Manage TB
National Institute for Research in Tuberculosis, Chennai

Lecture - 37
Treatment of Multi-drug resistant Tuberculosis (MDR-TB)/ Extensively-drug resistant Tuberculosis (XDR-TB)
Case discussion

This is a role play developed as part of the course curriculum for manage TB An online course for Doctors. The participant 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 such as x-rays and lab reports used in this case scenario belongs to patients treated at National Institute for Research in Tuberculosis, Chennai their identity have been anonymized.

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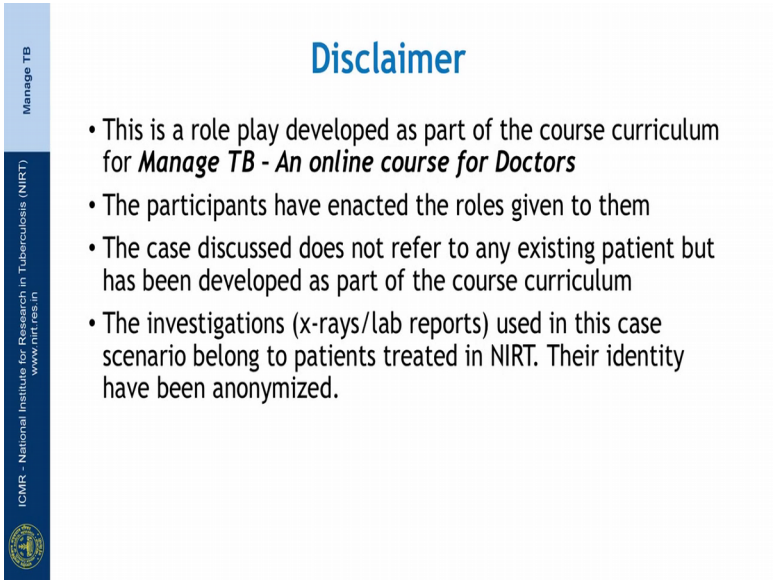

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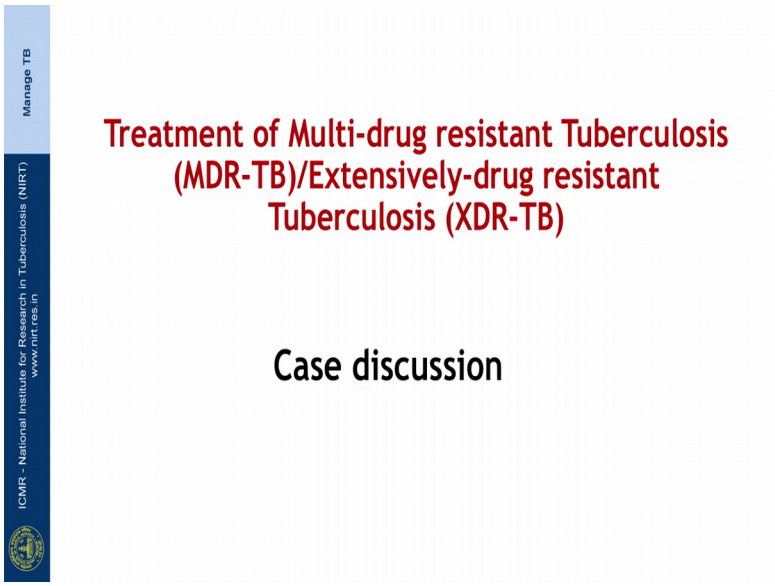

