

Extra pulmonary tuberculosis: A retrospective study in Matara District, Sri Lanka

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Abstract

Background: Despite improvements in prevention, diagnosis and treatment, tuberculosis continues to be a leading cause of death globally. Since extra pulmonary tuberculosis does not contribute significantly to the transmission of the disease, it is not given priority in public health agenda. But it contributes significantly to tuberculosis related morbidity and mortality.

Objectives: To identify the various presentations of extra pulmonary tuberculosis in Matara district, Sri Lanka and to evaluate the response to anti tuberculosis treatment.

Methods: A descriptive study was conducted among the patients registered in District Chest Clinic, Matara. Data analysis were done by using SPSS version 25. Chi-square test was used to assess the association between variables.

Results: Among 147 patients 50.3% were female (mean age = 44years). 93.2% were Sinhalese. 11.6% of the study population were from Matara municipal council MOH area. 32.7% of the sample was diagnosed to have pleural effusion. 9.5% were current smokers. 9.5% were diagnosed with diabetes.98% of patients had completed treatment.

Conclusions: There was high prevalence of pleural tuberculosis. The diagnosis of lymphatic tuberculosis was lower. Prevalence of extra pulmonary tuberculosis was high in MOH areas with high population density. Significantly high treatment completion rate than the national target was noted at district chest clinic Matara.

Introduction

Tuberculosis is an infectious disease, which is air born and caused by the bacillus *Mycobacterium tuberculosis*. (Occasionally by *Mycobacterium bovis* and *Mycobacterium africanum*).¹Tuberculosis can involve any part of the human body other than nails, teeth and hair, with lung being the most common. Extra pulmonary tuberculosis refers as any bacteriologically confirmed or clinically diagnosed case of tuberculosis involving organs other than lung parenchyma or tracheobronchial tree.²

Diagnosis of extra pulmonary tuberculosis should be based on smear/culture positive specimen or histological or strong clinical evidence consistent with active extra pulmonary tuberculosis ,followed

by a decision by a clinician to treat with a full course of anti-tuberculosis chemotherapy.¹A patient with pulmonary and co-existing extra pulmonary tuberculosis should be classified as pulmonary tuberculosis.²


Presentation of extra pulmonary tuberculosis may be atypical and symptoms may depend on the affected anatomical site.Usual anatomical sites of extra pulmonary tuberculosis arebones and joints, central nervous system,genitourinary system, tuberculous lymphadenopathy, abdominal tuberculosis,ocular tuberculosis, tuberculosis pleural effusion, miliary tuberculosis, pericardial tuberculosis, tuberculosis involving any other organs.¹

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Presentation of extra pulmonary tuberculosis may be atypical or relatively insidious and tuberculosis may not be considered initially in differential diagnosis. This is an important phenomenon as delay in diagnosis may be crippling or even life threatening. Therefore, from a public health perspective, there is a need to address this group of patients as do they contribute to the total burden of the disease and they do have a significant impact on resources.

According to table 05, 9.5% cases were current smokers while 10.9% had smoked previously. Majority were non-smokers (79.6%). 14.9% of them were consuming alcohol currently while 10.9% had consumed alcohol previously. 74.8% had not consumed alcohol. There were no substance (cannabis and heroine) abuse cases among the study group among both male and female

As shown in the table 06, 97.9% of patients had completed treatment while 0.7% treatment failures and 1.4% had died due to tuberculosis while on treatment.

Table 06: Distribution of treatment outcome and Distribution of treatment response

Category	Frequency	Percentage
Treatment outcome		
Treatment Completed	144	97.9
Treatment failure	1	0.7
Dead	2	1.4

Correlations between co-morbidities and treatment outcome was cross tabulated and there was no significant association was found. Correlations between risk factors and treatment outcome was not found in the study population.

