Pulmonary Medicine

SURVEILLANCE OF TUBERCULOSIS IN A TERTIARY CARE INDIAN TEACHING HOSPITAL

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ABSTRACT **Aim:** To find out the incidence of tuberculosis among the the patients attending in a tertiary care hospital for a period of 3 years, in eastern Odisha.
Methods: We analyzed all reported active tuberculosis cases in a 3-year period, especially among the patients attending at OPD of pulmonary medicine, according to the diagnosis Reports of IMS and SUM Hospital, Bhubaneswar.
Results: Among the 2000 patients in OPD of pulmonary medicine department of IMS and SUM Hospital, 524 patients were diagnosed as TB. The incidence of tuberculosis was little more in males (284) in comparison to females (240). Half of the total patients presented symptoms of breathlessness. Others presented with chest pain and haemoptysis, fever and generalized weakness.
Conclusion: Still now the incident of tuberculosis at the department of pulmonary medicine increases day by day.

KEYWORDS : Pulmonary Tuberculosis, incidence, sputum, radiological extent, lung zones

Tuberculosis (TB) remains a major public health problem predominantly affecting low- and middle-income countries. It kills 1.5 million people every year [1]. It is a persistent health threat in high-income countries too, especially among immigrants and the poorest and most vulnerable parts of the population [2–7]. With a vision to progress towards finally eliminating this ancient scourge, the World Health Organization (WHO) has developed a global TB strategy with a perspective beyond 2015 [8]. The global strategy includes milestones towards a long-term vision to eliminate TB as a public health problem (defined as less than one case of TB per million population). It includes a goal to reduce global TB incidence from >1000 cases per million population today to <100 cases per million by 2035 [9]. In this study we have documented all the data of tuberculosis patients diagnosed in our department.

Materials and Methods
Study population Medical records and chest radiographs of active pulmonary TB patients, who visited the Department of pulmonary medicine, IMS and SUM Hospital in the Elderly during the period January 2014 to December 2015, were reviewed. We included only pulmonary TB cases and excluded all other forms of TB, like hilar and/or mediastinal lymphadenopathy, TB pleurisy, and miliary TB to allow better data comparisons. Cases of pulmonary TB with coexistent extrapulmonary TB were also excluded from the study population. During the study period, 524 cases of active pulmonary TB were treated using anti-TB medication. All the demographic and clinical data were maintained in excel sheet and analyzed with SPSS software.

Result: In last 3 years 2000 suspected cases of TB were observed and among them 524 cases are diagnosed with TB, 284 were male and rest 240 were female. In t test it was revealed that there was no any statistical significant on gender specific of tuberculosis as P=0.68, so it is equal distributed in our study group (Table 1). Patients were complaining with different symptom during the study period, cough cases were found 78%, chest pain 16% and like that other cases are mentioned in the table 2. The disease duration of the patients were documented and it was revealed >3 months disease were 30% (Table 3). All the habits of the patients were documented and it was revealed that 92% were smoking, alcoholic 20%, chewing tobacco 80% and other were 20% (Table 4). Both pulmonary and extra pulmonary tuberculosis were found in our study (Table 5). All sputum of TB patients were examined for ZN stain and revealed that 385 were

positive and rest was 138 negative (Table 6). All the positive patients were screened in radiological (Fig 1) and it was revealed that 85.29% were advance and types of the lesions and Lung zones were also documented (Table 7-9). All the TB patients were screened for other disease and it was found that 24% wer diabetes mellitus, hypertension 24%, COPD 26%, CRF 26%, CRF 26% and rest were asthma 6% (Table 10).
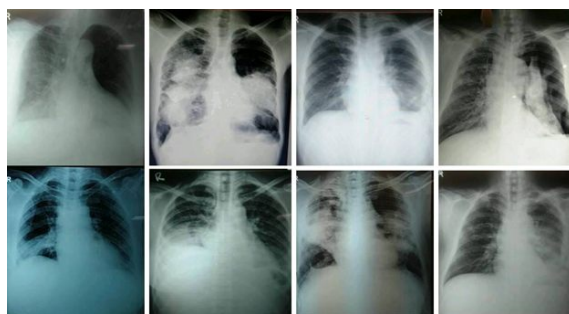

Fig.1 X-ray of the patients

Table 1. Incidence of TB in different age group with respect to sex.

