Incidenceof Tuberculosis in Unidentified Dead Bodies amongst Autopsy Conducted at Government Stanley Medical College and Hospital, Chennai

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Abstract

A autopsy based prospective study on incidence of tuberculosis was conducted at government Stanley medical college for two year from June 2016 –June 2018in that 425 cases of unidentified bodies were subjected for postmortem in that 376 cases were taken for the present study these based on exclusion criteria during autopsy in that 201 cases were male and 175 cases were female, in all the cases sterile swabs were taken from intra bronchial region and directly from caseous necrosed sites and lung tissues from pathological sites are subjected for histopathological examination during autopsy and sterile swabs were subjected for acid fast staining and culture by lowenstien Jensen medium medium among the376 cases studied 52 cases had pulmonary tuberculosis and 2 cases had milliary and intestinal tuberculosis respectively.

Key words *– unidentified bodies, pulmonary tuberculosis, Milliary tuberculosis and intestinal tuberculosis.*

Introduction

"Unidentified body" refers to a person who dies in a public place or hospital, which has not been claimed by any near relatives or personal friends within such time period as may be prescribed[1] .

Tamil nadu is India's third most populous state and Chennai stands for fifth-most populous urban agglomeration. With a huge migrant population who came down in search of job opportunities or take up any menial works to eke out a living and 10% of chennai population lives in slumsfurther the migrants who are illiterates and do not possess any identification proofs and upon death either natural or unnatural, establishing their identity or even informing their relatives becomes very difficult.

At least 10 bodies are recovered every day in Tamil Nadu, most of which remain unidentified and unclaimed[2]. The latest National Crime Records Bureau statistics show the state has the second highest number of unidentified bodies at 3,739, after Maharashtra with 6,185 corpses.As per the same report, 2,795 bodies were recovered around the State in 2010, thus showing a more-than-significant rise in body count of 60 per cent. Ironically[3].

India is the country with the highest burden of TB. The World Health Organisation (WHO) TB statistics for India for 2016 give an estimated incidence figure of 2.79 million cases of TB for India. The TB incidence is the number of new cases of active TB disease during a certain time period[1].

Tuberculosis (TB) remains a major respiratory cause ofmorbidity and mortality worldwide and has been identifiedas a 'global emergency' by the WHO. One third of theworld's current population has been infected with M.tuberculosis, and new infections occur at a rate of one persecond[4]. Latent infection is however, most common andabout 10% of it eventually progresses to active disease, which, if left untreated, kills more than half of its victims[5].

It is estimated that about 40% of the Indian population is infected with TB bacteria, the vast majority of whom have latent TB rather than TB disease.

In2004, mortality and morbidity statistics included 14.6 millionchronic active cases, 8.9 million new

cases, and 1.6 milliondeaths, mostly in developing countries. The nationalaverage of tuberculosis per 100,000 populations in Indiawas 168 in the year 2006. Worldwide problem status ispresented in table 17. India has the largest number ofinfections, with over 1.8 million reported cases8.In March 2017 the Government of India (GoI) announced that the new aim with regard to TB in India was the elimination of TB by 2025 by National Strategic Plan 2017 – 2025 [6].

India also has more than a million "missing" cases every year that are not notified and most remain either undiagnosed or unaccountably and inadequately diagnosed and treated in the private sector[7].

Reasons for increasing incidence of this treatable disease in unidentified cases were due to lack of access to health care, ineffective preventive and control programmes and comorbid condition like HIV infection, drug abuse and alcoholism, etc[1].

Tuberculous elimination program was started by government of india , the present study was took up to highlight the missed population in the community who are suffering from severe form of this disease and left untreated and cause death due to complication of tuberculosis .

Materials and Method

Source of Data

Unidentified cases subjected for medico legal autopsy at Department of Forensic Medicine, government stanley Medical College and Hospital, chennai.

Method of Collection of samples

A two year prospective study on unidentified dead bodies were started from Jun 2016 in that unidentified cases without any external or internal injury were taken up for study in all cases two sterile swabs were taken from intra bronchial region from both

the lungs (image 1a and 1b) in certain cases directly from the caseous necrosed sites (image 2a and b)for acid fast staining and culture by Lowenstein Jensen medium and lung tissues from pathological sites were subjected for histopathological examination.

Exclusion Criteria

Unidentified bodies with external and internal injuries due to road traffic accident , railway injuries, assaults ,poisoning cases, decomposed dead bodies and abandoned new born babies were excluded from the study group.

Results and Discussion

Table No. 1: Total Number of unidentified cases during study period.

Total No of Autopsies during study period	No of Unidentified bodies studied	Percentage
3516	376	10.08%

Of the 3516 cases subjected for medico legal autopsy, 376 were unidentified (10.08%). This increased number of unidentified cases is because the department of forensic medicine caters to the population of north chennai, which has its fair share of slums and as well as migrant population working in market places, also the proximity of railway station with constant influx of passengers.

In a similar study conducted by Lucinda et al in Pretoria (South Africa), unidentified bodies constituted for about 7-10 % of total autopsies[8].

