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RESEARCH ARTICLE

CONTRIBUTION OF PROVIDER INITIATED TESTING AND COUNSELLING OF HIV IN DETECTING NEW HIV CASES UNDER REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME IN TELANGANA STATE, INDIA

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ABSTRACT

Background: According to TB India 2017 report, an estimated 0.11 million were HIV-positive among the 2.8 million people who developed TB in India in 2015 and nearly 37,000 deaths were among HIV-TB co-infected. In 2013, the concept of Provider Initiated Testing and Counselling for HIV has been introduced in India under RNTCP. **Objectives**: This study makes an attempt to find out the utility of PITC in identifying incremental detection of HIV positive cases during 2013-16. **Methods:** PITC is implemented since Jan 2013 in entire Telangana State, through Integrated Counselling and Testing Centres. Towards this good linkage between of ICTC and DMC services was ensured. Task shifting of HIV testing to RNTCP Lab Technicians was ensured wherever NACP LTs were not available. A desk review of both programmes was done for PITC screening. **Results:** A total of 157640 (97%) were tested for HIV from 163248 total registered TB patients under RNTCP and identified 9748 (6.2%) HIV positives. Of 826186 presumptive TB cases, 682147 (83%) were tested for HIV as part of PITC which resulted in identification of 38714 (5.8%). It is demonstrated that there is an additional yield of 29966 (3.1 times higher) HIV cases under RNTCP due to PITC. **Conclusions and Recommendations:** PITC must be implemented in all high HIV prevalent settings which can contribute to early detection of HIV cases and help in early initiation of Co-trimoxazole prevention therapy and antiretroviral therapy and thus reducing morbidity and mortality among PLHIV. This can in turn contribute to reduction in transmission of TB as the risk of getting TB is very high in PLHIV.

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INTRODUCTION

According to TB India 2017 report, an estimated 0.11 million (3.9%) were HIV-positive among the 2.8 million people who developed TB in India in 2015 and nearly 37,000 deaths were among HIV-TB co-infected (TB India, 2017). WHO recommends routine HIV testing to all TB patients, to all those with TB signs and symptoms, and to partners of known HIV-positive TB patients. According to the national framework for TB-HIV coordination in India, all the diagnosed TB cases must be provided with HIV testing (WHO, 2012). In 2013, the concept of PITC (Provider Initiated Testing and Counselling for HIV) has been introduced in the country. PITC presents an opportunity to ensure that HIV is more systematically diagnosed in health care facilities in order to facilitate patient access to needed HIV prevention, treatment, care and support services.

PITC is recommended by health care providers as a standard component of medical care to people attending health care facilities. In contrast, the Client-initiated HIV testing and counselling (Voluntary Counselling and Testing, or VCT) involves individuals actively seeking HIV testing and counselling at a facility that offers these services (World Health Organization, 2007). PITC may include both opt-in and opt-out approaches. An opt-out approach, in which individuals must specifically decline the HIV test if they do not want to be tested after receiving pre-test information, is more common compared to an opt-in approach, in which individuals must actively select testing. Regardless, provider-initiated testing and counselling must include pre- and post-test counselling about HIV/AIDS and an HIV test (Evidence, 2012). PITC is recommended in antenatal, childbirth and post- partum health services as these are some of the most important health

facilities for the implementation of PITC (Gruskin, 2008 and Hensen, 2012). The main justification for routine PITC is to increase the number of patients tested and thus the number of HIV-infected patients identified and linked to medical care and support services (Becker, 2009). Telangana is one of the high HIV prevalent southern states in India. Telangana State RNTCP (Revised National Tuberculosis Control Program) has been implementing the PITC since 2013 through state, district and field level coordination with NACP (National AIDS Control Programme). This study attempts to find out the utility value of PITC in identifying incremental detection of HIV positive cases during 2013-16 among presumptive TB clients.