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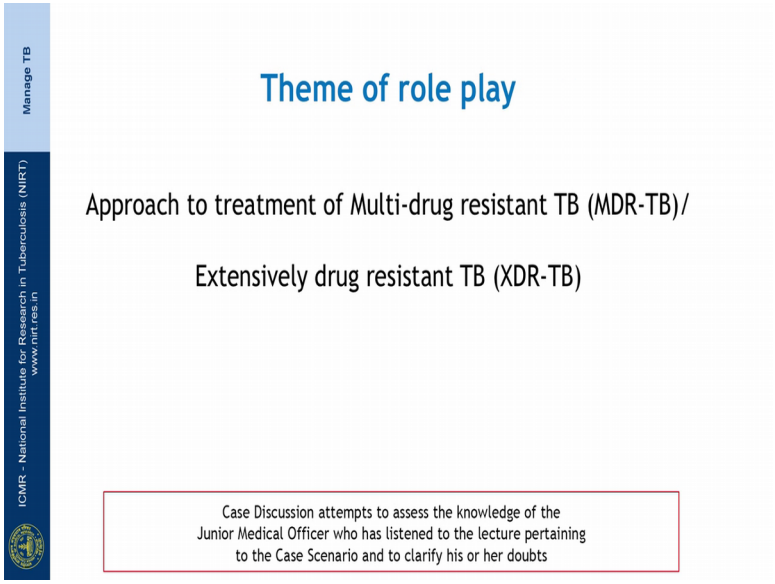

Good morning ma'am.

Good morning Dr. Krithika.

Ma'am, can I discuss the case with you if you are free?

Yeah sure.

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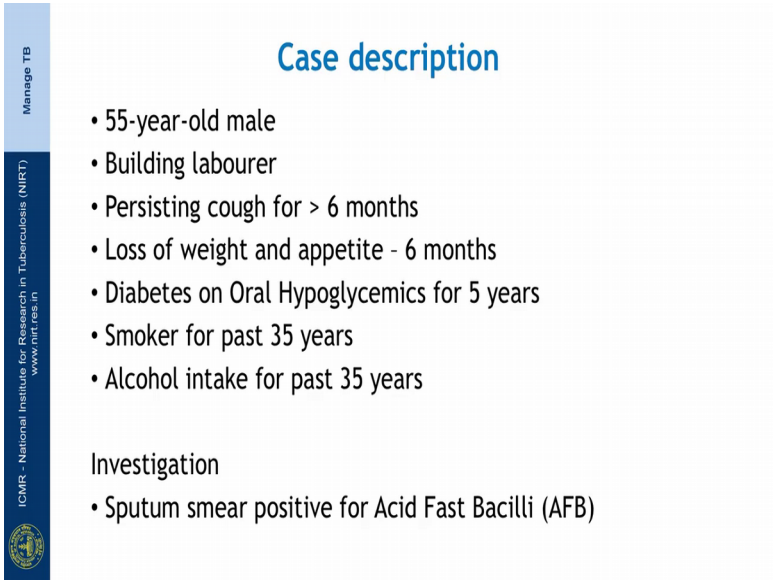

Ma'am, 55 year old male who is the building construction labourer, the occupation came with persistent cough and the loss of weight and appetite for more than 6 months and he is a diabetic on Oral Hypoglycemics for 5 years.

He is a smoker and has history of alcohol consumption for the past 35 years.

Ok.

His sputum smear shows positive for acid fast bacilli and his line probe assay shows that the organism is resistant to both isoniazid and rifampicin.

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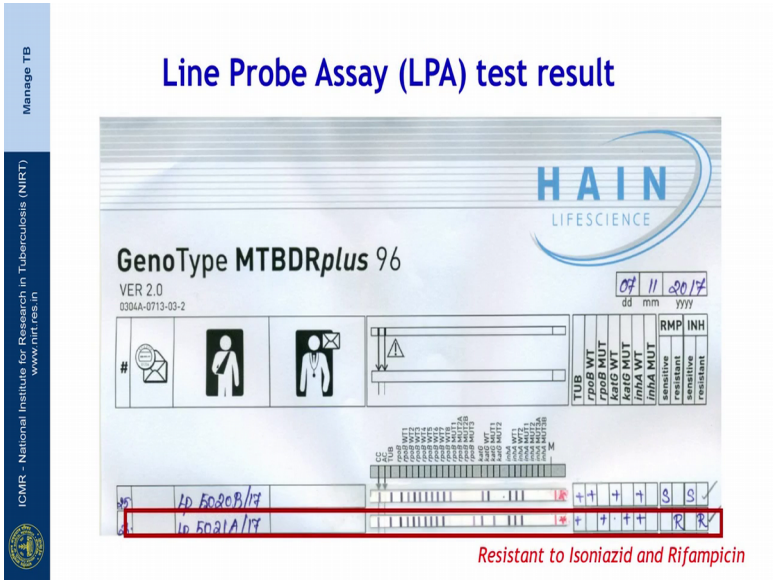

