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Magnitude of Persistent of Tuberculosis Clinical Signs after Completing Anti-TB Treatments in Ethiopia

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ABSTRACT: Tuberculosis is a worldwide problem with a considerable morbidity and mortality per annum. The disease is curable and early diagnosis and chemotherapy is very essential. Despite completing the recommended course of therapy and clearance from the disease causing agent the clinical signs persist in TB patients. The current study aimed to assess the possible claims of persistent signs which are either resulted from the drug side effects or the disease itself by the TB patients. A cross-sectional study design conducted on volunteer pulmonary tuberculosis patients. The variables included were those signs which are used to diagnose tuberculosis. Closed questionnaire with YES or NO answer was used. The current study revealed that three fourth of the treated TB patients claimed the presence of either one or more signs, while one fourth reported free from any signs which they knew before anti-TB treatment. Extra pulmonary tuberculosis (in fact it cloud be new infection) was observed on 7.1% (2/28) of the participants.
It is concluded that persistent of clinical signs after completing TB treatment courses is noteworthy. Prolonging recovery time would affect productivity. Despite the limitations the information generated suggested further study to clear out the mere cause/s of the clinical signs.

KEYWORDS: patient, signs/syndromes, treatment, tuberculosis.

1 INTRODUCTION

Tuberculosis (TB), caused primarily by *Mycobacterium tuberculosis*, is a global problem. Millions of people developed TB in each year and significant number died in the same year from the disease. Ethiopia is one of the TB high burden country ranking 8th in the world. Any form of TB confirmed cases received anti-TB drugs to clear their ailments. Treatment is given for six months and those completed their course of treatment properly believed to be cured from the disease. At this moment the drug of choices for treatment of TB is multiple using DOTS (the best curative methods) [1]. These drugs include isoniazide, rifampin, ethambutol and pyrazinamide at different dosage rates. Although the drugs are not free of side effects, since the benefits outweigh, anti-TB drugs are used in a similar manner to other antibiotics. Some of the side effects that could be noticed by using the multiple therapies are yellow skin (jaundice), unexplained fever, tingling or numbness, skin rash or itchy skin, change of vision as well as liver damage [2], [3]. After completing treatment, it is assumed that the patient would be free from the disease causing agent. Although it is not new, people completing their anti-TB treatment heard while complaining about some post treatment signs they suffered from. In fact this might not be directly related to the drugs only; since the damage resulted from the TB disease could lead to prolonged time of recovery. Besides, the claims stated by the patients are the signs of tuberculosis. The current study aimed to assess the magnitude and the type of signs that did not disappear after completing their course of treatments.

2 METHODS

The study was conducted in North Gondar and Wollo zones of Amhara national regional state, Ethiopia. Study participants were selected purposefully and those TB patients came to health institutes who owned cattle were included. Closed questionnaire with YES or NO answers were prepared to collect the required information. Due to time and logistic

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issues the claims were not checked and verified by physicians. Ethical clearance was obtained from Institutional Review Board of Addis Ababa University and Ethics committee of Armauer Hansen Research Institute. All Participants consented before the interview. Totally 35 TB patients were volunteer to respond, but 7 of them were under treatment and omitted from the interview. Types of claims were directly taken from the clinical signs of tuberculosis. Data entered in and analyzed by SPSS version 20 [4]. Claims were categorized as 0, 1, 2, 3 and >3. Descriptive statistics is implemented and tables used to present the finding.

3 RESULTS

Totally 28 participants aged between 18-45 were included, of which females contributed nearly 68% (19/28). Some claimed as having one or 2 even more than three claims after completing their treatment (Table-1).

Table 1: Category of claims in North Gondar and Wollo zones of Amhara region, Ethiopia N=28

Claims category	Number	Percent
0 Claims	7	25.0
1 Claim	4	14.3
2 Claims	2	7.1
3 Claims	4	14.3
>3 Claims	11	39.3
Total	**28**	**100**

As it is shown in **Table-1**, among the respondents, 53.6% were having 3 and above complaints while one fourth of them were not suffering from any claims. In general three third of the respondents were claimed about the presence of one and more persistent clinical signs.