MATERIALS AND METHODS

This retrospective analysis of utility of PITC was carried out for the data collected from all the 391 functional DMCs (Designated Microscopy Centres) and all ICTCs (Integrated Counselling and Testing Centres) in Telangana State for the period of 4 years i.e. 1st January 2013 to 31st December 2016. The NACP facilities included all SA-ICTCs (Standalone ICTCs) and FI-ICTCs (Facility Integrated ICTCs) across Telangana State. Towards achieving the successful implementation of PITC across the state, all the Lab Technicians (LTs) in RNTCP were trained on HIV testing and co-location of ICTC and DMC services was ensured as far as possible. Task shifting of HIV testing to RNTCP LTs was ensured wherever NACP LTs were co-location was not possible. As part of NACP, either in the routine HIV diagnostic procedure as well as during PITC, a serial rapid testing algorithm was used as per national guidelines. The first test used was Comb-Aids-*RS* supplied by NACO. If the Tri-DOT test was 'Negative', no further testing was done the patient was diagnosed as "Negative for HIV infection". If the result was 'Positive', then two rapid test kits were used simultaneously, i.e. Tri-DOT (Abbott Laboratories, India). and 'MERISCREEN HIV 1-2 WB' as second and third test kits respectively both supplied by NACO. If both the 2nd and 3rd kits resulted in 'Positive' reading, then the patient was "diagnosed as HIV Positive". If both the 2nd and 3rd test kits resulted in a 'Negative' reading, then the patient was labelled as "Negative for HIV Infection". In case there was any discrepancy between the results of 2nd and 3rd test kits, then the patient would be referred for a testing using "ELISA" (Enzyme Linked Immunosorbent Assay). The HIV test kits were procured by NACP through State AIDS Control Society (SACS) and delivered to all the ICTCs co-located with the DMCs through the District AIDS Prevention and Control Units (DAPCU). Wherever the co-location was not available, the test kits were delivered to the DMCs through the District Tuberculosis Control Units (DTC). Thus all 391 DMCs were ensured to have enough stock of HIV test kits as per the national protocol. Decision to implement the PITC strategy across entire state was taken during a coordination meeting between state RNTCP and SACS team on 20th December 2012. The necessary communication and training materials were designed towards capability building of all relevant health care providers and workers (HCPs and HCWs) as per NACP and RNTCP protocols and shared with all 391 DMCs and related ICTCs. The first combined training of ICTC and DMC staff was conducted in Warangal on 5th February 2013 in the academic hall of MGM Hospital, Warangal. All the relevant HCPs such as Medical Officers and Staff Nurses and HCWs such as DAPCU team, ICTC Counsellors, ICTC LTs and DMC LTS, Senior Treatment Supervisors (STS), Senior TB Laboratory Supervisors (STLS), TB Health Visitors (TBHV) etc. were trained about the importance of PITC and the standard operating procedures (SOPs) to be followed in the field. Both the ICTC LTs and DMC LTs were retrained on HIV tests. Pre and Post test counselling was provided by trained counsellors and medical officers for all the patients based on their HIV and TB status. Appropriate referrals were made to necessary treatment facilities and the data was captured in appropriate patient tracking forms as per RNTCP guidelines. Issues such as shared confidentiality, administering informed consent, when, how and whom to offer PITC, administering HIV testing, recording and reporting the entire process were covered to all the participants as part of the training.

Data collection and Analysis: Trained TB workers such as District DOTS Plus Supervisors (DPS) collected data from each of the DMCs and compiled data at district level and reported in uniform data collection formats to state on monthly basis. Data was analysed at state level by the trained program officers and the authors of this report on monthly basis. Data validation was also done on quarterly basis triangulating various reports submitted by the district TB control offices to the state comparing with the monthly data shared for specifically for PITC. Data analysis focused more on the outcomes of the intervention and the trends of uptake of HIV testing as well as detection of new HIV cases among the TB suspects. Since, the intervention is an add on activity of existing RNTCP strategy, we did not emphasise on analysing the demographic data, age specific or gender specific analysis etc.

Ethics: All patients were provided with informed consent regarding PITC. Data collection was done in routine program registers only and no names were entered into the electronic data bases towards analysing the trends. Thus special ethical approval was not necessary for the study. Data analysis was done using IBM SPSS version 20.0 package.

RESULTS

A total of 163248 TB patients were registered under RNTCP during 2013-16. Of them, 157640 (96.6%) were tested for HIV which resulted in identification of 9748 (6.2%) HIV positive registered TB (TB-HIV co-infection) cases (Table 1).

