Original Research Article

Tuberculosis, RNTCP, DOTS and Multidrug resistant tuberculosis: Do our Medical students know enough?

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A B S T R A C T

Introduction: Tuberculosis (TB) is one of the most common infectious diseases worldwide. India has highest burden of TB patients, accounting for about a quarter of the world's TB cases. The disease is rapidly developing and is resistant to multi drugs. TB control is more likely to be achieved if the level of knowledge regarding the disease, its diagnosis, management and development of resistance is increased among medical students.

Aims & Objectives: 1. To assess the knowledge of Tuberculosis and Drug resistance among medical students. 2. To assess their awareness about DOTS and RNTCP guidelines.

Material and Methods: A cross sectional questionnaire based survey was performed among 150 medical students in a tertiary care hospital, Bangalore. The Knowledge of participants about tuberculosis, its transmission, diagnosis and their knowledge about drug resistance, DOTS and RNTCP guidelines were assessed using a questionnaire. The data was analysed using descriptive statistics, proportions and mean.

Results: Out of 150 medical students assessed, more than 80-90% had knowledge about causative agent, disease symptoms, transmission and diagnosis. About 80% were aware of DOTS, availability of free drugs. But poor knowledge was observed about various categories, drug resistance and drugs used for different categories under DOTS treatment regimen and RNTCP guidelines.

Conclusion: Knowledge about drug resistance, DOTS regimen and RNTCP guidelines was poor in medical students. Regular training sessions, CMES, Conferences on tuberculosis is to be conducted for medical students in order to strengthen their knowledge.

1. Introduction

Tuberculosis (TB) is one of the most common infectious diseases worldwide. As per the Global TB report 2017, India has approximately 2.8 Million TB patients, accounting for about a quarter of the world's TB cases. Of these cases 1, 47,000 cases are MDR TB cases, resistant to the first line TB drugs rifampicin and isoniazid.[1] The treatment success rate among MDR-TB patients in India is consistently about 46% and the death rate is around 20%, as against the global level of treatment success rate of 52% and death rate of 17%. High rates of treatment failure and deaths are associated with fluoroquinolone resistance in the Indian cohort of MDR-TB patients. India is also the country with the second highest number of estimated HIV associated TB cases.[2]

RNTCP has released a 'National strategic plan for tuberculosis 2017-2025' (NSP) for the control and elimination of TB in India by 2025. According to the NSP TB elimination have been integrated into the four strategic pillars of "Detect, Treat, Prevent, Build".[2] The goal of NSP 2017-2025 is to achieve rapid decline in the burden of TB, mortality and morbidity, while working towards elimination of TB in India by 2025.[1]

TB trends are influenced by control programmes as well as by biological, social and economic factors. A lack of knowledge regarding TB among health care workers may contribute to an increased risk of developing the disease.

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Control & elimination of TB is more likely to be achieved if the level of knowledge regarding the disease, its diagnosis, management and development of resistance, is increased among medical students in order to make excellent doctors, as they play a vital role in diagnosis, management of TB. Medical colleges play an important role in training the future generations of medical practitioners who will manage TB patients. So this study was undertaken to assess the knowledge of Tuberculosis, drug resistance among medical students and their awareness about DOTS, RNTCP guidelines.

2. Material and Methods

A cross sectional study was carried out in a tertiary care, medical college and hospital, Bangalore. Total of 150 medical students of 5th semester M.B.B.S. were included in the study. The Knowledge of participants about TB signs/symptoms, transmission, diagnosis and their knowledge about drug resistance, DOTS and RNTCP guidelines were assessed using a questionnaire.

Self-administered questionnaires were distributed to all participants and allowed 60 minutes to complete the questionnaire under supervision. The questionnaire had multiple choice questions with single correct response. The participants were instructed to mark a single appropriate answer for each of the questions. The data was analysed using descriptive statistics, proportions and mean.

3. Results

Out of 150 medical students assessed, more than 80-90% had knowledge about causative agent, disease symptoms, transmission and diagnosis (Table 1). First line drugs were known to 62% of students. Only 30% answered correctly about side effects of drugs, 20% know about drugs used in pregnancy and also TB-HIV co infection, 36% were aware about gene responsible for drug resistance in tuberculosis (Table 2).

About 80% were aware of DOTS, availability of free drugs. But poor knowledge was observed about various categories, drug resistance and drugs used for different categories under DOTS treatment regimen and RNTCP guidelines. Only 35% answered correctly about different categories of TB, 30% were aware of drugs used in the treatment of different categories (Table 3).

4. Discussion & conclusion

TB is an ancient infectious disease with new threat of MDR, XDR and TDR TB.

It is very important to have thorough knowledge of the disease to treat patients adequately. This study shows that the knowledge of medical students about the disease, its transmission, diagnosis is adequate about 80%, which is comparable with other studies.[3–5] In contrast, a similar

Table 1: Knowledge about Tuberculosis

Question	Percentage of correct answers
Causative agent	92%
Mode of spread	88%
Symptoms of TB	87%
Diagnostic tests	80%
No. of samples collected	85%
Available treatment for TB	80%

Table 2: Knowledge about Antitubercular drugs and their Resistance

Question	Percentage of correct answers
First line drugs of TB	62%
Side effects of drugs	30%
Drugs used in TB & HIV coinfection	22%
Drugs used for TB in pregnancy	20%
Definition of MDR	71%
Different types drug resistance	60%
Gene responsible for resistance	36%
Tests to detect drug resistance	30%

Table 3: Knowledge about DOTS and RNTCP

Question	Percentage of correct answers
DOTS	80%
DOTS facilities	87%
Definition of new case	26%
Definition of smear positive TB	30%
Category of TB	30%
Treatment for different categories of TB	35%
RNTCP guidelines	35%

study conducted on interns in Delhi, by Sanjay Rajpal et al showed lesser knowledge about modes of transmission and diagnosis of TB.[6] In a study done by Kutare et al only 38% correctly answered the method of diagnosis.[7]

In our study 70% know the definition of MDR TB, but knowledge about side effects of drugs, drug resistance, drugs used during pregnancy, TB- HIV co infection, DOTS regimen and RNTCP guidelines were very poor, similar finding was also reported by Revathi R et al, Giri PA et al, Busari O et al, Singla N et al.[8–10]

5. Conclusion

Regular training sessions, CMES, Conferences on tuberculosis is to be conducted for medical students in order to strengthen their knowledge about drug resistance, DOTS regimen and RNTCP guidelines. TB control is more likely to be achieved if the level of knowledge among medical

students is increased, as they play a vital role in diagnosis and management of TB patients.

6. Source of Funding

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7. Conflict of Interest

None.

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