And so, we ask for the line probe assay of the second line part.

But it shows that he is sensitive to fluoroquinolones and aminoglycoside. His chest x-ray shows bilateral (Refer Time: 01:46).

Yeah. So, what is your diagnosis for this patient?

Ma'am, I think it is a case of MDR TB.

Right. So, he is a case of pulmonary multidrug resistant tuberculosis. Do you have any other information on this patient?

Ma'am, I had asked about any previous anti TB treatment.

He had taken 3 months of ATT under RNTCP about a year ago.

Then, he discontinued his treatments and he felt better and also he had to relocate for this job. I also looked into the available precautions and investigations, it shows that he has not been treated with the fluoroquinolones and aminoglycosides.

Ok.

His FBA is 30 milligrams per here and he is smoker who consumes about a pack of DBD per day.

And he done a physical and system general and systemic examination. It shows that he has no pillar or clubbing or (Refer Time: 02:35) and he is bilateral reputations of both the lungs and oxidation ma'am, otherwise serious is normal.

So, you done a thorough clinical examination of the patient. If you do any laboratory investigation of this patient before you initiate him on treatment.

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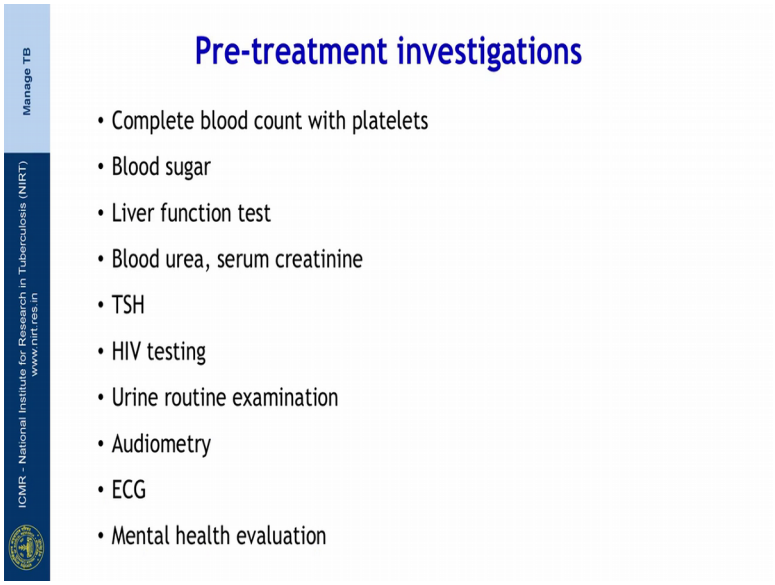

Ma'am I would ask for the complete blood count with platelets, his blood sugar levels are has to be monitored and then I would ask for the TSH and then urine routine and then I would ask for liver and renal functions test and then I will go for ELISA for HIV now.

Very good, we would also like to do an audiometry on this patient because the regime treatment regimen would consists of an aminoglycosides.

Yes ma'am.

We will also ask for ECG.

Yes ma'am.

As we thinking of adding on fluoroquinolone also mental examination or evaluation of first mental status before we put him on treatment; now, assuming all the results come back as normal. So, how do you plan to treat this patient?

Ma'am, since this patient is sensitive to both fluoroquinolones and aminoglycosides.