Table 1. HIV status among the registered TB cases under RNTCP during 2013-16

Year	Total registered TB Patients	# Tested for HIV	# HIV +ve	% Tested	% HIV +ve
2013	41827	39072	2763	93.4	7.1
2014	42661	41785	2593	97.9	6.2
2015	39385	38585	2045	98.0	5.3
2016	39375	38198	2347	97.0	6.1
Total	163248	157640	9748	96.6	6.2

Table 2. HIV status among PITC testing under RNTCP during 2013-16

Year	# Presumptive TB Cases	# Tested for HIV	# HIV +ve	% Tested	% HIV +ve
2013	191081	143127	9265	74.9	6.5
2014	221000	196494	13543	88.9	6.9
2015	209088	179749	10293	86.0	5.7
2016	205017	162777	6613	79.4	4.1
Total	826186	682147	39714	82.6	5.8

Table 3. Additional Yield of HIV cases among the PITC compared to registered TB cases

Year	No. HIV +ve diagnosed among Registered TB Cases	No. HIV +ve among PITC	Additional Yield (Quantity)	Additional Yield (Rate)
	(a)	(b)	(b-a)	(b-a)/a
2013	2763	9265	6502	2.4
2014	2593	13543	10950	4.2
2015	2045	10293	8248	4.0
2016	2347	6613	4266	1.8
Total	9748	39714	29966	3.1

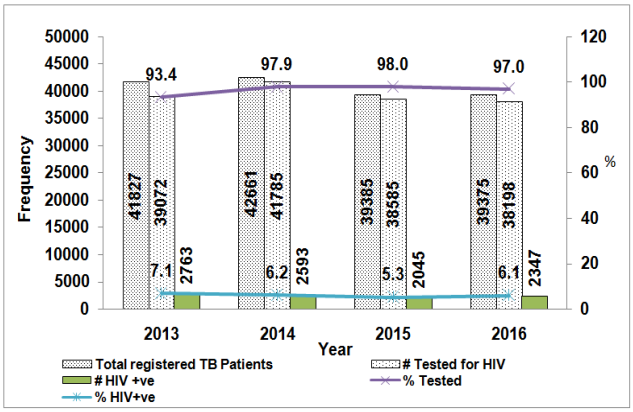

Figure 1. HIV testing and positivity among the registered TB Cases under RNTCP during 2013-15

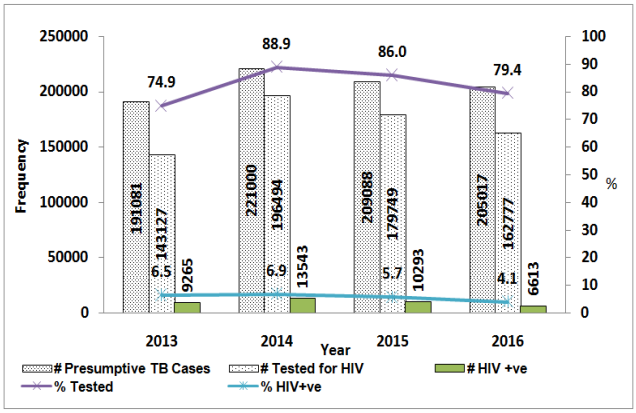

Figure 2. HIV testing and positivity among the presumptive TB cases (PITC) under RNTCP during 2013-16

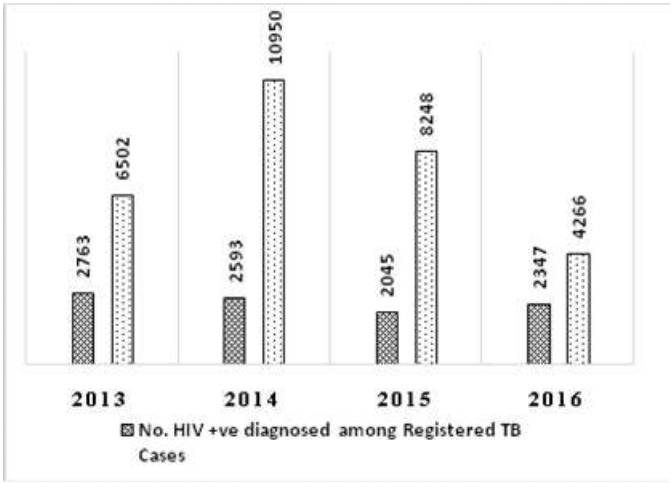

Figure 3. Year wise additional yield of HIV +ve cases due to PITC during 2013-16

A total of 826186 presumptive TB cases were provided with RNTCP services in 391 DMCs across the state during 2013-16. Of them, 682147 (82.6%) were subjected to HIV testing under PITC intervention which resulted in identification of 39714 (5.8%) of HIV positive cases. These also include the TB-HIV co-infection cases identified under regular HIV screening of registered TB cases (Table 2). The analysis demonstrated that there is an additional yield of 29966 (3.1 times) HIV cases in four years during 2013-16 due to implementation of PITC among registered TB cases in RNTCP (Table 3 and Figure 3). The graphical representation of year wise results of HIV testing during 2013-16 under routine program versus PITC are depicted in Figures 1 and 2.

