

## Evaluation of patients with tubercular lymphadenopathy

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### ABSTRACT:

**Background:** Tuberculosis (TB) is one of the major infectious disease and health concern in the world. The present study was conducted to assess cases of patients with tubercular lymphadenopathy.

**Materials & Methods:** 238 diagnosed cases of active TB of both genders were included. Contact history, primary disease or recurrence, complaints at admission, Bacillus Calmette-Guérin (BCG) vaccination, clinical findings and involvement sites were recorded.

**Results:** Out of 238 patients, males were 138 and females were 100. <25 years had 110 and 25-40 years had 128 patients. Fever was present in 203, fatigue in 156, weight loss in 82, cough in 118 and hemoptysis in 73 patients. Involved area was lymph nodes such as cervical in 30, inguinal in 54, mediastinum in 28, axillary in 52, paratracheal in 22, omentum in 18, peritoneum in 10, vertebra in 6, wrist in 8, skin in 5 and CNS in 5 cases. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Maximum cases were seen in males and common site was inguinal lymph node.

**Key words:** Tuberculosis, inguinal lymph node, hemoptysis.

### INTRODUCTION

Tuberculosis (TB) is one of the major infectious disease and health concern in the world. TB is a bacterial disease caused by *Mycobacterium tuberculosis* and infrequently by *Mycobacterium africanum* and *Mycobacterium bovis*.<sup>1</sup> TB pathogens are slow growing, fastidious, hydrophobic and lipid-rich bacteria that have acid fast rod shape which prevent decolorization with acid alcohol.<sup>2</sup> It is a chronic contagious infection that not only affects humans but a wide range of mammals. The main way of spread occurs by airborne transmission and infectious droplets.<sup>3</sup> A person with TB who is coughing is the key source of infection. The infectiousness of a person with TB disease is directly related to the number of tubercle bacilli that he or she expels into the air. Persons who expel many tubercle bacilli are more infectious than patients who expel few or no bacilli.<sup>4</sup>

*Mycobacteria* invade many organs during primary infection, but these foci remain dormant (without disease development) if the host has an effective immune system. Reactivation is accelerated in patients with latent diseases, under conditions where the immune system is suppressed.<sup>5</sup> The risk of EPTB and mycobacteremia increases with advancing immunosuppression. Extrapulmonary involvement can be seen in >50% of patients with concurrent AIDS and TB. EPTB includes TB of organs other than the lung parenchyma, such as the lymph nodes, pleura, abdomen, genitourinary tract, gastrointestinal tract, skin, joints and bones, or meninges. The diagnosis of EPTB is more difficult than that of PTB. Its increasing incidence and severe sequelae due to the delay in diagnosis lead to a significant

decrease in labor force.<sup>6</sup>The present study was conducted to assess cases of pulmonary tuberculosis.

## MATERIALS & METHODS

The present study was conducted among 238 diagnosed cases of active TB of both genders. All patients were enrolled with their written consent. Ethical committee approval was obtained from institutional review committee.

Patient data such as name, gender, age, contact history, primary disease or recurrence, complaints at admission, Bacillus Calmette-Guérin (BCG) vaccination, clinical findings and involvement sites were recorded. Active TB was defined as an identification of *M. tuberculosis* through Ziehl-Neelsen acid-fast stain and culture in LowensteinJensen or BACTEC media in a tissue or infected specimen in culture-positive patients. Results of the study was subjected to statistical analysis. P value less than 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