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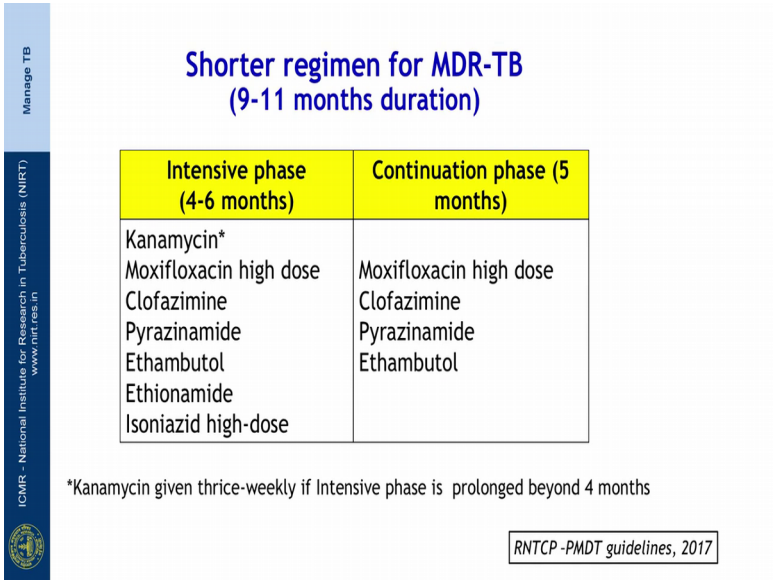

This patient will have a treatment for shorter duration of 9 to 11 months with 4 months of intensive phase consisting of kanamycin, moxifloxacin high dose, high dose clofazimine and pyrazinamide ethionamide and ethambutol and with continuation phase of five months consisting of high dose moxifloxacin clofazimine pyrazinamide and ethambutol.

Very good yeah. So, this patient would be an IT candidate for a shorter course of MDR TB.

Yes ma'am.

As in our other regimens of 24 months duration as got the biggest drawback is a long duration of treatment for this patient.

Yes ma’am.

So, before you initiate him on treatment we do give some other advice or any anything else that you would want to talk to the patient about?

Ma’am, since this patients admitted for a longer duration of 9 to 11 months, I would a council him prior to the treatment.

Decision I would personally tell him about the nature of disease.

Correct.

And the cause of this disease because that is the prior treatment default

Correct.

And then I would tell him about the side effects of the MDR TB drugs.

And ask him to report immediately if he develops any one of them.

Correct.

I will also tell him about the adherence to the treatment is necessary.

Ok.

And I will I will council his family members regarding the adherence to the treatment and also screen them for presence of TB ma’am.

Good, we would also like to council him about alcohol and smoking.

Yes ma’am.

So, (Refer Time: 05:07) from smoking was advisable also talk to him about his habit with alcohol, his blood sugar has to be under control. So, the counseling should also include advice about diabetic management.

Yes ma’am.

Now, do you started this patient on a shorter course MDR regimen, how do you plan to follow up this patient?

Ma’am his sputum smear has to be (Refer Time: 05:26) acid first bacilli on monthly basis and then.

The during the on intensive phase and during the continuation phase it has to be done on a quarterly basis and then the liver function tests and renal function test have to be done periodically, chest x-ray has to be done at the end of intensive phase and also at the end of continuation phase ma’am.

Very good. So, periodic monitoring of the patient is very required and during every visit you also ask him about the presence or absence of adverse events to these drugs.

Yes ma’am.

So, we also consider any other modality of treatment in this patient?

Ma’am I think surgical resection is doing ma’am.

So, you are considering surgery in this patient. For this patient surgery may not be a good option because a disease seem both sides of the lung, it spread bilaterally. Surgery is a good option when your disease is restricted to single lung unilateral disease. Now, what if this patient in his investigation and shown resistance to fluoroquinolone and kanamycin?

Ma’am I think this patient will become an XDR TB patient.

And so, do you know the treatment for XDR TB case?

XDR, I do not know ma’am.

