

## FREQUENTLY ASKED QUESTIONS ON TUBERCULOSIS

- 1) My patient has smear positive pulmonary tuberculosis (>50/L); do I need to admit him for treatment?

**NO, although he is smear-positive TB, you can treat him in your out-patient clinic** if he is stable otherwise. Once you start TB drugs, he will become less infectious every day. Simply advise him to continue taking treatment and practise universal precautions (wear a surgical mask when he coughs, talks or sneezes).

- 2) What is the difference between sputum AFB >50/L and sputum AFB 2/3L?

Sputum AFB >50/L means more than 50 AFBs are seen on **one line** on the slide under microscope. 2/3L means only 2 AFBs are seen on **3 lines** on the slide. **The letter L does not stand for litre.** Obviously >50/L is more infectious than 2/3L and you can use this result to monitor your patient progress while on TB treatment.

- 3) What category of TB patient is infectious?

Only pulmonary tuberculosis (TB of lung parenchyma) is infectious in the following order:-

**Smear positive case – very infectious**

Smear negative but culture positive – less infectious

Smear negative and culture negative – not infectious

All extra pulmonary TB are essentially non-infectious

- 4) When does a smear positive TB patient become non-infectious?

As a general rule, if the AFB germs are sensitive to the first line TB drugs, the patient will be non-infectious after **one month of treatment.**

- 5) Can a TB patient be allowed to travel by air?

TB patients who are known to be **smear-positive** should **not be advised to travel by air** as they could transmit the infection to other passengers. They should wait for **at least one month.** **Extrapulmonary TBs (e.g. lymph node, pleural space etc) do not pose significant hazards if they travel by air.**

- 6) When is it mandatory to admit a TB patient to the ward?

Admit your patient if he develops complications such as **massive haemoptysis** or **pneumothorax**, if you suspect your patient will be **non-compliant** to treatment, poor family support or no proper home. **TB involving vital organs** such as the brain, heart, adrenal glands, kidneys, spine etc also needs admission.

7) When do I discharge a TB patient from my ward?

You can discharge your patient after **5 days** of treatment if he tolerates anti-TB drugs, blood results are normal and you are satisfied with compliance after counseling. **THERE IS NO NEED TO KEEP TB PATIENTS IN THE WARD TILL THEY ARE SMEAR NEGATIVE OR DO DAILY SPUTUM AFB IN THE WARD. IT WILL TAKE AT LEAST ONE MONTH BEFORE SPUTUM AFB BECOMES NEGATIVE. Advise your patient to wear a surgical mask upon discharge to minimize transmission to his family at home while he is taking TB treatment.**

8) When do I need to consult a respiratory physician before starting TB treatment?

If the case is smear positive, you do not need to consult a respiratory physician. However, if the case is 'smear negative' or atypical in presentation, you have to consult a respiratory physician since other conditions such as bronchiectasis or lung cancer need to be excluded. **YOUR PRIORITY IS ALWAYS TO TREAT SMEAR POSITIVE PTB CASES.**

9) What is the duration of treatment for TB lymphadenitis?

At least 9 months.

10) What is the duration of treatment for other extra pulmonary TB?

Should be **longer than 9 months** since it is difficult to assess response to treatment in extra pulmonary TB unlike pulmonary tuberculosis where you can use chest X-ray. The duration is **not fixed** and you have to use clinical judgment to decide the duration of treatment. **The longer the duration of treatment, the less chance of relapse.**

11) Am I allowed to give a trial of anti-TB treatment (empirical anti-TB treatment)?

**Not advisable**, you must discuss the case with a respiratory physician before giving a trial of anti-TB drugs. When you give a trial of anti-TB drugs, the case still needs to be notified and registered as the treatment outcome will be analysed.

12) When do you give Isoniazide prophylaxis and what is the duration of prophylaxis?

Isoniazide prophylaxis is a controversial issue but Isoniazide prophylaxis is given in only 2 conditions (i) children under 5 years old who are contacts of smear positive cases with positive Mantoux AND (ii) HIV positive patients with positive Mantoux. The duration of prophylaxis is between 9 months to 1 year. **IT IS IMPORTANT TO EXCLUDE ACTIVE TUBERCULOSIS BEFORE YOU GIVE PROPHYLAXIS. IF YOU GIVE PROPHYLAXIS IN A PATIENT WITH ACTIVE TUBERCULOSIS, HE WILL DEVELOP RESISTANCE TO ISONIAZIDE.**

13) Is ESR a useful tool in the diagnosis and follow up of TB patients?

