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Original Research Article

Screening for HIV among presumptive and microbiologically confirmed tuberculosis patients in a tertiary care hospital, Puducherry

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ABSTRACT

Background: Screening of presumptive cases of TB for HIV is a challenge as it requires pre-test counselling and informed consent of the patients. This study aims to measure the proportion of presumptive TB cases who were screened for HIV status and their outcome.
Methods: The present study was a record based cross sectional study comprising of all presumptive and confirmed cases of tuberculosis patients who visited PIMS during the study period, from June 2019 to June 2021. Percentage and proportions were used to express the outcome variable.
Results: A total of 862(39.3%) out of 2,193 presumptive tuberculosis patients were screened for HIV in the last 2 years, out of which 9 patients (1%) turned positive. Out of 328 microbiologically confirmed tuberculosis patients we have screened 325(99%) patients and 6 (1.8%) patients were found to be positive.
Conclusions: As per provide initiated HIV testing and counselling guidelines, screening of presumptive cases of TB yielded positive results in identifying additional cases of HIV positive patients.

Keywords: HIV, Presumptive tuberculosis, PITC

INTRODUCTION

In India, to increase human immunodeficiency virus case detection, the National Technical Working Group on TB /HIV had made it mandatory to screen for HIV infection among presumptive tuberculosis and microbiologically confirmed tuberculosis cases.[1] Routine screening of presumptive tuberculosis patients for HIV was advocated in the Treatment and Operational Guidelines of TB in India in 2016. The main objective of this program is to decrease the impact of HIV in presumptive tuberculosis patients and provide access to HIV related care.[2]

The joint HIV/TB activities in India started in 2001 with 6 states, Maharashtra, Manipur, Nagaland, Karnataka, Tamil Nadu and Andhra Pradesh. These early activities included joint training of staff and cross-referral meaning intensified (TB) case-finding at Integrated Counselling and Testing Centres with referral of presumptive TB cases to NTEP Designated Microscopy Centres and referral of TB patients having HIV risk factors to ICTC for voluntary HIV counselling and testing. These Collaborative Activities were extended to 8 additional states in 2004 (Delhi, Gujarat, Himachal Pradesh, Kerala, Orissa, Punjab, Rajasthan and West Bengal) and to cover entire country by 2008.[3]

The overall purpose is to articulate the national policy for TB/HIV Collaborative Activities between NTEP and NACP so as to ensure reduction of TB and HIV burden in India. The joint collaborative activity intended to

maintain close coordination between NTEP and NACP at National, State and District levels, to decrease morbidity and mortality due to TB among persons living with HIV/AIDS, to decrease impact of HIV in TB patients and provide access to HIV related care and support to HIV-infected TB patients and to significantly reduce morbidity and mortality due to HIV/TB through prevention, early detection and prompt management of HIV and TB together.[4]

The adult HIV prevalence in India is third highest in the world. On the other hand, India has the highest Tuberculosis (TB) burden country in the world with an estimated 2.2 million new TB cases occurring annually.[5] While TB is commonest opportunistic infection in HIV-infected individuals, HIV infection is an important risk factor for acquiring TB infection and its progression to active TB. HIV/TB together is a fatal combination with extremely high death rates (15 to 18%) reported among HIV-infected TB cases notified under Revised National TB Control Programme. Overall, TB is estimated to cause about 25% of all deaths among PLHIV in India. Early detection of HIV/TB cases and prompt provision of Anti-Retroviral Treatment and Anti-TB Treatment are key interventions to reduce mortality rates significantly.[6] Screening of presumptive cases of TB for HIV is a challenge as it needs consent of the patients. This study aims to measure the proportion of presumptive TB cases who were screened for HIV status and their outcome.[1]

METHODS

It was a record based cross-sectional study. All presumptive and confirmed cases of tuberculosis who visited PIMS during the study period, from June 2019 to June 2021 were included in the study. PIMS-NTEP core committee meeting is being conducted once in every 3 months. We have analyzed the data from June 2019 to June 2021 NTEP Core committee record. Statistical tests employed and percentage and proportions will be used to express the outcome variable.

RESULTS

We have screened 862 (39.3%) out of 2,193 presumptive tuberculosis patients, of which 9 patients (1%) turned positive. Out of 328 microbiologically confirmed tuberculosis patients we screened 325 (99%) patients and 6 (1.8%) patients were found to be positive.

Table 1: Presumptive tuberculosis.