Table 2: Types of claims by TB patients in North Gondar and Wollo zones of Amhara region, Ethiopia N=28

Claims by sign	Number	Percent
Heamoptysis	0	0
In appetence	2	7.1
Anemia	2	7.1
Weight loss	2	7.1
Fever	7	25.0
Cough	8	28.6
Dyspenia	9	32.1
Tachycardia	11	39.3
Chest pain	12	42.9
Night sweating	12	42.9
Fatigue	16	57.1
Extra pulmonary TB	2	7.1

As it is presented from **Table- 2**, feeling fatigue was the claim which is responded at large. No one responded heamoptysis. In a nut shell 21.3% of the TB patients had in appetence, anemia and weight loss. A quarter of the attendants were suffering from fever and 42.9% claimed the presence of night sweating. Cough, dyspenia and chest pain claims were 28.6%, 32.1% and 42.9%, respectively. Swelling of the lymph node as a sign of extra pulmonary TB was observed on 7.1% of the interviewee.

4 DISCUSSION

Tuberculosis is one of the major public health problems. Active tuberculosis is controlled by chemotherapy [5]. Anti-TB drugs do have known minor and major side effects up on utilization. The signs of tuberculosis could improve within 2-3 weeks after treatment commencement, but if diagnosis is delayed permanent lung damage could occur [5]. In this

preliminary observational study a quarter of TB patients were having persistent TB clinical signs after receiving the recommended drugs and duration of therapy. Most of the respondents were living in the rural community and they might not report early to health institutes. Moreover, despite their appearance to the health institutes for diagnosis due to lower bacilli load in the sputum or some laboratory technical problems acid fast bacilli detection might not be feasible. This delay in diagnosis could lead to severe lung damage and the post treatment sighs seen after therapy could be directly or indirectly related to the lung problem. Among the stated signs, chest pain, cough and dyspenia with accompanying tachycardia and fatigue would suggest the possible damage of the lung.

In addition to these problems linked to food shortage and work overload could exacerbate the condition. Besides, majority of TB patients interviewed were females, which could be double burdened. Slight increase in Uric acid and significant decrease in white blood cells after anti-TB treatment was documented in a study conducted in German Nepal Tuberculosis Project and Korea-Thimi friendship hospital[6]. Uric acid released from lung injured cells or crystals activate the NALP3 (Nacht Domain-, Leucine-Rich Repeat-, and PYD-Containing Protein 3) inflammasomes[7] and the effect might be resembled to gout resulting in inflammation. Liver damage as a possible sequel to the anti-TB drugs side effects could also be responsible to weight loss and fatigue [2], [3], [8].

Reduction in the level of white blood cells affects the immunity of the individual thereby compromising possible recovery [9] and even could be succumbed from super infections. Although the status of the participants in the current study was not known, lymphadenopathy behind the ear were observed on 7.1% of the participants and literatures indicated that extrapulmonary TB could occur roughly 15%, and 50%-70% in immunocompetent hosts and patients co-infected with HIV, respectively [10], [11], [12], [13]. Smaller sample size of interviewees and difficulty of establishing causal relationship of signs either with the anti-TB drugs side effects or continuation of the TB disease, the design and lack of considering duration after completing treatment could be seen as a limitation of this preliminary study. Besides, since it is a self report, bias could be seen as a main drawback.

5 CONCLUSION

Timely treating active tuberculosis patients could help the patient as well as to prevent further spread of the disease. The side effects resulted from the drugs as well as the persistence of TB clinical signs after treatment completion could put a hazard to the patient as well as to the family. Individuals after treatment should come to normal and productive. But, the current finding revealed that the majority were suffering from disease signs. Therefore, follow up after treatment completion for a certain period of time seems mandatory. Since the majority of the participants were rural dwellers giving all the necessary support should be practiced. Apart from these relapse or possible drug resistant problems should come in mind to achieve the millennium development goals regarding TB prevention, control as well as elimination goals. For a better understanding and intervention as well as knowing the magnitude further exploration of the problem is highly recommended.

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