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Extra-pulmonary Symptoms in HIV Positive Patient and It's Correlation with CD4 Count

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ABSTRACT

Background: There is correlation between HIV& pulmonary TB. Patient with HIV has higher incidence of pulmonary TB. It is also noted the correlation of CD4 count with TB manifestations i.e. Pulmonary & extra-pulmonary TB.

Methods: Observational study in 70 patients with HIV in SMIMER, SURAT. Investigations were done with all routine with specific CD4 count. The rate analysed according to CD4 count.

Results: In HIV patients TB is common. There are two groups, Pulmonary and extra-pulmonary. After analysis of data, it is noted that there is a significant correlation with CD4 count. Pulmonary TB cases were common with CD4 count 300-500 and extra-pulmonary TB cases were common with CD4 < 300. Lymph-node TB (200-300), TB meningitis (100-200), Disseminated TB (<100) were also common in lower CD4 count.

Conclusion: CD4 count is very important to determine type of tuberculosis in HIV positive patients. Also it is very important to determine morbidity& mortality.

Keywords: HIV, CD4 count, Extra-pulmonary, Tuberculosis

INTRODUCTION

Tuberculosis is the commonest opportunistic infection among HIV infected individuals.[1] Worldwide approximately one third of all Acquired immunodeficiency syndrome related death are associated with Tuberculosis& Tuberculosis is the primary cause death for 10-15% of patients with HIV infection.[2]

Further it is also known that Tuberculosis being a major public health problem in India accounts for 20-25% of death among patients living Human Immunodeficiency Virus. On the other hand, it is noted that nationally about 5% Tuberculosis patients regarded under Revised National Tuberculosis Control Programme (RNTCP) , also +ve HIV infection.

There has been an increase in the number of reported cases of extra pulmonary tuberculosis (EPTB), and depending on the region, ethnic group and HIV coinfection rates, the prevalence of EPTB is between 15 and 50%.[3]

METHODS

This study was carried out on 70 patients diagnosed as Patients Living With Acquired Immunodeficiency Virus and admitted in SMIMER Hospital, Surat. Permission was obtained from Institutional medical ethics. All routine & some specific tests were done with special reference with CD4 count. This was a cross sectional study conducted in a tertiary care hospital

Purposive sampling technique was used with sample size of 70 cases and 30 controls in these studies who had diagnosed with Human immune Deficiency Virus. The information collected using interview technique facilitated by the guidelines (questionnaire) prepare for asking questions. The information noted in the questionnaire form.

After completion of data collection, data entry was done into excel data file. All variables in the study were qualitative, so students test was used to calculate p value. 95% confidence interval was considered significant. ($p<0.05$)

RESULTS

Maximum numbers of patients were in group of between n18-39 years.

Most common TB was pulmonary TB and having Mean CD4 count among them was 128, followed by disseminated TB followed by TB lymph node.

Table 1: Age wise distribution

Age group (years)	Cases (%)
18-39	47 (67.14)
40-59	23 (32.86)
Total	70 (100)

All form of TB including tuberculous meningitis, Lymph Node TB, Disseminated TB, Abdominal Koch's were common among patients having CD4 counts less than 200.

Table 2: Tuberculosis in HIV infected patients and its correlation with CD4 counts

Tuberculosis	Cases (%)	Median CD4 cell (Min-Max)	Mean CD4 Cell
Pulmonary TB	17 (29.78)	128 (58-592)	184.47
Pleural effusion	5 (5.32)	159 (66-401)	203.8
Lymph Node	9 (12.85)	161 (119-332)	175.22
Tuberculous meningitis	2 (2.13)	214 (213-215)	214
Disseminated TB	21 (22.34)	53 (35-102)	54.66
Miliary TB	1 (1.06)	219	219
Abdominal Koch's	15 (16)	168 (55-457)	182.86
Total	70 (100)	120 (24-592)	146.71

Table 3: Correlation between Various Tuberculosis and CD4 count

CD4 cell count (µl)	Tuberculous meningitis	Lymph Node TB	Disseminated TB	Abdominal Koch's
0-200	14(93.34%)	7(77.78%)	20(95.24%)	9(60%)
201-700	1(6.66%)	2(22.22%)	1(4.76%)	6(40%)

DISCUSSION

The above table 1 shows that out of 70 patients included in the study, maximum (67.14%) patients were in the age groups of 18-39 years. This observation is similar to MS Zaheer et al [4]68.70%) and S.K. Sharma et al[5] (76%) who found that maximum no. of patients in the age group of 18-39 years. This is probable due to the reason that this age group is generally found to be sexually active. 23 patients (32.86%) were from the age group of 40-59 years. There was no any patient more than 60 years.

In our study, disseminated TB is found in 22.88% of patients. In SK. Sharma et al[5], disseminated TB was found in 25.20% of patients, Kumaraswamy study[6] sates extra pulmonary tubercular manifestations occur in 46-79% of patients with pulmonary TB with Human Immunodeficiency Virus. Patients with pulmonary tuberculosis had higher mean CD4 count (mean 146.71/µl). Our findings are similar to those of SK Agarwal et al study.[7]

As per above table maximum number (93.34) of tubercular meningitis patients had CD4 count < 200. In Jayral et al study[8] 73.68% patients with tuberculosis meningitis had CD4 count be <200. Two patients had radiological evidence of CNS tuberculoma.

In our study, disseminated TB detected 21 patients. Out of these 20 patients had CD4 < 200 and remaining 1 patients CD4 count was 201. This observation closely correlates with Jayral et al study[8] (100%).

Out of 15 case of abdominal koch's 9 cases had CD4 count less than < 200 while in Jayral et al study[8] out of 12 abdominal TB cases 9 cases had CD4 count< 200.

The above table shows that out of 70 patients included in this study, 42 patients (60%) had respiratory involvement, 4 cases (5.71%) had CNS involvement, 41 cases (58.58%) had abdominal system involvement.

Maximum numbers of patients (68%) were from the age group of 18-39 year. Pulmonary TB was diagnosed in 22 patients (31.42%) and extra pulmonary TB were reported in 48 (68.58%) patients. Tuberculous plural effusion found in only 5 patients. Commonest form of extra pulmonary TB was Disseminated TB detected in 21 (30%) patient followed by abdominal tuberculosis in 15 (21.42%). Tuberculoses lymphadenopathy and CNS tuberculosis

were reported in 9 (12.85%) and 3 (4.28%) patients, respectively.

As the CD4 count decreases below 200µl in HIV infected patients there was more chances of disseminated TB[9]. The diagnosis can established with cytology /biochemical analysis of fluid, histopathological examination and ZN staining of tissue coupled with radiological features and response to ATT[10]. Adequate knowledge of manifestations of tuberculosis in HIV infected patients is absolutely necessary for optimal management and to reduce mortality& morbidity.[11,12]

The existences of HIV & Tuberculosis together, greatly amplifies harmful effect of each other at individual level and contribute substantially to mortality among patient living with Human Immunodeficiency Virus.[13]

CONCLUSION

CD4 count is very important to determine type of tuberculosis in HIV positive patients. Also it is very important to determine morbidity & mortality. All form of TB including tuberculous meningitis, Lymph Node TB, Disseminated TB, Abdominal Koch's were common among patients having CD4 counts less than 200.

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