

## KNOWLEDGE OF TUBERCULOSIS TREATMENT – A SURVEY AMONG TUBERCULOSIS PATIENTS IN (DOTS) PROGRAM IN NEPAL

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### ABSTRACT

**Introduction:** Tuberculosis (TB) has a long history. Its causative agent, *Mycobacterium tuberculosis*, may have killed more persons than any other microbial pathogen.

**Objective:** To find out patients knowledge about tuberculosis treatment.

**Method:** The study was carried out among the tuberculosis patients attended DOTS program in Nepal. Open ended self administered questionnaires based on the knowledge about Tuberculosis treatment were given to the survey population, literate group were asked to fill up the questionnaire and illiterate group were interviewed by a trained interviewer.

**Results:** This prospective study included 300 diagnosed cases of pulmonary tuberculosis. The age of the respondents varied from 11-70 years. Males were outnumbered than females. Perception about the tuberculosis has been changed positively with the intervention of chemotherapy, 83% of the respondents knew that tuberculosis is a curable disease. Majority of the tuberculosis patients were found to be conscious about duration of treatment 8 months or more than 8 months (82%). Regarding the method of treatment, majority of them suggested consultation with doctor (75%). Knowledge for consequences of incomplete treatment, 25% of respondents answered disease may attack again and only 7.3% of the patients were aware that incomplete treatment will develop drug resistant tuberculosis.

**Conclusion:** This survey showed that majority of patients knew that TB is a curable disease with regular treatment, duration of treatment and method of treatment. This will psychologically encourage them to abide by their treatment instructions. Patients' knowledge about consequences of incomplete treatment was poor. This study suggests that more emphasis should be given on teaching patients about consequences of incomplete treatment.

**Key words:** DOTS, *Mycobacterium tuberculosis*, Chemotherapy, Multi-drug resistant

### INTRODUCTION

World Health Organization (WHO), estimated that one third of the world's population has been exposed to the tuberculosis pathogen.<sup>1</sup> Globally, the rate of case

detection for new smear-positive cases reached 61% in 2006 (compared with the target of at least 70%) and the treatment success rate improved to 84.7% in 2005, just below the target of 85%.<sup>2</sup> Tuberculosis (TB) remains one of the major public health problems in Nepal. About 45% population is infected with TB, of which 60% are adult. Every year, 40,000 people develop active TB, of whom 20,000 have infectious pulmonary TB. Although introduction of DOTS has already reduced the numbers of deaths, however 5,000 to 7,000 people still continue to die each year.

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The review of National Tuberculosis programme (NTP) of Nepal was carried out jointly by Nepal Government and World Health Organization in 1994. The review team found the case finding result of 30% and the cure rate of only 40%. The review team recommended Nepal Government to change the NTP strategy to achieve better result. DOTS strategy was adopted in Nepal by approval of 5-year development plan in 1995. Impressive achievements have been made since then. The NTP has rapidly expanded the DOTS coverage from 1.7% in 1996 to 100% by July 2003. Now almost all diagnosed TB patients are getting treatment under DOTS strategy with more than 85% treatment success rate (now 88%).<sup>3</sup> Studies in different parts of the world revealed misconceptions and limited knowledge about the disease and its treatment.<sup>4,5</sup> The objective of this study was to determine tuberculosis patients knowledge about tuberculosis treatment.

## MATERIALS AND METHODS

The present prospective study was carried out in tuberculosis patients attended Directly Observed Treatment Short Course (DOTS) Programme in Kathmandu Medical College Sinamangal and GENTUP Nepal during January 2006 to December 2007. The study was conducted based on questionnaires included 300 diagnosed cases of pulmonary tuberculosis. A structured questionnaire prepared in English and translated into Nepali language was the tool for data collection. The research objective and methods were explained to the patients, and verbal consent was obtained from them before the data were collected. Random sampling method was used to select the target population for the survey. Open ended self administered questionnaires based on the knowledge about Tuberculosis treatment were given to the survey population, literate group were asked to fill up the questionnaire and illiterate group were interviewed by trained interviewer.

