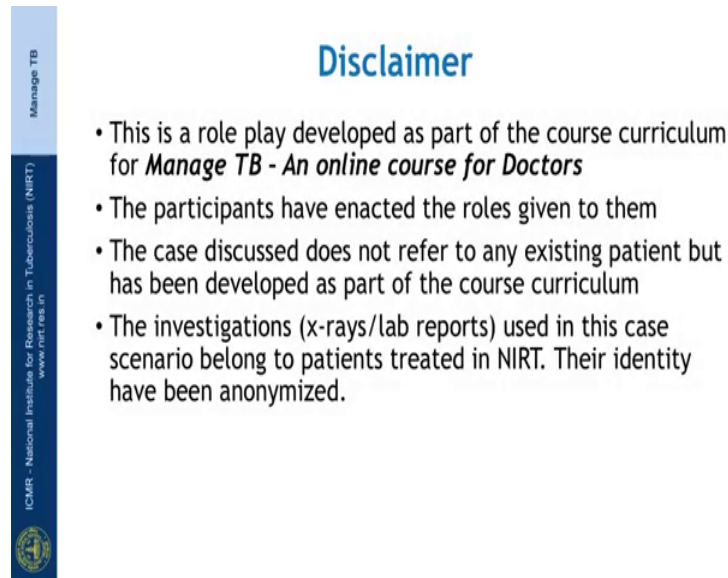


Manage TB
Indian Institute of Technology, Madras

Lecture - 34
Case discussion-Approach to treatment of drug sensitive TB

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Disclaimer

- This is a role play developed as part of the course curriculum for *Manage TB - An online course for Doctors*
- The participants have enacted the roles given to them
- The case discussed does not refer to any existing patient but has been developed as part of the course curriculum
- The investigations (x-rays/lab reports) used in this case scenario belong to patients treated in NIRT. Their identity have been anonymized.

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Good morning ma'am.

Good morning doctor Vignesh.

Ma'am, I have a patient to discuss with you.

Yeah all right.

Is this an appropriate time ma'am?

Yes, go ahead, we can discuss.

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Case description

- 35-year-old male
- Working in Software company
- Persisting cough for > 20 days
- Fever - 1 week, intermittent
- Loss of weight and appetite - 2 months
- No co-morbid conditions
- Smoker for past 10 years

Investigation

- Sputum smear positive for Acid Fast Bacilli (AFB)

Ma'am, we have a 35 year old male, an IT professional who has presented with complaints of loss of appetite and weight for the past 2 months and persistent coughing for the past 20 days and fever for the past 1 week ma'am. He is also a nonsmoker for the past 10 years and has no other comorbid illnesses. His lab investigations have turned up and his sputum is positive for acid fast bacilli.

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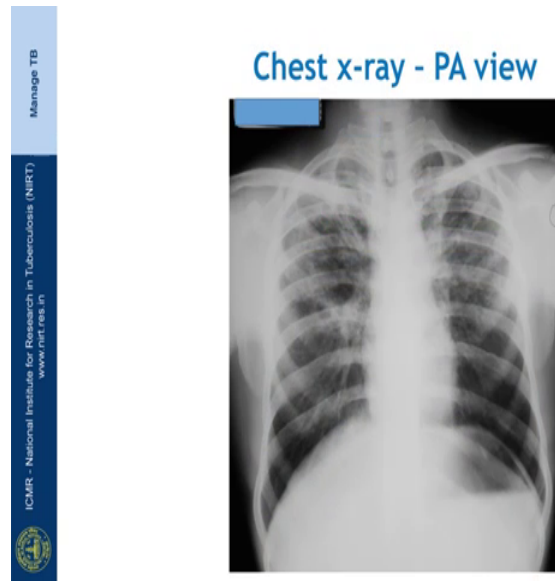
Xpert MTB/RIF test result

The screenshot shows a 'Test Report' for Xpert MTB/RIF. It includes patient ID, sample ID, test type (Sputum), and sample type (Sputum). The test result is 'MTB detected with Rifampin resistance'. Below this, there is a table for 'Test and Assay Result' with columns for Assay, Ct, Result, and Index. The table shows results for Probe C, Probe B, Probe A, and QC 1 and 2, all of which are 'PASS'. At the bottom, there is a section for 'User' information including Name, Date, Start Time, End Time, S/W Version, Instrument S/N, Cartridge S/N, Reagent Lot, and Well Name.

Assay	Ct	Result	Index
Probe C	20.1	POS	PASS
Probe B	21.8	POS	PASS
Probe A	22.1	POS	PASS
QC 1	0.0	Neg	PASS
QC 2	0.0	Neg	PASS

And gene Xpert has detected Mycobacterium Tuberculosis which is Riphampacin sensitive.

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And his x-rays shows bilateral lung parenchymal involvement, ma'am. Have you collected any other additional information to help us to manage this patient?