Discussion

In Matara district, in the year 2017 there were 72 (32%) extra pulmonary tuberculosis cases registered out of 225 (total number of registered TB patients) and, In 2018, 81 cases registered out of total 216 (37.5%). 3 147 extra pulmonary patients were included and analysed in this study which is 33.3% out of total tuberculosis cases and it is compatible with the national figures (25%-35%).¹

The mean age was 44 and standard deviation was 18.006. 95 % of cases are in between the age 8 to 80 (mean +_ 2SD). This is compatible with national figures which showed highest burden of the disease is in the most economically productive age group of our society (15-54 years).²

There was no gender predominance of female (50.3%) as compared to male (49.7%). When considered the ethnic groups, 93.2% of cases were Sinhalese, 4.8% cases were Sri Lankan Moor while 2% were Tamil which is compatible with Matara district census-2012 (Sinhalese 94.16%, Sri Lankan Moor 2.94%, Tamil 2.86%). 8 patients (5.4%) had got con-

tact history of tuberculosis in the past and 2 patients (1.4%) had got past history of tuberculosis.

When considered the distribution of anatomical sites, most common was pleural effusion (32.7%), followed by lymphatic system (23.8%). This distribution is not compatible with national figures where the commonest form is lymphatic system which is 35% followed by pleural effusions which is 20%.¹ This revealed increased diagnosis of pleural tuberculosis by using advanced procedures such as thoracoscopy in the District Respiratory Unit.

The occurrence of tuberculosis in any other organ has shown significant variability in Sri Lanka as well as globally.¹ This study revealed third common site as ocular tuberculosis (10.2%) followed by central nervous system (8.8%), bones and joints (6.8%) and abdomen (6.8%), genitourinary tract (3.4%), cutaneous (2.7%) and 4.8% in others. The category other included 3 patients with disseminated tuberculosis, 1 patient with millitary tuberculosis, and 1 patient with vocal cord tuberculosis, 1 patient with pericarditis and a 1 patient with subclavian pseudo aneurysm.

There are 17 MOH areas in Matara district. The most affected MOH area was Matara municipal council (11.6%), followed by Weligama (10.9%), Malimbada (8.8%), Hakmana (8.8%), Kamburupitiya (8.8%), Akuressa (7.5%), Devinuwara (6.1%), Welipitiya (6.1%), Dickwella (5.4%), Pasgoda (4.8%), Thihagoda (4.8%), Athuraliya (4.1%), Kotapola (2.7%), Kekanadura (2.7%), Morawaka (2.7%), Muliatiyana (2.7%), Kirinda (1.4%). This MOH wise distribution is proportionate with the population density of the MOH areas.

There was only one HIV positive patient in the study group (0.7%) which is higher than the national figure which is < 0.1%. There were 9.5% patients with diabetics in the study group which is slightly higher than the national figure which is 8.5%. There were no rheumatoid arthritis patients in this population. There were 2.7% chronic kidney disease patients in the study group which is higher than national prevalence which is 1.3%. There were 1.4% patients with malignancy which is slightly higher than the national figure which was 1.1%. There were 2% patients with chronic respiratory diseases which was less than the national figure which was 6%. There were no correlations found between co-morbidities and treatment outcome.

79.6% were non-smokers while 10.9% had smoked previously and 9.5% have been smoking currently. 74.8% of them had not consumed alcohol while 10.9% had consumed previously and 14.3% have been consuming alcohol currently. There were no

patients with other substance abuse among both genders. There were no correlations found between risk factors and treatment outcome.

144 (98%) patients has completed anti tuberculosis chemotherapy. This is a very good treatment completion rate as >90% treatment success rate is given as the national target.² When compared with the studies conducted by south Asian countries this study showed a high treatment success rate.^{6, 7} One patient had failed treatment (0.7%). Two patients had died due to tuberculosis (1.4%) which is also less than national figure which lies between 3-5 %.²

Conclusions

Economically productive age group (15-54) was affected more and there was high prevalence of pleural tuberculosis. The diagnosis of lymphatic tuberculosis is comparatively low. Prevalence of extra pulmonary tuberculosis was high in MOH areas with high population density which is similar to pulmonary tuberculosis. Prevalence of co-morbidities was higher than the normal population. Significantly high treatment completion rate than the national target indicates an efficient patient follow-up at District Chest Clinic, Matara

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