Quarters	Presumptive cases	Screened for HIV		Positive cases	
3rd quarter 2019	587	222	37.80%	2	0.90%
4thquarter 2019	645	225	34.80%	2	0.80%
1stquarter 2020	547	196	35.80%	2	1%
2ndquarter 2020	45	10	22.20%	Nil	0%
3rdquarter 2020	75	24	32%	Nil	0%
4th quarter 2020	97	52	53.60%	1	1.90%
1st quarter 2021	159	95	59.70%	2	2.10%
2nd quarter 2021	38	38	100%	Nil	0%
Total	2,193	862	39.30%	9	1%

Table 2: Confirmed cases of tuberculosis.

Quarters	Total cases	Screened for HIV		Positive cases	
3rd quarter 2019	86	85	98.80%	2	2.30%
4thquarter 2019	70	70	100%	2	2.80%
1stquarter 2020	52	52	100%	Nil	0%
2ndquarter 2020	10	10	100%	Nil	0%
3rdquarter 2020	25	24	96%	Nil	0%
4th quarter 2020	25	25	100%	Nil	0%
1st quarter 2021	40	39	97.50%	2	5.10%
2nd quarter 2021	20	20	100%	Nil	0%
Total	328	325	99%	6	1.80%

DISCUSSION

This study shows the importance of PITC guidelines for HIV screening among Presumptive tuberculosis patients as it identified additional cases of HIV positive patients. A study conducted by Kumar et al showed that 115,308 patients with presumptive TB were examined for sputum smear microscopy at 645 microscopy centres state-wide. of these, HIV status was ascertained for 62,847 (55%) among whom 7,559 (12%) were HIV-positive, and of these, 3,034 (40%) were newly diagnosed.[7] Another study conducted by Srikanthia et al found that over 35% of

HIV-infected cases in their population would have been undetected if HIV testing was limited to cases with diagnosed TB. The high HIV seroprevalence in both TB and non-TB cases merits HIV testing for all patients evaluated at TB clinics. HIV-infected TB suspects reporting high-risk behaviour are at risk for HIV transmission, and should receive risk-reduction counselling.[8] Deribew et al conducted interviews by trained nurses using a pretested questionnaire which showed that out of 506 new TB suspects identified in 27 health centres in Addis Ababa were offered HIV testing, 59% were tested for HIV and accepted the test result. Individuals with knowledge about HIV counselling and testing procedures were 2.5 times more likely to be tested than individuals with poor knowledge. TB suspects who had previously been tested for HIV were twice as likely to accept HIV testing and to receive the result of the test (OR = 2.0, 95%CI 1.4-2.9).[9]

Another study conducted by Rajaram et al found that among the 964 presumptive tuberculosis patients who attended pulmonary medicine OPD, 189 patients were sputum acid-fast bacilli (AFB) positive. Among the 189 sputum positive cases, 9 were HIV positive. Of the 964 presumptive TB cases, 879 gave consent for HIV testing and 33 (3.7%) turned out to be HIV positive. If only sputum positive cases had been screened for HIV, they would have missed 24 new HIV positive cases. The number needed to screen was 27 among presumptive TB cases and 18 among TB patients. The uptake of HIV testing (91%) and the diagnostic yield of 3.7% of HIV positive cases among the presumptive TB patients is quite high.[10]

Alladimohan et al conducted a study on provided initiated HIV testing counselling in incident tuberculosis cases reported that 610 adult patients registered under RNTCP who were referred to Integrated Counselling and Testing Centre for HIV testing, were prospectively studied. Of these, 458 patients (75%) (mean age: 38.6±16.3 year; 295 (64.4%) males) underwent HIV testing; HIV-co-infection was present in 21 (4.6%) patients. A significantly higher proportion of HIV co-infection was evident in PTB compared with EPTB (13/179 (7.2%) vs 8/279 (2.8%); respectively, P=0.038) and in previously treated patients compared to new patients (6/51 (11.8%) vs 15/407 (3.7%); respectively, P=0.009).[11]

Another study conducted by Shanta et al showed that 2918 eligible TB suspects examined for diagnostic sputum microscopy, out of 2918 TB suspects, 2465 (85%) consented to voluntary HIV counselling and testing. Among these, 246 (10%) were HIV-positive. Of the 246, 84 (34%) were newly diagnosed as HIV. HIV status not known previously.[12]

It is evident that the results of our study is in line other studies discussed above. Hence provider-initiated testing and counselling needs to be emphasized and promoted to achieve 100% screening.

CONCLUSION

As per PITC guidelines screening of presumptive cases of Tuberculosis yielded positive results in identifying additional cases of HIV positive patients.

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