In another study conducted by Kumar S et al in Lucknow, unidentified bodies constituted for about 15 % of total autopsies[9].

Table No. 2: Sex distribution among unidentified cases.

Sex	Total no. of cases
Male	201 (53.45%)
Female	175 (46.54%)
Total	376 (100%)

Among 140 unidentified cases, 201 (53.45%) were males and 175 (46.54%) were females. Males being more as commonly the males constitute the crux of migrant population who came in search of job opportunities.

In a study conducted by Kumar S et al in Lucknow on unidentified bodies, majority of cases were males (2218, 69.99%) as compared to females (951, 30.01%) [9].

Table No. 3: Age group in cases studied for incidence of tuberculosis.

Age group	No of unidentified cases	percentage
0 – 20 yr	4	1.06%
21 – 40 yr	92	24.4%
41 – 60 yr	159	42.2%
61 – 80 yr	121	32.1%

In our study, most of the unidentified cases (42.2%) were in the age group of 41 to 60 years, 32.1% were in the age group of 61-80yrs, 24.4% were in the age group of 21 – 40yrs and 1.06% were in the age group of 0 – 20yrs.

Due to the diminished family ties, abandoning of parents by their children in the modern society, illiteracy, and low socio economic status were the most common reasons for higher incidence in the age group 41 to 60 years.

In a similar study conducted by Kumar S et al in Lucknow on unidentified bodies, 47.24% were in the age group of 41-60 years. 8.36% were in the age group of 0 – 20yrs. Observations were similar to those in our study[9].

Table no 4: Types of tuberculosis in unidentified cases.

Type of tuberculosis	No of cases	Percentage
Pulmonary tuberculosis	52	96.2%
Milliary tuberculosis	01	1.8%
Intestinal tuberculosis	01	1.8%

Among 376 unidentified cases in that 52 cases showed presence of mycobacterium tuberculosis through culture and by acid fast staining and 2 cases showed extra pulmonary tuberculosis by histopathological examination.

Of 54cases of tuberculosis, most (n=52, 96.2%) cases were presented as pulmonary tuberculosis(image 3). 1 (1.8%) cases were presented as Milliary tuberculosis and 1(1.8%) case were presented as Intestinal tuberculosis(image 4a and 4b).

And the pulmonary tuberculosis were further classified based on number of acid fast bacilli seen per field. In 34 cases 4+ (>9 bacilli /field) is seendue to lack of access to health care, ineffective preventive and control programmes and comorbid condition like HIV infection, drug abuse and alcoholism, 13 cases 3+ (1-9 bacilli /field) seen, 02 cases 2+ (1-9 bacilli /10 fields) seen, 02 cases 1+ (1-9 bacilli /100 fields) seen, 01 case +/- (1-2 bacilli /300 fields) is seen (image 5a and 5b).

In a retrospective study conducted by Buyuk Y et al in Istanbul on unidentified bodies, (n=138, 60.2%) cases were died naturally. Remaining (n=91, 39.4%) cases were died unnaturally. Approximately 1/3 of natural

