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Assessment of knowledge of intern doctors of a medical college hospital in Karnataka on revised national TB control programme

Raghavendra L.1*, Subhas Babu P.2, Shivakumar K. M.1

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*Correspondence:

Dr. Raghavendra L,

E-mail: docraghu79@gmail.com

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ABSTRACT

Background: The medical interns usually are the first contact health care providers for patients in teaching hospitals and need to be sensitized towards newer diagnostic and treatment guidelines of various national health programmes. Revised National TB Control Programme is one such health programme which aims to reduce TB burden in our country. The present study was undertaken with an objective to assess knowledge level of medical interns, about recent guidelines of RNTCP pertaining to diagnosis and management of TB, including MDR and XDR-TB.

Methods: A cross sectional study was conducted at one of the Government Medical College in southern Karnataka in the year 2017 with the objectives to assess the knowledge of intern doctors on diagnosis of Tuberculosis as per RNTCP guidelines and to assess the knowledge of intern doctors on treatment of Tuberculosis as per RNTCP guidelines. A pre-tested structured questionnaire was distributed to 83 medical interns to assess their awareness on TB disease, RNTCP and DOTS guidelines. The data was entered in Microsoft office excel sheet and analysed. Analysis was done using descriptive statistics like percentages and frequencies.

Results: A total of 83 out of 96 interns answered the questionnaire of which 50 were females and 33 were males. With regard to TB diagnosis, 79.51% of the respondents correctly identified the case definition of smear positive TB. Only 9.63% of the respondents could correctly mention all the objectives of the RNTCP programme.

Conclusions: Awareness regarding updates on RNTCP is inadequate and needs to be constantly updated with a focus on interns who are first contact health care providers in medical college settings.

Keywords: Awareness, Interns, RNTCP, Recent guidelines

INTRODUCTION

India has been listed under the high burden countries list with respect to tuberculosis as per the Global Tuberculosis report of 2016. It finds mention in all three WHO list that is high TB burden, TB/HIV and MDR-TB. India along with Indonesia, China, Nigeria, Pakistan and South Africa accounted for 60% of the new cases. The National Tuberculosis Control Program (NTCP) was reviewed in India in 1992, and Revised National Tuberculosis Control Program (RNTCP) was drawn and

formally launched in March 1997 with phased coverage in various states throughout India.²

In addition to the existing burden of TB, the pandemic of HIV has further aggravated the incidence of TB. HIV infection makes an individual more prone to develop TB and TB is the commonest opportunistic infection amongst HIV-infected individuals, with WHO estimating that 5% of TB patients are also co-infected with HIV.³ Therefore, proper knowledge of RNTCP is essential not only for TB control but also to contain HIV epidemic (CTD).

¹Department of General Medicine, Mandya Institute of Medical Sciences, Mandya, Karnataka, India

²Department of Community Medicine, Mandya Institute of Medical Sciences, Mandya, Karnataka, India

Inappropriate and incomplete prescription and treatment have been identified as major risk factors for the development of the spread of TB and drug resistance. Training of medical students in RNTCP will ensure better future healthcare in the correct diagnosis and treatment of TB.⁴

In teaching hospitals, the medical interns are the first contact health care provider of patients and need to be sensitized towards updates in RNTCP guidelines for proper management of TB cases.

In view of the above background, the present study was undertaken with an objective of assessing knowledge level of medical interns, about various aspects of recent guidelines of RNTCP pertaining to diagnosis and management of TB, including MDR and XDR-TB.

METHODS

After obtaining the permission of the Head of the Institution and the Institutional Ethics Committee, a cross sectional study was conducted in a Government Medical College in southern Karnataka in the year 2017 with the objectives to assess the knowledge of intern doctors on diagnosis of Tuberculosis as per RNTCP guidelines and to assess the knowledge of intern doctors on treatment of Tuberculosis as per RNTCP guidelines.

