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Prevalence of TB-HIV coinfection burden in a tertiary care center from 2018 to 2020, A retrospective four-year study

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***Abstract*---**HIV is the most important cause of death amoung tuberculosis patient. About 25 % of all causes of death. HIV promote progression of latent TB infection, which become difficult to diagnose initially later on comorbidity and mortality leads to late diagnosis and death of patients. The current study was from Jan 2018 to Dec 2021, and a retrospective study design was conducted. Many TB patients were found to be hidden HIV infection so active screening is needed, for active case finding. Proper recording should be design, data including phone number should be collected for proper follow-up.

***Keywords*---**HIV, important cause, tuberculosis patient.

Introduction

HIV is the most important cause of death amoung tuberculosis patient. About 25 % of all causes of death. [1]. HIV promote progression of latent TB infection,

which become difficult to diagnose initially later on comorbidity and mortality leads to late diagnosis and death of patients. Tuberculosis is the second leading cause of death, but it is the 3rd cause of hospital admission in the country. and Human Immune deficiency Virus is the first cause of death worldwide, the place of coinfection is to be evaluated [3,4]. Across the world the incident of TB cases in 2013 was 9 million in 2013 and coinfected cases were 13% [2]. Amoung the 1.5 million TB death 0.4 million death found on HIV positive patients [5].

India TB report on sept. 2019 TB is the main cause of morbidity and mortality of PLHIV, and is 2`1 time more chance to develop TB. [6]. Having 25% of all death are due to TB. It is 3rd highest HIV burden country in world with an adult prevalence rate of o.22% HIV comorbidity with TB in INDIA was 50000 out of total 2,155,894 cases, and rate is 3.4% in 2019 and in 2018 this figure was 3% with 43,253 cases out of 1,444,175. It is found that When we consider latent TB infection 40% of Indian population is infected with TB bacilli and few of them actually develop TB disease, and the lifetime risk of TB disease in HIV is –20 t0 37 time and non-HIV is 10%. [6]

Material and Methods

A cross sectional retrospective study was conducted on all TB-HIV patients attending medicine ,and pulmonary medicine OPD.BBMCH BALANGIR. Demographic profile ,substance use status ,sputum status,CD4 count ,complete blood count ,vit D level ,radiological parameter like chest x ray and CT SCAN THORAX .Data was entered in Microsoft excel and Analysed in SPSS version 20..Datas were collected in HIV-TB register. Management of TB-HIV co-infection patients' needs special diagnostic and therapeutic challenges because of atypical presentation in low immunity state. Therefore, the main goal of this study was to determine the prevalence and associated factors of TB-HIV coinfection patients coming to outpatient department, and admitted patients at indoor of BBMCH Balangir.so it is expected that finding from this study will contribute knowledge to the HIV-TB planners, decision makers and project implementers. Amoung the opportunistic infections of HIV patients TB are most common with high risk for mortality.

Study Design

The current study was from Jan 2018 to Dec 2021, and a retrospective study design was conducted.

Patient Registration Collection of Data and Descriptive Analysis

Data's were collected from TB-HIV register

Ethical Consideration

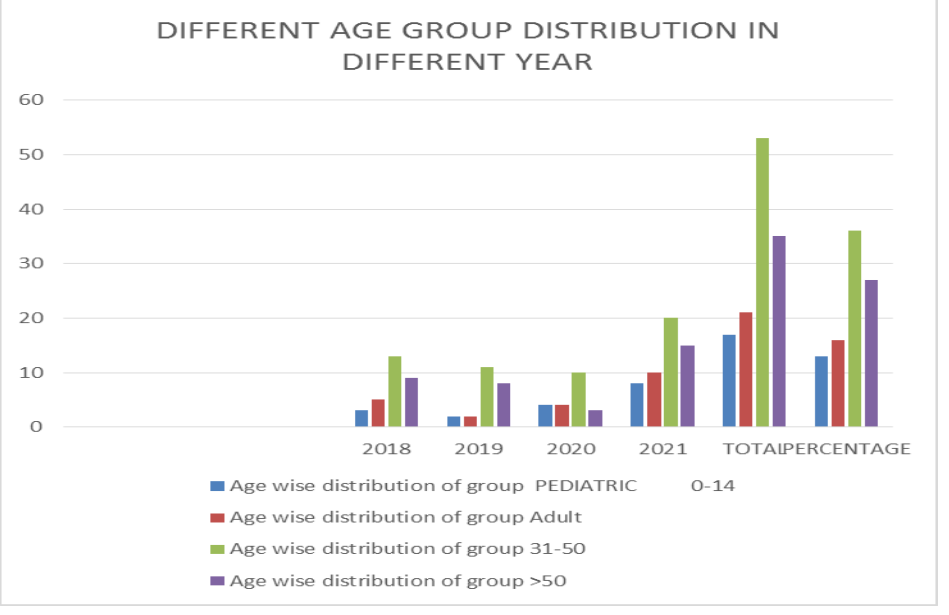
Ethical committee permission was taken from NTPC patient interaction was not needed so patient consent not taken.

