalised newly diagnosed PLHIV patients at tertiary care hospital,
  most of the patients were in WHO Stage 4 and had severe immunosuppression (CD4<200)
- Majority of the hospitalised newly diagnosed PLHIV patients at tertiary care hospital were having opportunistic infections, Tuberculosis being the most common Opportunistic infection (90.3%)
- Among the patients having tuberculosis, Extra pulmonary tuberculosis was most common (93%)
- CNS TB was the most common type of tuberculosis among hospitalised newly diagnosed PLHIV patients at tertiary care hospital.
- The mortality among hospitalised newly diagnosed PLHIV patients at tertiary care hospital was 15%.

Conclusion

From the present study we conclude that, majority of the hospitalized HIV patients were having a very advanced disease with severe immunosuppression and most of them had comorbidities. Opportunistic infections were seen very commonly in this Patients, TB being the most common. Hence the morbidity and mortality in these patients was very high.

Thus, early diagnosis and treatment initiation is need of the hour to reduce the morbidity and mortality in such patients. There should be a high degree of suspicion of HIV, Early identification of constitutional signs and symptoms, identification of high-risk behavior and more aggressive screening programs for early detection of HIV. Close contacts of the index case should be identified and screened for HIV infection even if asymptomatic.

Rapid initiation of ART in the newly diagnosed patients unless contraindicated, is beneficial for the patient as well as the community as it not only reduces the morbidity and mortality in patients and improves the quality of life but also reduces the transmission of the virus to the community. Primordial and primary preventive measures should be encouraged.

List of abbreviations

1) HIV- Human Immunodeficiency Virus
2) PLHIV- People living with HIV
3) TB- Tuberculosis
4) WHO- World health organisation
5) DM- Diabetes mellitus
6) CD4- Cluster of differentiation-4

References

1. Bishnu S, Bandyopadhyay D, Samui S, Das I, Mondal P, Ghosh P, Roy D, Manna S. Assessment of clinico-immunological profile of newly diagnosed HIV patients presenting to a teaching hospital of eastern India. Indian J Med Res. 2014 Jun;139(6):903-12. PMID: 25109725; PMCID: PMC4165003.
2. Prioreschi A, Munthali RJ, Soepnel L, Goldstein JA, Micklesfield LK, Aronoff DM, et al. Incidence and prevalence of type 2 diabetes mellitus with HIV infection in Africa: a systematic review and meta-analysis. BMJ Open. 2017 Mar;7(3):e013953.
3. Lakoh, S., Jiba, D.F., Kanu, J.E. et al. Causes of hospitalization and predictors of HIV-associated mortality at the main referral hospital in Sierra Leone: a prospective study. BMC Public Health 19, 1320 (2019).
4. Kumar P, Sharma N, Sharma NC, Patnaik S. Clinical profile of tuberculosis in patients with HIV Infection/AIDS. Indian J Chest Dis Allied Sci. 2002 Jul-Sep;44(3):159-63. PMID: 12206474
5. UN Joint Programme on HIV/AIDS (UNAIDS) (2021) Global AIDS update-2021: Confronting

inequalities. Available at: https: // www. unaids. Org / sites / default /files/ media_asset / 2021 - global-aids-update_en.pdf

6. The stages of HIV infection [Internet]. National Institutes of Health. U.S. Department of Health and Human Services; [cited 2023Feb23]. Available from: https://hivinfo.nih.gov/understanding-hiv/fact-sheets/stages-hiv-infection