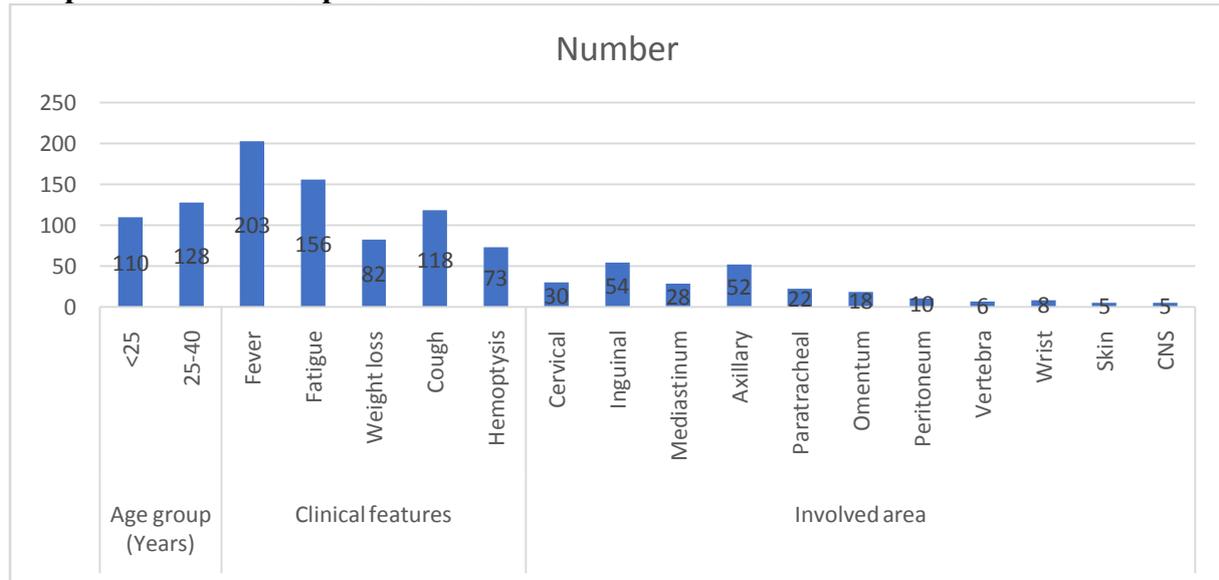
Total- 238		
Gender	Male	Female
Number	138	100

Table I shows that out of 238 patients, males were 138 and females were 100.

**Table II Assessment of parameters**

Parameters	Variables	Number	P value
Age group (Years)	<25	110	0.12
	25-40	128	
Clinical features	Fever	203	0.01
	Fatigue	156	
	Weight loss	82	
	Cough	118	
	Hemoptysis	73	
Involved area	Cervical	30	0.04
	Inguinal	54	
	Mediastinum	28	
	Axillary	52	
	Paratracheal	22	
	Omentum	18	
	Peritoneum	10	
	Vertebra	6	
	Wrist	8	
	Skin	5	
	CNS	5	

Table II, graph I shows that <25 years had 110 and 25-40 years had 128 patients. Fever was present in 203, fatigue in 156, weight loss in 82, cough in 118 and hemoptysis in 73 patients. Involved area was lymph nodes such as cervical in 30, inguinal in 54, mediastinum in 28, axillary in 52, paratracheal in 22, omentum in 18, peritoneum in 10, vertebra in 6, wrist in 8, skin in 5 and CNS in 5 cases. The difference was significant ( $P < 0.05$ ).

**Graph Assessment of parameters**

## DISCUSSION

Tuberculosis (TB) is a major global health problem and may appear as a multisystem disease. It is a chronic necrotizing bacterial infection characterized by the presence of granulomatous lesions, caused by the *Mycobacterium tuberculosis* complex.<sup>7</sup> This includes *M. africanum*, *M. microti*, *M. tuberculosis*, and *M. bovis*. *M. tuberculosis* is responsible for 97–99% of disease development. TB has two sequential processes: infection and active disease. Active disease can develop during any period of life in approximately 10% of the subjects who have been infected with the TB bacillus.<sup>8</sup> The disease may involve any or all organs, but the lungs are the most commonly involved (85%), and 50% of untreated patients die within 5 years after the initial infection. Pulmonary Tuberculosis is primarily identified symptomatically using features like cough, fever, sweats, weight loss and hemoptysis and extra-pulmonary lymph node swelling (lymphadenitis).<sup>9</sup> Also disseminated/miliary TB is characterized by mycobacterial infection apart from lung and lymph node, in any part of the body, including the bone, meninges and kidneys. The probability of developing TB disease is much higher among people living with HIV. It is also higher among people affected by undernutrition, diabetes, smoking and alcohol consumption.<sup>10</sup> The present study was conducted to assess cases of pulmonary tuberculosis.