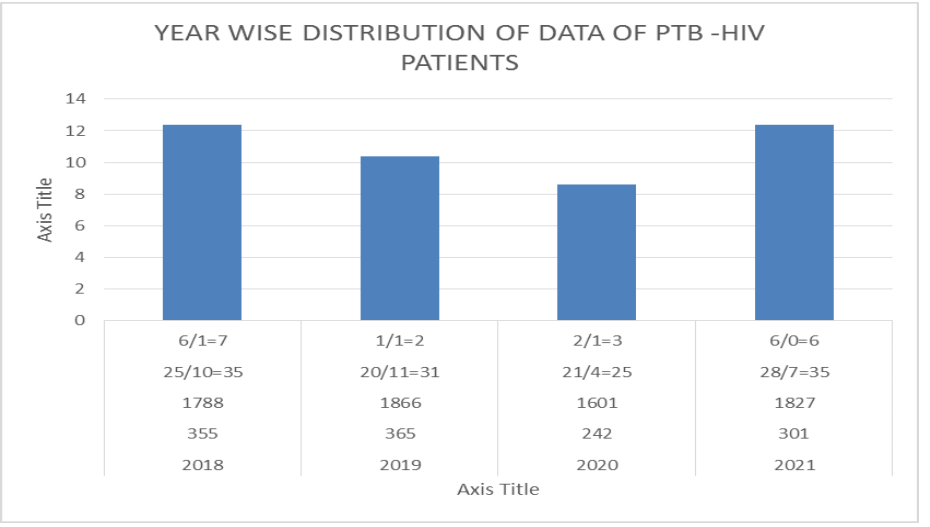
Results

Out of 1248 HIV patients, and 7018 TB patients 126 were PTB HIV patients taken in a tertiary centre of DHH Balangir from 2018 to 2021.Out of this 126 TB-HIV ,2019 and 2020 patient load decreases may be due to covid infection. Out of them,43 was EPTB and 104 were PTB. Pulmonary TB is higher than extrapulmonary TB, and sputum positive TB is slightly higher than clinically diagnosed TB. The prevalence of Female PTB-HIV population is less than male.

`year	Age wise distribution of group			
	PEDIATRIC 0-14	Adult 15-30	31-50	>50
2018	3	5	13	9
2019	2	2	11	8
2020	4	4	10	3
2021	8	10	20	15
TOTAL	17	21	53	35
PERCENTAGE	13	16	36	27

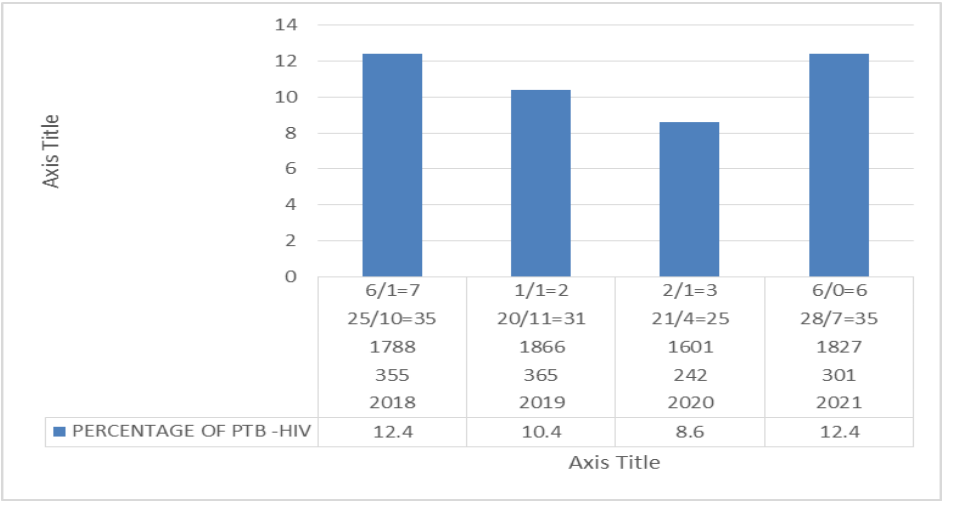
Table 1 showing different age group distribution in different year and having lowest percentage in age group 15 to 30 and highest percentage in age group 31 to 50.