Image 1 A and 1B shows sterile swabs and swabs taken from intra broncial region

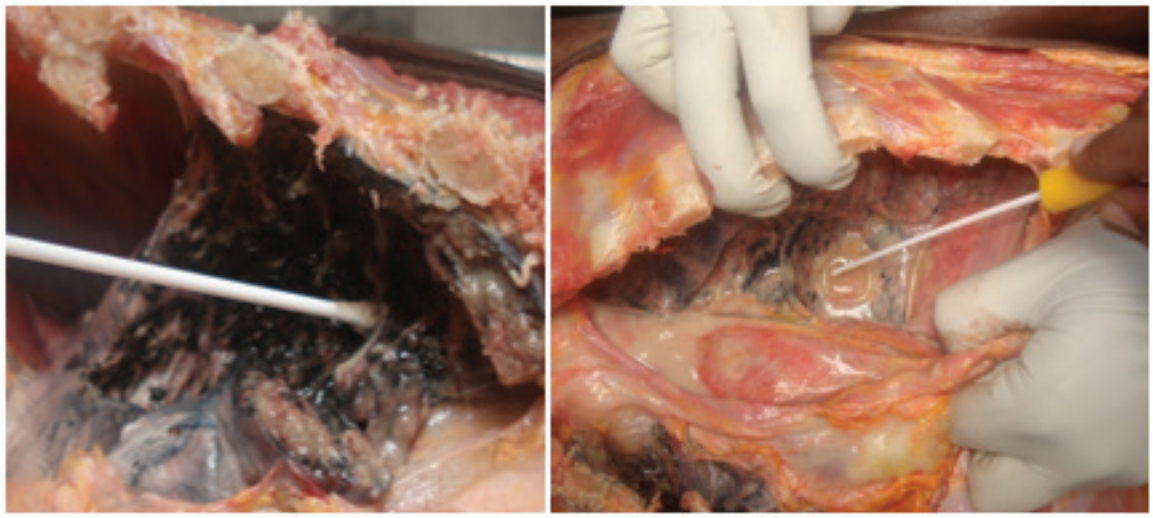

Image 2A and 2B sterile swab taken directly from caseous necrosed site

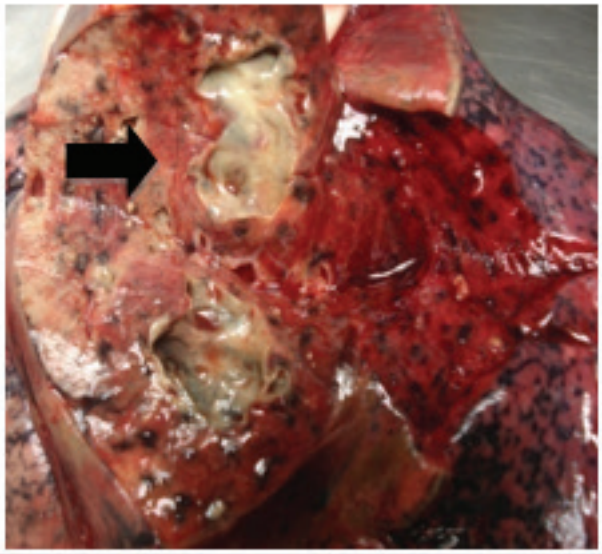

Image 3 Shows Tuberculous cavity in the apex of basal lobe

death cases were revealed evidence of pulmonary tuberculosis, but only in 32 cases tuberculosis was primary cause of death[10].

Conclusion

"Study of incidence of tuberculosis in unidentified dead bodies amongst Autopsies" conducted at Government stanley Medical College and hospital, chennai, between jun 2016 to jun 2018, the results of the study have been concluded as follows.

- Of the 3516 cases subjected for medico legal autopsy, 376 unidentified cases were full filled the criteria (10.98%).
- 201 (53.4%) were males, 175 (46.5%) were females.
- 159 (42.2%) of the cases were in the age group of 41 to 60 years.
- Of 376 cases 52 cases had pulmonary tuberculosis

and 2 cases had miliary and intestinal tuberculosis respectively

- Pulmonary tuberculosis was most commonly seen and showed (4+ / > 9 bacilli per field) smear classification in most of the cases due to lack of treatment.
- In 13 cases 3+ (1-9 bacilli /field) seen, 02 cases 2+ (1-9 bacilli /10 fields) seen, 02 cases 1+ (1-9 bacilli /100 fields) seen, 01 case +/- (1-2 bacilli /300 fields) is seen.
- Based on the above results it indicates
- the present study highlights the missed population in the community who are suffering from severe form of this disease and and remains latent reservoir for constant source of infection in the community.
- Most of the cases were left untreated and cause death due to complication of tuberculosis .
- Identifying and treating these community will only leads to eradication of tuberculosis in india by 2020.

Ethical Clearance – Taken from medical education committee of Goveremnt Stanley medical college and hospital

Source of Funding – Self

Conflict of Interest - Nil

References

1. Babu Y.P, Joseph N. Mortality among homeless and unclaimed bodies in Mangalore city - An insight. Journal of Forensic and Legal Medicine 2012; 19 : 321-323.
2. Unidentified bodies in Tamil Nadu [Internet] 2015 Dec 5 [updated 2016 jan 1; cited 2016 may 8]. Available from: https://timesofindia.indiatimes.com/...unidentified-bodies...Tamil-Nadu.../20597045
3. Unidentified bodies in Tamil Nadu [Internet] 2017 jan 5 [updated 2017; cited 2017 dec 5]. Available from: times o*epaperbeta.timesofindia.com/Article.aspx?eid=31807...10-unidentified-bodies*
4. *W*orld Health Organization(WHO) Tuberculosis Fact sheet - Global and regional incidence [Internet] 2016 Mar 7 [updated 2017; cited 2017 jan 5]. Available from: https:// www. who.int /tb / publications/factsheets/en/
5. Global tuberculosis control: surveillance, planning, financing. WHO report 2017 [Internet] 2017 may 5 [updated 2017; cited 2017 jul 5]. Available from: https:// apps. who.int /iris /handle /10665 /43629
6. TB Statistics India - National, treatment outcome, state [Internet] 2017 may 5 [updated 2018; cited 2018 jul 5]. Available from: https://www.tbfacts.org/tb-statistics-india/
7. TB in India - Elimination, Private Care, TB burden, NSPs [Internet] 2017 may 5 [updated 2018; cited 2018 jul 5]. Available from: https://www.tbfacts.org/tb-india/
8. Evert Lucinda, 2011, Unidentified Bodies in Forensic Pathology Practice in South Africa; Magister scientiae Thesis, University of Pretoria, South Africa
9. Kumar S, Verma AK, Ali W.Homeless and unclaimed persons' deaths in north India (Jan 2008-Nov2012): A retrospective study.Med Sci Law. 2014 Feb 17.
10. Buyuk Y, Uzun I. Homeless deaths in Istanbul, Turkey. Journal of Forensic and Legal Medicine 2008; 15: 318–321.