Yes ma'am. I enquired regarding his previous any anti TB treatment which is negative and his HIV status is also non reactive. Since he is a nonsmoker, he has been smoking for the past 10 years about a pack of cigarette per day. He also consumes alcohol occasionally on company parties. There are no other committed illnesses like diabetes or hypertension and his clinical examination reveals that he is febrile, not anemic, no clinical evidence of jaundice or cyanosis and clubbing. And his vitals are stable and his weight is 57.6 kilograms.

Ok. So now, it appears that this patient is having drug sensitive pulmonary tuberculosis. So, what will be your line of management for this patient?

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Treatment of drug sensitive TB

Type of TB Case	Intensive phase	Continuation phase
New TB patent	2 months	4 months
[No or <1month of previous TB treatment]	Isoniazid Rifampicin Ethambutol Pyrazinamide	Isoniazid Rifampicin Ethambutol

RNTCP guidelines, 2016

Ma'am, since the gene Xpert turned out to be Rifampicin sensitive and there is no previous history of anti TB treatment, I would like to start him on a 6 month daily regimen, which consists of two months of intensive phase of drugs, isoniazid, rifampicin, pyrazinamide and ethambutol followed by a 4 month course of continuation phase with drugs isoniazid, rifampicin and ethambutol.

So, what if this patient had received previous anti TB treatment? What regimen would you prescribe for him in that case?

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Treatment of drug sensitive TB

Type of TB Case	Intensive phase	Continuation phase
Previously treated TB patient [>1 month of previous TB treatment]	2 months of Isoniazid, Rifampicin, Ethambutol Pyrazinamide and Streptomycin + 1 month of Isoniazid, Rifampicin, Ethambutol and Pyrazinamide	5 months of Isoniazid, Rifampicin and Ethambutol

RNTCP guidelines, 2016

Ma'am, in this case, the duration is little longer under few additional drug has been added. I will start him on 8 month daily regimen with an intensive phase of 2 months consisting of isoniazid, rifampicin, pyrazinamide and ethambutol with injection streptomycin followed by 1 month of isoniazid, rifampicin, ethambutol and pyrazinamide. The continuation phase consists of five months duration with isoniazid, rifampicin and ethambutol.

Why do you think it is important to give a longer duration of treatment for patients who had received previous anti TB treatment?

Ma'am, it is known that patients who had received anti TB treatment previously, may harbor drug resistant bacilli in their lung. So, hence they need for additional duration in the additional drugs, ma'am.

So, what dosage of drugs will you prescribe for this patient?

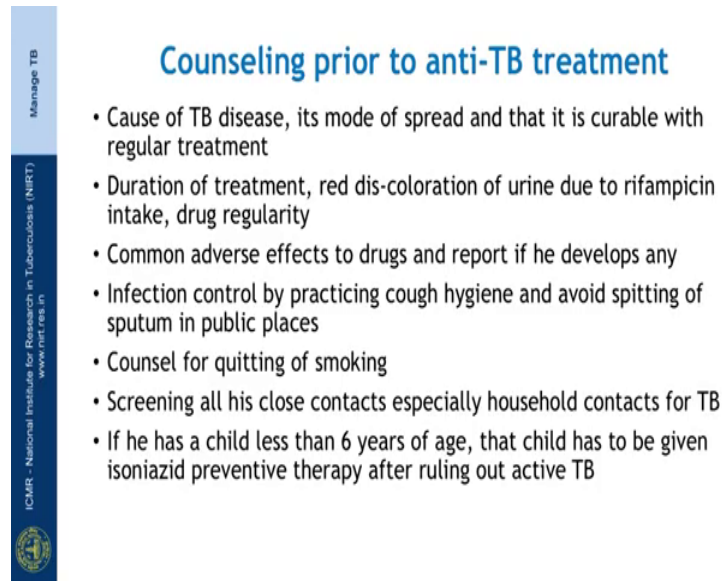
Ma'am, all these drugs prescribed above are as per the body weight of the patient by weight scale ma'am given in the course.

Fine. So now, you are going to start this patient on TB treatment, what do you think you need to do prior to start of treatment for this patient?

Ma'am, I will advise him regarding the continuity of treatment without skipping any medicines and continue till the duration of the treatment is over.

It is very important point that you have told now. The pretreatment counseling is very important in the management of TB patients.

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Counseling prior to anti-TB treatment

- Cause of TB disease, its mode of spread and that it is curable with regular treatment
- Duration of treatment, red dis-coloration of urine due to rifampicin intake, drug regularity
- Common adverse effects to drugs and report if he develops any
- Infection control by practicing cough hygiene and avoid spitting of sputum in public places
- Counsel for quitting of smoking
- Screening all his close contacts especially household contacts for TB
- If he has a child less than 6 years of age, that child has to be given isoniazid preventive therapy after ruling out active TB

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You will have to explain to the patient about the nature of his disease, the cause set of organisms and its mode of spread. Not only that, you will have to mention him about the total duration of treatment, the need for him to take drugs regularly, the consequences of irregular treatment and inform us of any issues that can happen with interruption of treatment.

