



Diagnostic role of gastric aspiration in sputum negative pulmonary tuberculosis among adults



Introduction:

National Strategic Plan (2017-25), advocates for early Identification of presumptive TB cases, at the first point of care, be it private or public sector, and prompt diagnosis using highly sensitive diagnostic tests to provide universal access to quality TB diagnosis including drug resistant TB in the country. Gastric aspiration is a technique which has been employed in paediatric population for suspected cases of primary complex. Our study aim is to find the Diagnostic role of gastric aspiration in sputum negative pulmonary tuberculosis among adults. NTEP recommends microbiological confirmation of sputum negative cases of pulmonary tuberculosis suspects by CBNAAT [TOG 2016].

AIM

To determine whether TB diagnosis by examination of Gastric Aspirate by CBNAAT in sputum negative pulmonary tuberculosis among adults can be devised as strategy under NTEP

Materials and Methods

Retrospective study was conducted at the Bhavnagar Medical college Hospital for a period of one year. Study subjects were classified into three groups.

1. Those who have sputum production with radiologically active lesion but sputum smear negative for AFB.
2. Those patients who have neurological deficits (meningitis/CVA etc) and very sick, who cannot bring out sputum.
3. Those who have a radiological significant lesion without sputum production.

Exclusion criteria 1. Children 2. Not willing to give consent 3. Nose, mouth deformities

Results & Discussion:

Table 1: Category wise MTB detection

Category		All Presumptive	MTB detected by CBNAAT	p value (Pearson Chi square applied)
Sex	F	35	15	0.2
	M	71	22	
Age	13-24	15	8	0.6
	25-60	64	20	
	>60	27	9	
H/O ATT	New	28	79	0.8
	PT	9	27	
Non-Productive	Sputum Negative	69	18	0.03
	Symptom other than sputum	9	4	
	Morbid Condition	28	15	
Duration Presumptive duration	1-14	71	20	0.03
	> 14 days	35	17	

Commonest symptom was Cough 54% followed by fever 21% among Presumptives. 17 patients have symptom duration >14 days. 15 cases were detected within 7 days of onset of symptoms-early diagnosis.

As the duration of symptom increases (late access to symptom), MTB detection decreases ($p < 0.05$). There was no statistical difference between positivity whether patient had taken ATT previously or not ($p = 0.8$).

Table 2: CBNAAT positivity among new and PT cases

CBNAAT Positivity	RR	RS	Grand Total	
New	1 (3.5%)	27 (96.5%)	28	<p>Total 37 cases detected by molecular testing of Gastric aspirate, out of which 76% were new cases. One Rif resistance (DRTB) case was detected in New (3.5%) while one Rif resistance (DRTB) case was detected in PT (11%) which is in more alignment with NDRS survey results (New-2 to 3%, PT-10 to 13%) [PMDT guidelines 2019]. These RR cases could have been missed if efforts were not made to aspirate gastric lavage. Absence of this intervention would have led to not only underdiagnosis of microbiologically confirmed TB among community, but also spread of DRTB among community.</p> <p>Gastric Aspirate testing by smear and CBNAAT yielded 16% and 35% positivity respectively. Microbiological confirmation should always be done to ensure correct diagnosis, all effort must be made to get appropriate clinical specimens from affected site [PMDT guidelines 2019].</p> <p>Enhance the use of novel and improved strategies to enable diagnosis of latent as well as active TB (including DR TB) [NSP 2020-2025]</p>
PT	1 (11%)	8 (89%)	9	
Grand Total	2 (5.4%)	35 (94.6%)	37	

Conclusion:

Gastric aspirate for AFB smear and CBNAAT can be used as a tool in diagnosis of pulmonary in patients who cannot submit sputum and patients who are smear negative as suggested by the study. At PHC and CHC level where sophisticated techniques like bronchoscopy are not available, The patient presenting with no sputum under suspicion of tuberculosis, gastric aspirate can be performed as a diagnostic technique which is a simple outpatient procedure. With expansion of molecular diagnosis in India and availability of NAAT technology at district and subdistrict level this intervention be an innovative policy for diagnosis of both drug sensitive TB and Drug Resistant TB. The procedure can be performed by trained health care professional like staff nurses, unlike bronchoscopy which needs to be performed by trained bronchoscopist with constant monitoring.