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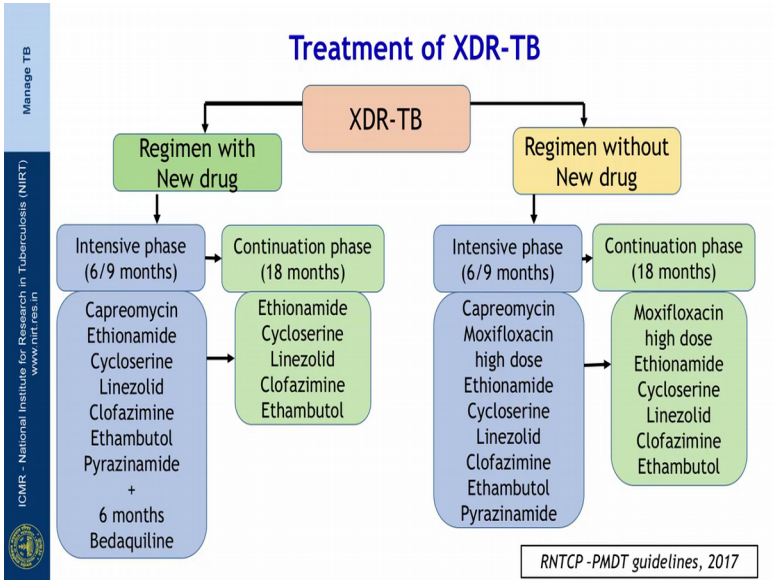

XDR TB treatment is for a longer duration, we can make a regimen with a new drug or in the absence of new drugs we can make a regimen without the new drugs. So, regimen with a new drugs will be for period of 24 months, 6 to 9 months of intensive phase followed by 18 months of continuation phase. The intensive phase consist of capreomycin, ethionamide, cycloserine, linezolid, clofazimine, ethambutol and pyrazinamide, to be followed 18 months of continuation phase with ethionamide, cycloserine, linezolid, clofazimine and ethambutol.

In the absence of newer drugs regimen can also be made similarly for a period of 24 months, intensive phase of 6 month consisting of capreo, high dose, moxi, ethionamide, cycloserine, linezolid, clofazimine, ethambutol and pyrazinamide. That would be followed by 18 months of high dose, moxi, ethionamide, cycloserine, linezolid, clofazimine and ethambutol.

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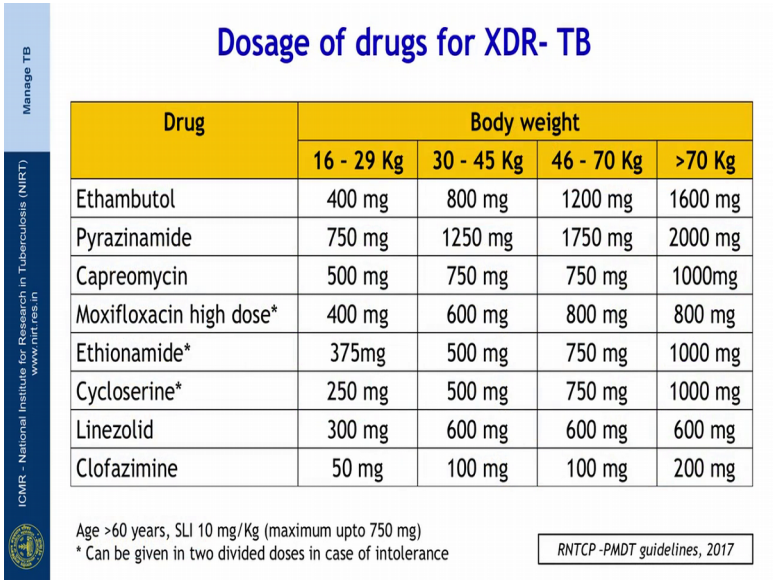

The dosing of these drugs depends upon the body weight of the patient and the guidelines gives you a weight band and based on the weight band the drugs can be used.