The questionnaire consisted of two sections: Section one, dealing with patient background characteristics (age and sex). Section two, knowledge about Tuberculosis treatment (Type of disease, duration of treatment, method of treatment, and consequences of incomplete treatment). The data collected by using structured questionnaire were entered into a

computer and data was analyzed by EPI-Info version 3.3.2, document version 8.08 updated Sept 2005 and presented by means of tables and diagrams.

## RESULTS

A total 300 tuberculosis patients were included in this prospective study. Background characteristics of respondents are shown in figure 1 and 2. The majority (73%) of the respondents belonged to 21-50 years age group shown in figure 1. Males constituted the majority (64%) of the interviewed patients shown in figure 2.

Respondent's general knowledge about TB treatment is shown in table 1, 2, 3 and figure 3. Regarding the type of disease majority (83%) of the respondents was aware that tuberculosis is curable disease (figure 3). Knowledge about duration of tuberculosis treatment, majority (82%) of them found to be conscious about duration of treatment 8 months or more than 8 months shown in table 1. Regarding consequences of incomplete treatment, only small number (7.3%) of the patients were aware that incomplete treatment will develop drug resistant tuberculosis shown in table 2. Knowledge on the method of treatment majority (75%) of them answered consultation with doctor shown in table 3.

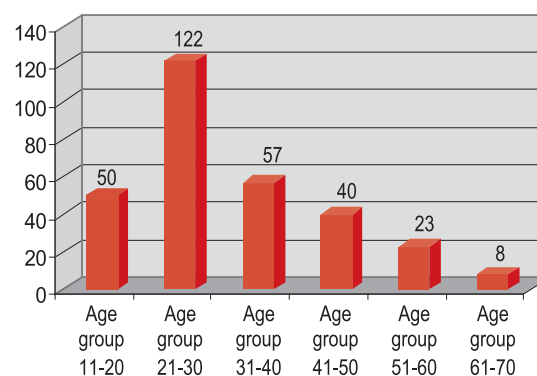


Fig: 1. Age wise distribution of patients

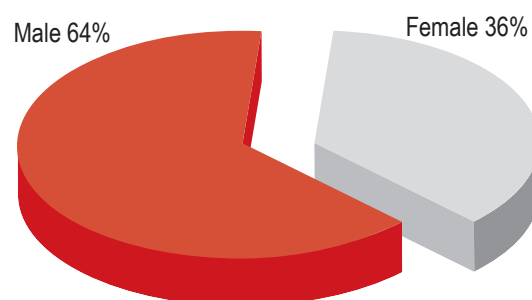


Fig. 2. Gender wise distribution of patients

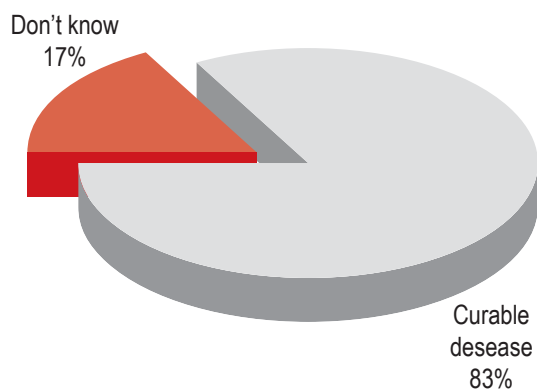


Fig. 3. Type of disease

**Table 1: People's knowledge about duration of treatment**

Duration of treatment	Frequency	%
8 months	192	64%
8-12 months	54	18%
According to doctor suggestion	8	2.6%
Until disease is completely cure	8	2.6%
<b>Don't know</b>	<b>38</b>	<b>12.6%</b>

**Table 2: Consequences of incomplete treatment**

Consequences of incomplete treatment	Frequency	Percentage
Disease may attack again	75	25%
Disease will not be cured	53	17.6%
Disease will worsen	45	15%
Disease will worsen and patient may die	35	11.6%
Person will die	22	7.3%
Develop drug resistant disease	22	7.3%
Drug doses would be repeated	15	5%
<b>Don't know</b>	<b>33</b>	<b>11%</b>