Written informed consent was taken from all the participants prior to the administration of questionnaire. The study was conducted in the months of February and March 2017. All intern doctors of MIMS, who graduated in the year 2016 were included in the study. The anonymity of the participants was maintained throughout the study to maintain confidentiality. There were no exclusion criteria. The study tool used was a structured, pre-tested questionnaire to assess their knowledge on TB diagnosis and treatment as per RNTCP guidelines. Entire data was entered into Microsoft ® Excel sheetTM and data was analysed. The questions were of multiple choice type, some of which had more than one correct answer. However, the participants were considered to have correctly answered the questions, if all the correct options for a question were answered.

Analysis was done using descriptive statistics like percentages, frequencies.

RESULTS

A total of 83 out of 96 interns answered the questionnaire of which 50 were females and 33 were males. Some of the students had taken transfer to other medical colleges and so were excluded from the study.

With regard to TB diagnosis, 79.51% (66) of the respondents correctly identified the case definition of smear positive TB. Majority of the respondents felt that the incidence of MDRTB among retreatment cases was

10% (69.8%). Only 9.63% (8) of the respondents correctly answered that incidence of MDRTB among retreatment cases to be 15%. 46.98% (39) of the respondents correctly responded on the time interval for collection of spot sputum sample. 75.9% (63) correctly identified that a person who is Mantoux positive implies that the person is previously infected. Only 2.4% (2) of the respondents correctly mentioned all the advantages of short course chemotherapy. 21.68% (18) of the respondents correctly identified the duration of treatment in DOTS plus regimen. 56.6% of the respondents could correctly mention the regimen for pregnant ladies with TB disease. 20.48% (17) of the respondents correctly identify the various methods of preventing drug resistance. 2.4% (2) of the respondents could correctly identify all the reasons for difficulty in diagnosis of TB in HIV infected.

Majority (69.87%, 58) of the respondents felt that the incidence of MDRTB among retreatment cases was 10%. Only 9.63% (8) of the respondents correctly answered the question. 46.98% (39) of the respondents correctly responded on the time interval for collection of spot sample. 79.51% (66) of the respondents correctly identified the case definition of smear positive TB. 50.60% (42) of the respondents correctly mentioned the number of bacilli required for sputum smear microscopy to be positive. None of the respondents could mention that all of the first three media could be used for mycobacterial culture, majority responded that only L-J medium can be used. 20.48% (17) of the respondents were of the opinion that the mean incubation period of mycobacterial culture was 4 weeks. Majority felt it was 10 weeks. Only 8.43% (7) correctly mentioned the interval between the first and second injections for Mantoux testing as one to three weeks after 1st injection. Only 2.4% (2) of the respondents correctly mentioned all the advantages of short course chemotherapy. 21.68% (18) of the respondents correctly identified the duration of treatment in DOTS plus regimen. 33.73% (28) of the respondents mentioned all the adverse drug reactions of ethambutol. 13.25% (11) of the respondents identified that ADR of thiacetazone.

32.53% (27) of the respondents could correctly mention the criteria for switching over to continuation phase from intensive phase. 30.12% (25) of the respondents mentioned correctly the alternate specimens that could be tried in case of child microscopy fails. 56.62% (47) of the respondents could correctly mention the regimen for pregnant ladies with TB disease.

3.61% (13) of the respondents could identify the various prophylaxis that can be tried in case of TB contacts. 20.48% (17) of the respondents correctly identify the various methods of preventing drug resistance. 2.4% (2) of the respondents could correctly identify all the reasons for difficulty in diagnosis of TB in HIV infected. Only 3.61% (3) of the respondents could correctly identify all the bactericidal anti TB drugs.

Table 1: Responses of interns for various parameters pertaining to diagnosis and treatment of TB.