YEAR	TOTAL HIV	TOTAL TB	PTB-HIVM/F	DEATH M/F	PERCENTAGE OF PTB -HIV
2018	355	1788	25/10=35	6/1=7	12.4
2019	365	1866	20/11=31	1/1=2	10.4
2020	242	1601	21/4=25	2/1=3	8.6
2021	301	1827	28/7=35	6/0=6	12.4

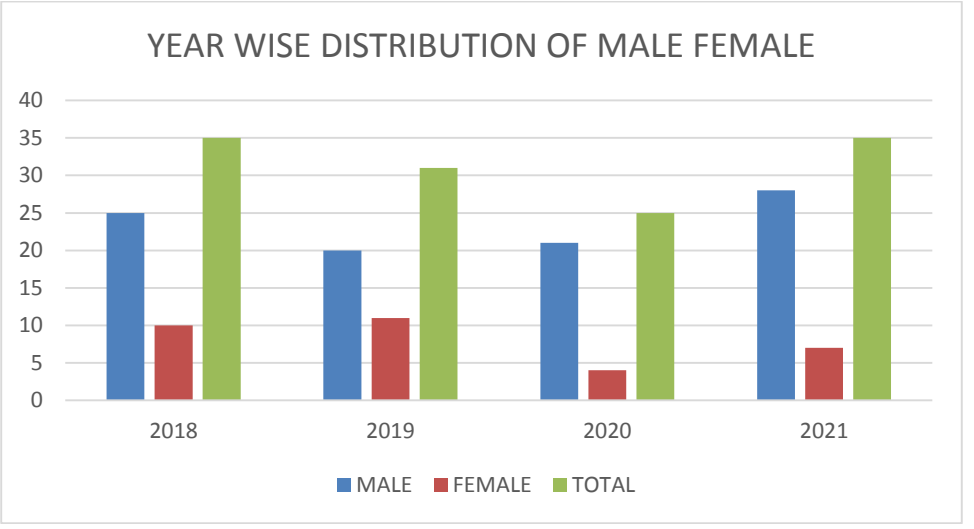
Table 2- Showing different of year wise distribution data's like, total HIV patients, total tuberculosis patient