In present study, out of 238 patients, males were 138 and females were 100. Guleret al<sup>11</sup> evaluated the demographic factors and clinical features of extrapulmonary tuberculosis (EPTB) compared to those of pulmonary tuberculosis (PTB) among adult immunocompetent patients. Among the 427 patients, 55 patients with both PTB and EPTB and who were using steroids or had taken immunosuppressive drugs were excluded from the study. Of the 372 patients, 227 (61%) were males and 168 (45.2%) had EPTB; 204 (54.8%) patients had PTB. The most frequent sites of EPTB were the lymph nodes (n = 45, 12.1%), pleura (n = 40, 10.7%) and brain (n = 7, 1.8%). The most common symptoms were cough (n = 174, 46.7%), night sweats (n = 127, 34.1%) and fever (n = 123, 33%). Compared to EPTB patients, PTB patients were less likely to have received Bacillus Calmette-Guérin vaccination (odds ratio 0.41, 95% confidence interval 0.2–0.63; p < 0.001). Eighty-one (48.2%) of the EPTB and 146 (71.6%) of the PTB patient.

We observed that <25 years had 110 and 25-40 years had 128 patients. Fever was present in 203, fatigue in 156, weight loss in 82, cough in 118 and hemoptysis in 73 patients. Involved area was lymph nodes such as cervical in 30, inguinal in 54, mediastinum in 28, axillary in

52, paratracheal in 22, omentum in 18, peritoneum in 10, vertebra in 6, wrist in 8, skin in 5 and CNS in 5 cases. Keseteet al<sup>12</sup> assessed the prevalence of tuberculosis disease among patients attending at Nakfa Hospital, Eritrea. A total of 1100 patients were examined for tuberculosis using acid fast staining test. The overall prevalence of smear positive pulmonary TB cases was 7.8% (86 cases out of 1100). Females (8.2%) were more prone to have a positive Tuberculosis smear than males (7.4%). According to severity of infection, 38(3.5%) of subjects were +1 positive, whereas 23(2.1%) and 24(2.2%) of patients were +2 and +3 positives respectively. The highest prevalence of pulmonary TB was observed in the adult age group of 41-60 years (11%) and a comparatively higher number of cases was recorded in age group 21-40 years (8.3%). Adults aged between 41 to 60 had a two times more likelihood to be infected with Tuberculosis than those aged below 20 years old. Moreover, pulmonary tuberculosis was highly prevalent among middle age (20-60) than any other age class in all study years (2014-2019). The pulmonary TB cases were highly predominant during the year 2014 which was 16.8% (19 of 113 subjects) whereas the almost a quarter of it (4.5%) was recorded in following year. Based on locality, the highest rate of infection was observed in Adobha (25%), a town at border of Sudan and Eritrea, in which patients who came from Adobha had 4 times more likelihood to be infected than those from Nakfa town.

Gupta et al<sup>13</sup> evaluated spirometry in cured PTB patients and its association with radiological abnormalities and duration after being cured. 75 PTB treated patients (47 males, 28 females) underwent clinico-radiological evaluation, and spirometry [FEV1, FVC, FEV1/FVC ratio]. The patients were further classified into 3 groups according to recent guidelines (ATS/ERS joint statement) i.e mixed, obstructive and restrictive defect. Abnormal PFT was seen in 92% (69/75 cases). Mixed pattern was seen in 36%, restrictive defect in 34.7% while obstruction was seen in 21.3% cases. Restrictive abnormality was more commonly seen in females (P=0.030) and old age (P=0.000006) while obstruction in males and young population. Statistically significant direct association of pulmonary impairment was seen with radiological changes (P<0.001) and post treatment duration (P=0.012) but not with age.

## CONCLUSION

Authors found that maximum cases were seen in males and common site was inguinal lymph node.

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