**Table 3: Method of treatment**

Method of treatment	Frequency	Percentage
Doctor	189	63%
Doctor and take nutritional food	35	11.6%
Doctor or homeopathy	30	10.0%
<b>Don't know</b>	<b>46</b>	<b>15.3%</b>

## DISCUSSION

The ultimate goal of patient education is to influence or change patients' health behaviors by providing them with information that motivates them to follow the treatment plan.<sup>6</sup> In case of tuberculosis (TB) different target groups which need to be addressed are patients, their relatives, health care providers and the community members.<sup>7</sup>

Until 50 years ago, there were no drugs to cure TB. Now, strains that are resistant to a single drug have been documented in every country surveyed and, what is more, strains of TB resistant to all major anti-TB drugs have emerged. Drug resistant TB is caused by inconsistent or partial treatment, when patients do not take all their drugs regularly for the

required period because they start to feel better, and doctors and health workers prescribe the wrong treatment regimens or the drug supply is unreliable. A particularly dangerous form of drug resistant TB is multi drug resistant TB (MDR-TB), which is defined as the disease due to TB bacilli resistant to at least isoniazid and rifampicin- the two most powerful anti-TB drugs. MDR-TB is rising at alarming rates in some countries, especially in the former Soviet Union, and threatens global TB control efforts.<sup>8</sup>

The finding of this study shows that majority of respondents (83%) knew that tuberculosis is a curable disease. The belief on curability is being increased with the intervention of DOTS. This reflects the increasing consciousness particularly among rural folk about the ailment. It is of great importance for the patients to

know that TB is curable with regular treatment, as this will psychologically encourage them to abide by their treatment instructions.

The analysis of the present investigation made it clear that majority (82%) of the patients knew the duration of the treatment and that the use of allopathic medicines is optimal method for treatment. Patients' knowledge about the duration of treatment need to cure the disease is an important educational message. As the bacteria needs 6-8 months for full clearance from host tissues.<sup>9</sup> This point is serious, as patients who did not know the total duration of treatment might at any stage of treatment stop taking the drugs. This interruption results in emergence of drug resistance to anti-TB drug. This result differs from the finding of a study conducted in India where by 64% of the respondents knew exactly the total duration of treatment.<sup>10</sup> However, the result is in agreement with the study in Iraq whereby 80.2% answered the disease is curable.<sup>11</sup>

Knowledge about consequences of incomplete treatment only small number 7.5% of respondents knew that incomplete treatment develop drug resistant tubercle bacilli. The results were in agreement with the reports of Subedi *et al.* (2004).<sup>12</sup> Where 5.8% were aware of the results of incomplete treatment. This finding suggests that the knowledge of consequences of incomplete treatment of the TB patients is poor. Above finding of this study suggests that more emphasis should be given on teaching patients about consequences of incomplete treatment. Early detection of drug resistance in TB allows starting of an appropriate treatment, which has an impact in the better control of the disease. MDR-tuberculosis constitutes a major threat to TB control. Patient compliance is a key factor in treatment success. In many countries, a significant proportion of patients stop treatment before completion, for various reasons. The premature interruption of treatment represents a problem for patients, their families and those who care for them, and those responsible for TB programmes.

## CONCLUSION

This survey showed that majority of patients knew that TB is a curable disease with regular treatment,

duration of treatment and method of treatment. This will psychologically encourage them to abide by their treatment instructions. Patients' knowledge about consequences of incomplete treatment is found poor. This study suggests that more emphasis should be given on teaching patients about consequences of incomplete treatment. Incomplete treatment of TB is worse than no treatment at all. When people fail to complete standard treatment regimens, they may remain infectious. The bacilli in their lungs may develop resistant to anti-TB drugs. People who infect will have the same drug resistant strain. While drug resistant TB is treatable, it requires extensively chemotherapy up to two years. It is expensive and more toxic to patient.

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