You have to educate the patient about the side effects to the drugs and ask him to report immediately if he develops any one of them. You will also have to mention about the reddish discoloration of urine with rifampicin which patient has to consume as part of anti TB treatment. And you will have to advise him about cough hygiene and avoiding spitting in public places.

Because this will help to reduce the transmission of disease and you must be knowing that his household contacts are at a higher risk for developing TB. So, advise a patient to clean all his household contacts and children less than 6 years of age in his house, after ruling out active TB should receive isoniazid preventive therapy. So, all these points are important to be covered in the pretreatment counseling of patients. So now, that you have counseled the patient, how will you monitor the progress to treatment in this patient?

Ma'am, I will advise him to get enrolled and get treatment from the RNTCP that is the Revised National Tuberculosis Control Program, where they offer patient centered

treatment. The drug adherence is monitored by a trained treatment supporter who is a health care worker or a community volunteer. I also heard that they are using SMS reminders and phone calls to make the patients remember to take the tablet us on a daily basis, ma'am.

Ma'am, what if the patient wants to take it take the treatment in a private set up?

Yeah, we have to respect the patients choices; be it any provider either public or private, their responsibility is to ensure that the patient completes the entire duration of treatment; not only that the patient have to be monitored during the treatment for their progress. So, it is important to counsel them about the, about the consequences of a regular treatment. And it is, you have to also have in mind that you have to notify this patient. So, you please make arrangements to notify this patient as part of the mandatory TB notification initiative. So, how do you, you plan to monitor the progress of this patient?

Ma'am he should be reviewed every month regarding the clinical improvement and his sputum conversion and his weight gain and other symptoms, ma'am. I will also ensure that a test for sputum is done at the end of the intensive phase and the continuation phase. In addition to that at the end of the treatment, a chest x-ray can be taken and the sputum culture can also be taken, ma'am.

So, when do you think you can stop treatment for this patient?

Ma'am, if the if his sputum examination turns out to be negative at the end of the treatment then I will stop that treatment, ma'am. Ma'am, but one doubt.

Yes.

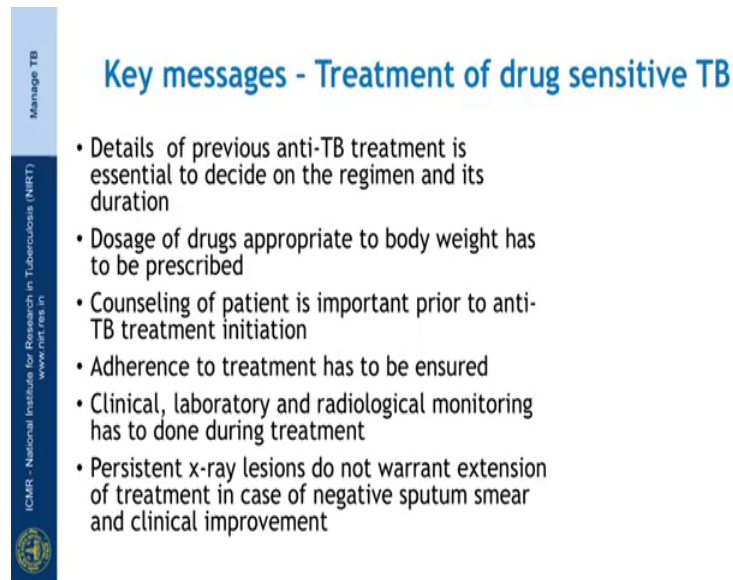
If the x-ray still shows lung lesions, should that treatment be extended for some more time?

If the patient is having clinical improvement and it is and his sputum smears are negative at the end of treatment, you can stop treatment for this patient. And you, you must note that the radiological lesions have a long take a long time to clear. So, if there is radiological improvement and there is no worsening of disease, a persistent lesion in a chest x-ray does not warrant extension of treatment duration. So, are you clear about that?

Yes ma'am. I will go and start the treatment right away.

Ok. So now, can you summarize the important points of our discussion?

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Key messages - Treatment of drug sensitive TB

- Details of previous anti-TB treatment is essential to decide on the regimen and its duration
- Dosage of drugs appropriate to body weight has to be prescribed
- Counseling of patient is important prior to anti-TB treatment initiation
- Adherence to treatment has to be ensured
- Clinical, laboratory and radiological monitoring has to be done during treatment
- Persistent x-ray lesions do not warrant extension of treatment in case of negative sputum smear and clinical improvement

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Yes ma'am. Details of previous anti Tuberculosis treatment is essential to decide on the regimen and its duration. Dosage of drugs appropriate to body weight has to be prescribed. Counseling of patient is important prior to anti tuberculosis treatment initiation. Adherence to treatment has to be ensured. Clinical laboratory and radiological monitoring has to be done during treatment. Persistent x-ray lesions do not warrant extension of treatment, in case of negative sputum smear and clinical improvement.