Year	Male	Female	Total
2018	25	10	35
2019	20	11	31
2020	21	4	25

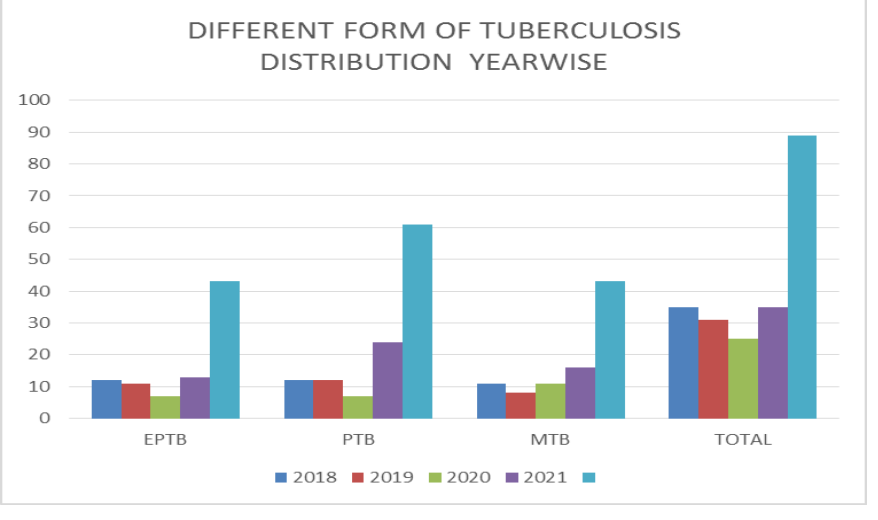
2021	28	7	35

Table 3 showing year wise male female distribution



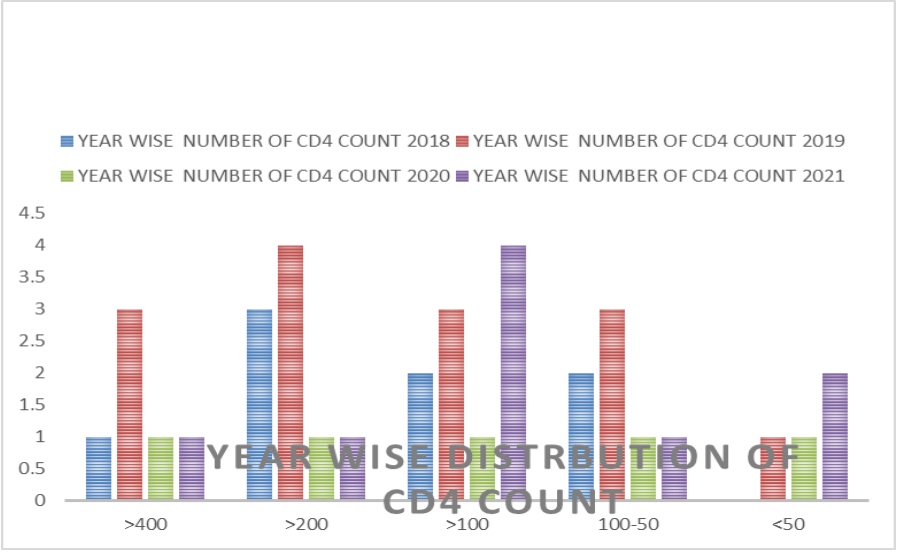
YEAR	EPTB	SPUTUM POSITIVE	CBNAAT	TOTAL
2018	12	12	11	35
2019	11	12	8	31
2020	7	7	11	25
2021	13	6	16	35
	43	37	46	126

Table 4: Showing different form of tuberculosis ,and EPTB ios less than microbiologically positive TB,amoung frank smear positive is less in pulmonary TB.



No. of CD4 COUNT	YEAR WISE NUMBER OF CD4 COUNT			
	2018	2019	2020	2021
>400	11	13	9	2
>200	12	9	8	5
>100	9	8	3	4
100-50	2	3	1	1
<50		1	1	2

Table 5- Showing year wise distribution of CD4 count, which ranges from 50 to 400. <50 is few than > 200. 2020 having lowest CD4 value.



Analysis and Statistic

Discussion

Although HIV prevalence is more the coinfection part is limited may be due to defective way of screening lost to follow-up. Prevalence of tuberculosis-HIV Is higher in age group 31-40 [4,5,10], that is co infection is more in reproductive age group. Male predominance may be due to risky behaviour, [2,11]. Few --- HIV patients were lost for follow-up to do CD4 count, in HIV CLINIC, Sputum positivity is slightly higher, more if CD4 count >200, sputum negative and CBNAAT positive if CD4 count >100 and it is clinically diagnosed if CD4 count <50. =27% of coinfected patients were lost.92 patients out of 126 patients were registered for CD4 count. [12]. Pulmonary patients and extrapulmonary nary patients are 65% and 34% respectively which is lesser than other studies in India, Singapore, and Israel [9] [10]. Of the pulmonary patients 0.32% reactive were bacteriologically confirmed patients which is lesser also than other studies in Southeast Asia [4 ,5]. Due to delay in screening and integration has several untoward conditions can arises for both TB-HIV programs, including

1. Progression of undetected infection
2. Increased the risk of poor treatment outcomes and higher mortality.4 Strategies are urgently needed to improve the screening of all registered TB patients for HIV at the time of registration [13].

Limitation of Study

Non availability of proper recording, many patients were lost to follow-up, treatment outcome.

Conclusion

Many TB patients were found to be hidden HIV infection so active screening is needed, for active case finding. Proper recording should be design, data including phone number should be collected for proper follow-up.

Financial conflict

As all the data are available, on patients record so there is no financial conflict present.

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