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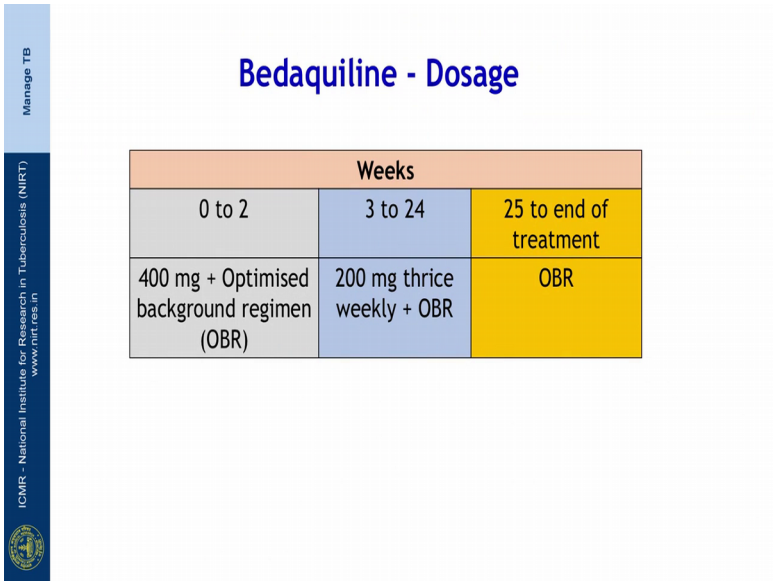

For bedaquiline, the dosage is for a period of 6 months. The first 2 weeks 400 milligrams to be given daily along with the optimized background regimen. For the remaining 3 to 24 weeks it is 200 milligrams 3 times a week along with the optimized background regimen.

At the end of 6 months bedaquiline would be stop and the rest of the drugs will be continue for a period of 24 months. Now, can you very briefly summarize the treatment of management of an MDR or XDR TB patients?

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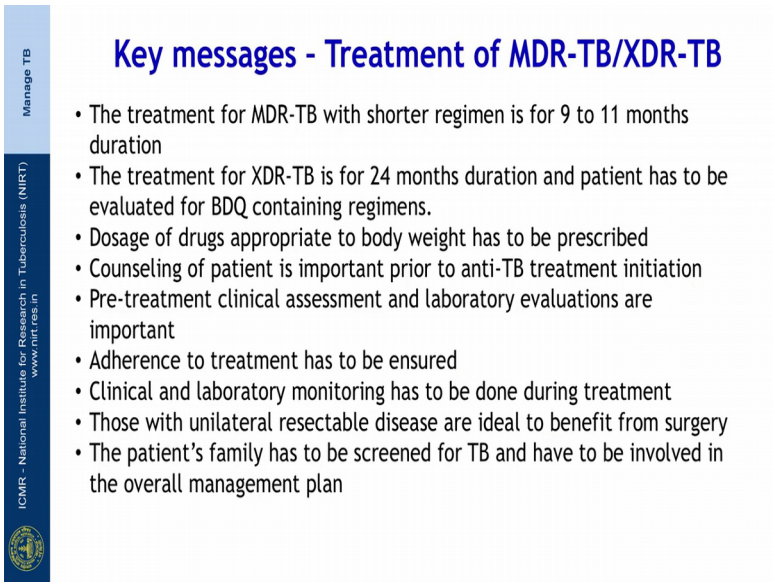

Yes ma'am, the treatment for MDR TB with shorter regimen is for 9 to 11 months duration. The treatment for XDR TB is for 24 months duration and the patient has to be evaluated for bedaquiline containing regimen. Dosage of the drug has to be appropriate according to the body weight.

Counseling of the patient is important prior to anti TB treatment initiation. Pre-treatment clinical assessment and laboratory evaluations are important. Adherence to treatment has to be ensured. Clinical and laboratory monitoring has to be done during treatment. Those with unilateral respectable disease are ideal to benefit from surgery. The patient's family has to be screened for TB and have to be involved in the overall management plan.