Question no.	Question	Correct response	No. of participants who answered correctly
1	Percentage of TB cases and deaths that occur among men in India	60%	15.66% (13)
2	The target of DOTS programmes	- Successful treatment - Cure rate of 85% of NSP cases - Detection of 70% of such cases	9.63% (8)
3	The highest TB burden country in the world in terms of absolute number of incident cases that occur each year	India	92.77% (77)
4	The incidence of MDRTB among notified new pulmonary TB was about 2.2% and among retreatment cases was about	15%	9.63% (8)
5	Polyresistance is resistance to more than one first line antiTB drug (other than INH and rifampicin) but multidrug resistance is at least both	Isoniazid and Rifampicin	32.53% (27)
6	Extensive drug resistance is resistance to any Fluoroquinolones and at least one of three second line injectable drugs (capreomycin, kanamycin and amikacin) in addition to	MDR	49.39% (41)
8	To declare a patient as smear positive TB	At least one positive out of two	79.51% (66)
13	In two step testing (Mantoux text) if the second test read 48-72 hour after injection is positive	The person is previously infected	75.9% (63)
14	The advantages of short course chemotherapy	-Rapid bacteriological conversion -Lower failure rates -Reduction in frequency of emergence of drug resistant bacilli	2.4% (2)
15	The DOTS plus regimen for MDR-TB comprises of 6 drugs (kanamycin, levofloxacin, ethionamide, ethambutol and cycloserine) for 6-9 months (intensive phase) and 4 drugs (levofloxacin, ethionamide, ethambutol and cycloserine) is for (continuation phase)	18 months	21.68% (18)
18	The total regimen of XDRTB is 24-30 months. The change from intensive phase (6-12 months) to continuation phase (18 months) is done after culture conversion where in 2 consecutive negatives cultures are taken at a gap of.	1 month	32.53 (27)
20	Treatment of pregnant ladies with TB	Isoniazid Rifampicin Ethambutol for 2 months followed by Isoniazid and Rifampicin for additional 7	56.62% (47)

		months	
21	The type of drug resistance to TB Are	Pre-treatment resistance Acquired resistance	2.4% (2)
22	The chemoprophylaxis that can be tried in case of contact for TB	INH for 1 year INH plus Ethambutol for 9 months	3.61 (3)
23	Prevention of drugs resistance can be prevented by	Treatment with two or more in combination Using drugs to which bacteria are sensitive Ensuring the treatment complete and adequate Ensuring the treatment regularly	20.48% (17)
24	Diagnosis of TB in people with HIV is difficult because	-High frequency of sputum negative smears -Tuberculin skin test often fails -Chest X ray is less useful since they have less cavitation -Cases of extra pulmonary TB seems to be more common in people who are co-infected	2.4% (2)

DISCUSSION

In our series, the success rate was 83.3% in cases. In a study done in a rural Medical College in Loni Maharashtra among undergraduate medical students by Giri PA and Phalke DB, thirty-four (39.5%) participants defined multi-drug-resistant tuberculosis (MDR-TB) precisely in pretest, whereas 32.53% (27) of the respondents correctly answered the question on the meaning of poly-resistance and multidrug resistance in our study.⁵ In the same study 63.9% could mention the primary objective of RNTCP, 9.63% (8) of the respondents in our study could identify all the objectives of RNTCP correctly. Some of them could identify one of the objectives like successful treatment 1.2% (1), cure rate 14.45% (12) and case detection rate 10.8% (9).

In a study done by Mehta D et al, in north India in 2012, the time duration in which sputum specimen should be processed was told correctly by only 42.5%, whereas in our study 46.98% (39) of the respondents correctly responded on the time interval for collection of spot sample.⁶

In a study done by Bogam R R in a medical college in Maharashtra in 2013, 15 (14.7%) could correctly identify the number of sputum samples required for TB screening and diagnosis. Whereas 79.51% (66) of the respondents correctly identified the case definition of smear positive TB in our study. Which is similar to a study done by Balamurugan SS et al, in a medical college hospital in Salem in 2013. The number of sputum samples to be collected under DOTS where 118 (78.7%) answered correctly.

CONCLUSION

The study found that, knowledge regarding key aspects of the RNCTP programme needs to be updated especially the reason why the programme has been instituted. Also, the need to prevent the emergence of MDR TB cases. Emphasis to be made on imparting knowledge regarding screening for TB and treatment in special population groups like pregnant ladies and HIV infected.

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