

A Review of Tuberculosis management from five private clinics in Multan

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MAM SSAN conceived data, MAM MWT TK HGM SJA drafted the study, MAM HGM SJA collected data, MAM SSAN SJA did statistical analysis and data interpretation, MAM TK SJA critical review manuscript, All approved final of version manuscript to be publish.

Declaration of conflicting interests

The Authors declares that there is no conflict of interest.

ABSTRACT

Background: Tuberculosis (TB) is a major concern worldwide and the world's second most common cause of death from infectious disease after HIV/AIDS and poses a serious threat to public health throughout the world. With emergence of its resistant strains, clinicians must be familiar with the clinical presentation of this deadly infection.

Objective: To review the management of tuberculosis in private clinics/Hospitals in Multan, city of south Punjab to observe the contribution of private sector in the management of this commonest diseases especially in this part of Punjab as many patients of TB are still being treated privately.

Material and methods: This study was carried out from December 2015 to January 2017. A total of 05 leading private clinics were included after informed consent. All newly diagnosed tuberculosis patients were included in the study and those with doubtful history, defaulted as well as treated previously for TB were excluded. 200 patients fulfilled the above inclusion criteria and were included in the study. Baseline demographic data, co morbidities, treatment outcome and default rate were enter into special designed proforma and was analyzed.

Results: Age of the study population ranged from 16-70 years, 61% were in the age range of 30- 40 years or younger and 57% were females. Pulmonary disease diagnosed in 80% patients and extra-pulmonary tuberculosis in 20% patients (mainly pleural effusion). 31 patients had side effects from anti-tuberculous drugs. Hepatitis/deranged LFT's were the commonest side effect which was observed in 15 patients. Other side effects were mild skin irritation (5 cases), skin rashes (03) gastrointestinal disturbance (06) and joint pains (02). 30 patients were diabetics (16 male and 14 female). Diabetes was associated with 21 pulmonary tuberculosis cases and 9 cases of extra-pulmonary tuberculosis. 27 were using insulin and 03 were on oral hypoglycemic agents among 40 cases of extra pulmonary disease, 25 were having unilateral pleural effusion, 02 bilateral pleural effusion, 09 were diagnosed cervical TB lymphadenitis, 01 empyema and 03 with spinal TB. Out of all pulmonary cases that were treated, sputum smear examination was positive only in 60% of cases rest 40% were smear negative and were diagnosed on clinical grounds. The overall cure rate was 52% The mortality was 2% whereas default rate was 27%. Out of these 05 clinics, only 01 clinic was obtaining the opinion from a pulmonologist, 04 that of a medical specialist and/or run by the GPs. None of the clinics were using DOTS strategy

Conclusion: For the best management of TB DOTS strategies must be implemented in private sector in an attempt to reduce the default rate and achieve successful outcome according to WHO target. Private setup should be encouraged to maintain and follow national TB guidelines for the treatment of TB patients for timely treatment and good outcomes.

Key words: Tuberculosis; Private sector; Outcome

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Introduction

TB is almost a birth companion of the mankind, its history is almost as old as that of the mankind itself so much so that mycobacterium TB has been isolated from the ancient Egyptian mummies.^{1,2} WHO declared TB a global emergency in 1983 and continuously stressing upon policies to control the disease all over the world especially the developing world. Pakistan is ranked 6th most burdened country for tuberculosis in the world¹ and fourth in the eastern mediterranean region.¹ National TB control programme in collaboration with WHO has implemented DOTS strategy about 15 years now which was a pointer to its sincere efforts towards TB control in Pakistan.^{1,2,3}

Directly observed short course (DOTS) was introduced in our country in 1995 and DOTS coverage for 100% of publically treated population was achieved in 2005.² The access of DOTS was not available for private patients as quite a considerable number of patients prefer to get treated through private sector due to their confidence on family physicians and pulmonologists as well as the quality of anti tuberculosis drugs available privately compared to those available publically

Majority of physicians and general practitioners continue to treat tuberculosis outside the DOTS programme and anti-tuberculous drugs are available over the counter, and there is no trend of keeping a record of these patients in private clinics as a result a lot of discrepancies occur in the treatment of these patients from presentation to outcome.

Recently, there have been efforts to involve private sector in the treatment of tuberculosis under private public partnership, but this is only at a small scale. There are only a few studies available previously but these are more than 03 years old except one indicating the treatment of TB in private sector and noting the default rate of as high as 28%. The paucity of such studies in the country and availability of none in south Punjab has encouraged the authors to conduct the present study.

Objective

Objective of the present study was to review the presentation, treatment and outcome of tuberculosis

in private sector in Multan city of south Punjab.

Material And Methods

This was a descriptive prospective study, carried out from December 2015 to January 2017 at five private clinics/Hospitals of Multan located within 04 km of Nishtar Hospital Multan. All new patients with tuberculosis who were registered according to the inclusion criteria at the outpatient clinics during the study period were included in the study. All the demographic data, co morbidities like DM, chronic liver disease etc and treatment outcome like treatment completed, cured, default or death were recorded as per WHO definitions.

Sampling Technique: Non probability consecutive sampling.

Inclusion Criteria : All newly diagnosed patients presenting to OPD of these clinics

Exclusion Criteria : All re-treatment cases and those not willing to give informed consent were excluded.

All the patients that have completed the treatment during the study period were analysed. Information gathered from the register was age, gender, type of TB (Pulmonary or Extra-Pulmonary), DM, HIV status (if obtained), treatment outcome, default and death (if any)

Data Analysis: After incorporating data, descriptive statistics were applied, frequencies and percentages were calculated by applying SPSS version 17.

