

ORIGINAL ARTICLE

Clinico-demographic profile of patients treated for Tuberculous Lymphadenitis at the Central Chest Clinic, Colombo, Sri Lanka

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ABSTRACT

Background:

Tuberculous lymphadenitis (TBLN) is the commonest form of extra-pulmonary tuberculosis in Sri Lanka. The management of TBLN faces many challenges due to difficulty in achieving microbiological confirmation as well as slow or paradoxical clinical response during the treatment.

Objective:

To describe the demographic features and the characteristics associated with clinical presentation, diagnostic modalities and treatment outcome of patients with TBLN.

Method:

An audit was carried out revising clinical records of patients treated for peripheral lymph node enlargement due to tuberculosis at the Central Chest Clinic, Colombo.

Results:

A total of 126 clinical records were analysed. The male:female ratio was 1:1.6 with a mean age of 36 years (SD=17.6). The most affected site were the cervical lymph nodes (94%). Mantoux test positivity (>10mm) was detected in 87.5%. Evidence of granulomatous inflammation in primary investigations was seen in 122 (97%) of patients. Out of all only 12 (9.5%) were microbiologically confirmed including 5 culture positives. The rest of the patients (90.5%) were diagnosed based on supportive primary and ancillary diagnostic tests. Paradoxical reactions were identified in 4% of patients. Adverse drug reactions including skin reactions and drug induced hepatitis were noted in 17%. Eighty-two patients achieved complete clinical resolution at the end of 6 months while others were found to have residual lymph nodes necessitating further evaluation.

Conclusions:

The incidence of TBLN was high among females and in the third decade of life, predominantly affecting cervical lymph nodes. The majority were treated based on primary and ancillary diagnostic test results. Prospective studies are recommended for more descriptive assessment.

Background

Out of all forms of Tuberculosis, Tuberculous Lymphadenitis (TBLN) remains the commonest form of extra-pulmonary tuberculosis reported worldwide[1-4]. It is the same in Sri Lanka as well

with 723 patients with TBLN noted in 2015[4].

The definitive diagnosis of TBLN is achieved by culture or polymerase chain reaction (PCR) of *M. tuberculosis* in affected nodes. Positive culture remains the gold standard[5]. Excisional biopsy is



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an invasive approach but carries a higher sensitivity. The histology of these nodes characteristically shows granuloma formation by epithelioid histiocytes and Langerhans type Giant cells with or without caseation necrosis[6,7]. In spite of their usefulness, availability of these investigations is limited due to the facilities available, time taken and cost[8]. Fine needle aspiration (FNAC) on the other hand is a minimally invasive, time-saving investigation in most resource-limited settings[6]. Hematoxylin & Eosin staining of aspirates would demonstrate granulomata as aggregates of histiocytes and associated multinucleated giant cells while a dirty necrotic background would suggest caseation [6,7,9].

Presence of fever and constitutional symptoms are not documented as a common presenting complaint in TBLN[10]. However, when lymphadenopathy reveals granulomatous inflammation with positive ancillary test results such as Mantoux test and raised Erythrocyte sedimentation rate (ESR), in most tuberculosis (TB) prevalent settings the practice is to start on anti-tuberculous treatment (ATT) without spending time on an extensive workup to exclude other causes for granulomatous inflammation such as fungal infections, infections by non-tuberculous mycobacterium, sarcoidosis, Crohn and Wegener disease etc.[6]. The standard treatment duration is 6 months of anti TB drugs but continuation up to 9 months is considered in some settings[10-15]. Management of TBLN poses many challenges due to slow or paradoxical clinical responses such as appearance of freshly involved nodes, enlargement of the existing nodes, development of fluctuation, appearance of sinus tracts and residual lymphadenopathy after completion of treatment [16].

Demographic and clinical characteristics of patients can vary based on the geographical setting. Knowledge on previously treated patients will lead to confident decision making specially in doubtful situations. This audit was conducted to understand the clinico-demographic profiles of patients treated as for TBLN in Sri Lanka.

Methods

A retrospective audit was carried out reviewing medical records of patients treated for TBLN during 2015-16 two year period at the Central Chest Clinic, Sri Lanka. Those who had not completed the full course of treatment were excluded.

The frequency of TB lymphadenitis was analysed according to the gender, age and the ethnicity. Clinical presentation including the site of lymph node involvement, associated constitutional

symptoms, presence of co-morbidities and the results of the microbiological investigations, primary and ancillary investigations and the treatment outcome were recorded. Data were analysed using statistical package for the social sciences (SPSS) version 22.0. Data were summarized using descriptive statistics. Ethical clearance was obtained from the Ethics Review committee of the Medical Research Institute, Sri Lanka.

Results

A total of 126 complete clinical records were analysed. Male: female ratio was 1:1.6. The highest frequency of TBLN for age was seen in the third decade of life (mean age = 36 years, SD=17.6). The distribution according to Sinhala, Tamil and Moor ethnic groups were 71%, 15% and 14% respectively and did not show a significant difference between the percentages ($P>.05$) when compared with the percentages of ethnic distribution in Colombo District[17].