Sex/age	Male	Female	Total
<10year	12	32	44
21-30	45	42	87
31-40	64	29	93
41-50	42	53	95
51-60	72	69	141
61-70	30	11	41
71-80	9	2	11
81-90	7	1	8
>91	3	1	4
Total	284	240	524

Table 2. Presenting complaints

Sl. No	Chief Complaint	Number of patients	%
1.	Cough	408	78
2.	Fever	419	80
3.	Chest pain	83	16

4.	Haemoptysis	94	18
5.	Breathlessness	262	50
1.	Loss of weight and appetite	366	70

Table 3. Duration of symptoms

	No of patients	%
<1 month	220	42
1-3 months	146	28
>3 months	157	30
Total	524	100

Table 4. Habits of the patients

Habits	No of patients	%
Smoking	484	92
Alcoholic	104	20
Chewing Tobacco	419	80
All the above habits	104	20
Total	419	80

Table 5. Type of case according to pulmonary and extra pulmonary tuberculosis.

Site of Disease	No. of patients	%
Pulmonary	314	60
Extra-Pulmonary	167	32
Pulmonary + Extra Pulmonary	41	8
Total	524	100

Table 6. Incidence of sputum positivity in pulmonary cases

Sputum status	No. of patients	%
POS	385	73.53
NEG	138	26.47
Total	524	100

Table 7. Radiological extent of disease

Radiological extent	No of the patients	%
Minimal	30.8112	5.88
Moderate	46.2168	8.82
Advanced	446.9196	85.29
Total	524	100

Table 8. Type of radiological shadows

Sl. No	Type of lesion	No. of patients	%
1.	Consolidation	104	20
2.	Cavity	20	4
3.	Infiltration	241	46
4.	Fibrosis	41	8
5.	Military	31	6
6.	Pneumothorax	10	2
7.	PLEF	62	12
8.	hydropneumothorax	10	2
	Total	524	100

Table 9. Lung zones affected in chest radiograph

Radiological status	No of patients	%
Upper zone	30	5.88
U & M Zones	123	23.59
M & L zones	139	26.47
Lower zone	46	8.82
All zones	184	35.29
Total	524	100

Table 10. Incidence of associated Disease/condition

Sl. No	Type of lesion	No. of patients	%
1	Diabetes mellitus	125	24
1.	(a) Known case		
1.	(b) Diagnosed on admission		
2	Hypertension	125	24
3	COPD	136	26
4	CRF	136	26
5	Br. Asthma	31	6
6	Total	293	56

Discussion:

Tuberculosis remains prominent in international statistics of ill health mainly because it kills young adults. More than 80% of the burden of tuberculosis, as measured in terms of disability-adjusted life years (DALYs) lost, is due to premature death rather than illness. About 1•7 million people died of tuberculosis in 2004, including 264 000 patients who were co-infected with HIV.[10,11] Because few countries with high burdens of tuberculosis compile reliable statistics on the cause of death, the global and regional trends in tuberculosis deaths are uncertain. However, the findings of one assessment based on modeling indicate that death rates from tuberculosis could have been falling since around year 2000, after rising during the 1990s.[10,12] Moving towards TB elimination requires commitment and political leadership from national and international stakeholders. First of all, governance, leadership, funding and accountability arrangements will require national and local government to take a lead role. The involvement of a wider partnership may help sway political and public health opinion to support the development of an evidence-based national elimination plan that is resourced, implemented and monitored. Ideally, the national effort should be supported by a multidisciplinary and multiprofessional group that includes professional societies, civil society organisations, private sector health organisations and all relevant government departments that have a role in TB elimination, including those responsible for medical research, public health, healthcare, housing, justice, immigration and social welfare. Professional societies may be able to advise on approaches that may be used to overcome potential implementation difficulties. As the burden of TB remains strongly determined by social factors, inevitably TB control must also include social interventions that require broad-based support to maximise impact. Health professionals need effective partnerships with social services and with local community groups able to provide an advocacy platform for patients. The trust and support of affected communities is the key to early diagnosis, engagement with treatment services, and sustained commitment to address the wider social determinants of TB.

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