Results

Age of patients ranged from 16-70 years, 62% of patient were 40 years old or younger and 58.5% were female (Table-1). Pulmonary disease diagnosed in (80%) patients and extra-pulmonary tuberculosis in (20%) patients (Table-2). Thirty one patients had side effects from anti-tuberculous drugs.

Hepatitis/disturbed LFT's was the commonest side effect which was observed in 15 patients. Other side effects were skin rashes, gastrointestinal disturbance and joint pains. 146 (73%) cases were treated with fixed dose combination treatment. Diabetes mellitus was present in 26 patients (16 male and 10 female).

Diabetes was with 21 cases of pulmonary tuberculosis and 9 cases of extra-pulmonary tuberculosis. All patients came for treatment from all parts of Multan and few of them came from outside the city(15).out of total pulmonary TB patients, only (60%) were diagnosed on sputum smear microscopy rest 40% were diagnosed on clinical grounds (smear negative) The mortality was 04 (2%) but default rate was around 28%. One clinic was using gene expert as a diagnostic

tool but it was not performed in all the cases , it was done in total 14 cases in that clinic , MTB was detected in 07 cases in total out of which 06 were smear positive and 01 smear negative. RIF resistance was positive in 01 case which was referred to the department of Pulmonology Nishtar medical university hospital Multan. Over all 104 (52%) were cured ,40 (20%)completed the treatment, 54 (27%) lost to follow up and there were 02 (1%) deaths.

Table 1: Age and sex distribution (n=200)

Age (years)	Male	Female	%age
15-20	17	26	23.0
21-30	18	24.	21
31-40	13	20	16.5
41-50	12	13	12.5
51-60	08	12	10.0
61-70	10	12	11
> 70	05	10	07.5
Total	83 (41.5%)	117 (58.5%)	

Table 2: Type of tuberculosis (n=200)

Type	No. of patients	%age
Pulmonary TB	160	80.0
Smear positive	128	80
Smear negative	32	20
Extra pulmonary TB	40	20
Pleural effusion	27	13.5
Lymphadenitis	09	03.5
Empyema necessitance	01	0.5
Spinal TB	03	1.5

Table 3: Diabetics with TB

	PTB	EPTB	Total
Female	08	06	14
Male	13	03	16
Total	21	09	30

Table 4: Outcome

Outcome	No	Percentage
Cured	104	52%
Lost to follow up	54	27%
Treatment completed	40	20%
Death	02	1%
Total	200	100%

Discussion

In present study 62% of patients are 40 years old or younger and 58.5% are women. Age distribution is in line with previous studies but incidence of tuberculosis in women is much higher than previously reported in our country^{3,4}, however one Ethiopian study shows more number of females than males²³ showing that in this part of the world as well as in our country more females are coming for diagnosis and treatment.

In the present study the incidence of extra-pulmonary tuberculosis is 20% which is in concordance to that reported by world health organization (17%).⁵ The Two previous studies from Pakistan has reported the incidence of extra-pulmonary tuberculosis at 50 and 33% respectively.⁶ Other studies suggest that the incidence of extra-pulmonary tuberculosis is increasing.^{7,8} The finding of predominantly pulmonary TB as compared to extra pulmonary is also in concordance with other studies.²³

In the present study, tuberculosis is associated with diabetes mellitus in 30% cases. Both pulmonary and extra pulmonary tuberculosis was associated with diabetes mellitus, but the incidence of pulmonary tuberculosis was higher in diabetics. A recent meta analysis of 13 studies from all over the world has shown increased incidence of tuberculosis in diabetics.⁹ Similar association has been reported from Pakistan.¹¹

Seven cases of chronic liver disease (CLD) were documented and all of them were put on hepatic modified ATT. Chronic liver disease is a very common problem in Pakistan due to high prevalence of hepatitis-B and C. Treatment of tuberculosis in these cases is very challenging as most anti-tuberculous drugs are hepatotoxic and tolerance of these drugs is poor in CLD.³⁰ (15%) were diabetics (Table 3) out of which 28 completed the treatment successfully, only 02 defaulted among this diabetic group. out of 200 patients, 01 patient was HIV positive, his HIV status was obtained with his consent on strong clinical suspicion, he was an IV drug abuser. He was referred to HIV treatment center with ATT.

27% of the patients lost to follow up which is similar to what have been reported from other studies conducted at outpatient clinics.¹² Initially, even in DOTS centers the default rate was reported to be as high as 27%.^{12,13} Most private setups including study clinics do not have a re-call system for defaulters. Some of the clinics are now adopting computerized patient data system with their mobile numbers which may ensure a

reduction in default. Previous studies have shown that it can increase the compliance and reduce default rates.^{12,13} The default rates were lower in patients who lived close to the hospital. Default rate was also marginally higher in self financed patients (29%) than company financed patients (25%). One study conducted by Hameed et al also found the default rate as high as 28%

Many under developed countries including Pakistan have a very large private sector^{2, 3}. It is now increasingly recognized that involvement of private sector will be necessary to control tuberculosis in poor countries and for this public private mix (PPM) strategy has been recommended.¹⁴ Several of these projects have been reported from different regions of India.¹⁴⁻¹⁶ PPM has shown marked improvement in case detection and cure rates. Similar partnerships have been reported from other low income countries like Nepal, Myanmar, Uganda, Nigeria, Philippines and Pakistan¹⁸⁻²¹. In the present study females suffering from TB were 58.5% this finding is in concordance with a study conducted in Bangladesh in 2001.²³

Conclusion

Public private mix (PPM) strategy should be extended at a large scale. Private hospitals/clinics should be taken in to confidence and needs to be included in DOTS strategy. Private sector should be encouraged to adopt computerized patient data recording system with contact numbers to re- call the defaulters. this will definitely reduce the default rate continuously being reported in private clinics since long.

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