DISCUSSION

Good linkages between TB Control Programme and HIV/AIDS Control Programme has been a major challenge in early detection of Tuberculosis among the PLHIV. On the other side, detection of HIV among potential TB patients is also seen as one of the important strategies for early detection of both TB and HIV among the hospital visitors especially in the HIV prevalent settings. In India, The RNTCP and NACP have developed a national strategic framework for collaborative approach towards achieving the early detection TB-HIV co-infected cases which in turn can support both the programmes in achieving their targets and goals. Field level linkages between Integrated Counselling and Testing Centres (ICTCs) and Designated Microscopy Centres (DMCs) has been the key strategy in achieving this collaboration. Until 2013, under this collaborative framework, all registered TB patients in RNTCP were mandated to get tested for HIV. However; in 2013, the policy was updated to provide affront testing for HIV to all those presumptive TB cases visiting a DMC under the newer strategy of PITC (provider Initiated Testing and Counselling) especially in the high HIV prevalent geographic locations in India. Our study demonstrated, by studying the impact of PITC over a period of 4 years, during 2013-16, that there is 3 times additional yield of diagnosing HIV among the presumptive TB cases compared to waiting for HIV detection only among the diagnosed and registered TB patients under RNTCP.

The inherent hurdles in achieving best results in PITC would be non-availability of staff to conduct HIV testing in all health care facilities where diagnosis of TB is available. This issue has been addressed by our study through task shifting amongst various health care providers by training the lab technicians at DMCs on HIV testing as per NACO guidelines. Other issues could be interruptions in supply or non-availability of HIV testing kits in all potential places for TB diagnosis. Collocated ICTC and DMCs would be ideal places for better coordination between NACO and RNTCP; however this situation might not be possible in all geographic locations. Hence, developing linkages between field level NACP and RNTCP staff and administration is critical in achieving best results. A study from South Africa demonstrated in a controlled trial on PITC that the detection of new HIV cases increases substantially but the limitations to linkages for HIV care services after HIV diagnosis through PITC are very critical in providing appropriate HIV care (Leon, 2014). A study from Zambia demonstrated that PITC will not necessarily help early diagnosis of HIV especially in the high HIV prevalent settings as, in their study, large number of individuals with late stage HIV disease were incidentally diagnosed through PITC in

outpatient settings. But the study concluded that PITC in such setting did not facilitate more timely diagnosis and referral to care but rather acted as a ''safety net'' for individuals who were unwilling or unable to seek testing independently (Stephanie, 2012). In India few studies have demonstrated that the PITC can be effectively implemented under special conditions or under programmatic settings. These studies have also demonstrated the feasibility of PITC in Indian settings (Vijay, 2009; Achanta, 2012; Thomas, 2009 and Naik, 2012), as well as in other countries (Srikantiah, 2007; Odhiambo, 2008 and Munthali, 2006). Caitlin E. Kennedy et. al. in a systematic review observed that HIV testing uptake increased after PITC, Condom use also increased following PITC in most studies; nevirapine uptake and other outcomes were mixed. The study recommended that PITC should continue to be expanded and rigorously evaluated across settings and outcomes (Caitlin, 2014). Hensen *et al*. in a review concluded that the adoption of PITC within ANC can facilitate progress towards universal voluntary testing of pregnant women and suggested that PITC is necessary to increase the coverage of PMTCT services and facilitate access to treatment and prevention interventions (Hensen, 2012).

Limitations: One of the key limitations of our study is inability to collect demographic characteristics of all the patients as the data was collected as part of routine program and not as a special study in comprehensive academic research settings.

Conclusions: Our study concludes that PITC must become part of the strategy in AIDS control programme besides the TB control programme especially in the high HIV prevalent areas so that early detection of HIV cases can be achieved which otherwise gets delayed in diagnosis if waited till the diagnosis of TB among those presumptive TB cases. It is also suggested that linkages to follow-up care after diagnosis of HIV through PITC is critical in achieving the targets for appropriate HIV and TB care. PITC can in turn contribution to reduction in transmission of TB as the risk of getting TB is very high in PLHIV.

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