The presenting complaint and the frequency of involvement of different lymph node groups are illustrated in Table 1. Diabetes was the commonest (6%) co-morbidity in this group. One patient had HIV infection. The majority ($n=108$, 86%) did not have co-morbidities. The Mantoux test was positive ($>10\text{mm}$) in 96 (87.2%) individuals and the result was not recorded in 16 files. The ESR was documented to be high in 116 (92%). Chest radiographs of all 126 patients were normal. Compatible ultra sound reports were available in 22 patients. All patients had undergone a FNAC, lymph node biopsy or both as primary diagnostic investigations and the findings are illustrated in Table 2. Evidence of granulomatous inflammation was identified in 122 (97%) of patients. Out of them 74 (60.6%) were caseating granuloma type and 48 (39.3%) were non caseating granuloma type. TB culture reports were available only in 14 patients of which 5 (35.7%) only were positive. Reports of smears for Acid Fast Bacilli (AFB) were available in 9 patients and of them 7 (78%) were positive. Out of 10 samples sent for polymerase chain reaction (PCR), only 4 were positive.

Out of 126 patients studied only 12 (9.5%) were microbiologically confirmed and the diagnosis of TBLN in the rest (90.5%) was based on supportive primary and ancillary diagnostic tests. The presence of granulomatous inflammation with a positive Mantoux test was the minimal diagnostic criteria used to start ATT. There was no significant difference between ESR positivity with granulomatous inflammation without caseation and granulomatous inflammation with caseation ($P>0.05$).

There were no details on parallel investigations

to exclude other causes for granulomatous inflammation found in the records. Paradoxical reactions including further enlargement of persisting nodes and development of new nodes during the treatment were identified in 5 (4%) patients. Adverse drug reactions were identified in 21 (17%) patients after commencement of ATT. These were 17 with skin reactions and 4 with laboratory confirmed drug induced hepatitis.

Complete clinical resolution at the end of 6 months was achieved in 65% including those with microbiological confirmation of diagnosis. Thirty patients out of 44 patients with incomplete resolution were subjected to an extended treatment (total 9 months). Those not offered extended treatment due to small residual node size when reassessed after 3 months and had no progression of nodular size.

Table 1. Clinical characteristics at presentation

Characteristic	Frequency
Presentation	
Painless lump	113 (89.7%)
Lump + LOA and LOW	9 (7.1%)
Lump + Fever	2 (1.6%)
Lump+ Fever + LOW and LOA	2 (1.6%)
Site of lymph node enlargement	
Cervical	115 (91.3%)
Cervical + Axillary	4 (3.2%)
Axillary	4 (3.2%)
Inguinal	2 (1.6%)
Parotid	1 (0.8%)

LOA-Loss of appetite LOW-Loss of weight

Table 02. Results of FNAC and LN biopsy

Result	FNAC	LN biopsy
	n=59 Frequency	n=80 Frequency
GI with caseation	22(37.3%)	53 (66.2%)
GI without caseation	27(45.8%)	25 (31.2%)
Abscess	5 (8.5%)	1 (1.2%)
Reactive changes	5 (8.5%)	1 (1.2%)

FNAC-Fine needle aspiration cytology

LN - Lymph node

GI- Granulomatous inflammation

Discussion

The audit describes the clinico-demographic characteristics of patients treated for TBLN at the Central Chest Clinic. The revealed high incidence of TBLN among females is similar to studies conducted in TB endemic as well as Non-TB endemic countries[5,10,16,18]. It is reported that

the prevalence is higher in the younger population, although the decade of highest incidence presented varies among countries[10,19]. Therefore, the characteristics described, related to age and gender in this study is compatible with other countries. Presentation with a painless lump predominantly of cervical lymph nodes in this study is also comparable with the literature[5,10,14]. Outstanding difference in comparison to studies from elsewhere, is that most of our patients were immunocompetent in contrast to high incidence of patients with HIV reported from some other countries[16-20]. Presence of constitutional symptoms and fever is not documented as a common presenting complaint with TBLN in our study and is in agreement with other publications[10]. Lymph nodes were of caseating granuloma type in 74 (58.7%) and non-caseating granuloma type in 48 (38.1%). This finding is compatible with the percentages in previous studies[21,5].

Availability of culture reports which leads to a definitive diagnosis was highly insufficient. Majority of the patients were referred to the chest clinic after completion of initial investigations from referring health care units. Further search revealed that specific TB culture request forms and culture bottles are not freely available at primary investigation units and sending specimens for TB culture during lymph node biopsy and FNAC procedures has not been done due to practical limitations. This finding highlights the need to optimize the facilities available for microbiological investigations for TB in the units where initial investigations are carried out. However, patients being treated based on FNAC or histological findings supported by ancillary tests remains the practice in most TB endemic countries[10]. The incidence of paradoxical reactions reported was low compared to previous publications[10]. There was no documented diagnostic work up to re-evaluate patients who had residual lymphadenopathy at the end of standard treatment regimen and this is an area to be addressed in future research.

Conclusion and recommendations

In this cohort of patients with TBLN, the frequency was higher among females and those in the third decade of life. They had predominantly affected the cervical lymph nodes. The majority were treated based on primary and ancillary diagnostic tests. Availability of confirmative evidence was highly insufficient.

Primary investigation units should be promoted to send samples for TB culture when performing suspected lymph node biopsy and FNAC in patients with TBLN. Future audits and prospective studies on

diagnostic workup and treatment outcomes will be useful to enhance patient care. A common checklist will minimize the shortcomings in documentation.

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