**NO, ESR is very non-specific for diagnosis and follow-up of TB patients. NEVER ORDER ESR AS PART OF TB WORK-UP.**

14) Is Mantoux test useful to diagnose reactivation of TB? Do I still do Mantoux test if sputum AFB is already positive?

**NO, Mantoux test is not useful to diagnose active TB in someone who has a history of TB in the past. You need not do Mantoux test if sputum AFB is already positive and you can start TB treatment without further delay.**

15) How do you diagnose extra pulmonary TB?

Many extra pulmonary TB (pleural effusion, lymph node, pericardium, and spine) should be confirmed by biopsy since **malignancy is a very important differential diagnosis**. Most pleural effusion cases should undergo **pleuroscopy**. Some cases of pleural effusion or empyema may have to undergo VATS or thoracotomy by cardio-thoracic surgeons.

16) Can I use Rifampicin to treat non-tuberculous bacterial meningitis?

**NO**, it is not advisable to use Rifampicin to treat non-tuberculous bacterial meningitis because TB is very prevalent in Sabah. Early TB meningitis may be mistaken for bacterial meningitis and vice versa. This practice could lead to resistance to Rifampicin.

17) Why is it important to prevent defaulters of TB treatment?

Defaulting treatment is one of the causes of multi-drug resistant TB. **There is no really effective drug to treat multi-drug resistant TB at present**. We may not be able to eradicate TB but we have to ensure that the TB germs are sensitive to our first line TB drugs all the time. This can be achieved by preventing defaulters.

18) What is the best treatment for multi-drug resistant TB?

The best treatment for multi-drug resistant TB is **PREVENTION** by good management and **preventing defaulters**.

19) Why is it important to give correct dosage of anti-TB drugs?

**Inadequate dosage will lead to resistance** and over dosage could cause side-effects.

20) Are the second line TB drugs effective in treating multi-drug resistant TB?

**NO**, they are not effective drugs and that is why treatment duration is much longer. **PREVENTING MULTI-DRUG RESISTANT TB IS BETTER THAN TREATING MULTI-DRUG RESISTANT TB.**

**21) My patient develops mild pruritus or mild skin rash after initiation of TB treatment, what should I do?**

If it is just pruritus or very mild skin rash, reassure the patient and give symptomatic treatment; it is better to continue with the TB drugs and advise the patient to come back if it gets worse. You can also give symptomatic treatment for mild gastro-intestinal upset.

**22) My patient develops severe skin rash with anti-TB drugs; what should I do?**

Stop the TB drugs and review the patient regularly till the rashes subside. Then you start drug challenge (one drug at a time). The first drug you give is Isoniazide; **please give full dose (based on patient's body weight)** on the first day followed by full dose of Rifampicin, Pyrazinamide, Ethambutol and or Streptomycin if necessary. **Do not give low dose on day 1 and then increase gradually on day 2 and so on. The idea is to identify the offending drug.** After you have identified the offending drug, please consult a respiratory physician for further advice.

**23) My patient has raised liver enzymes; can I give anti-TB drugs?**

You can give anti-TB drugs if the liver enzymes are only **twice** elevated but if the enzymes are more than three times the normal limit, you have to wait till they normalize. Please consult a respiratory physician if you are not sure of what combinations to use. If the patient develops hepatitis secondary to anti-TB drugs, you have to stop the treatment and wait till the hepatitis resolves. You may do **re-challenge** using the above principles to identify the offending drug causing hepatitis. **Pyrazinamide** is usually the most common drug giving rise to hepatitis in Malaysia. Once you have identified the offending drug, please consult a respiratory physician. **Giving lower dosage of anti-TB drugs is NOT the way to prevent hepatitis as this can lead to resistance. Where patients are very ill and smear positive with severe hepatitis, I will advise you the alternate regimen to use. Please consult a respiratory physician if you face this scenario.**

**24) My patient develops jaundice while taking anti-TB drugs; what do I do?**

**Stop all TB drugs and refer the case to a respiratory physician.**

**25) My patient who was initially smear positive (>50/L) is still smear positive but improved (2/3L) after 2 months of intensive treatment; what should I do?**

You can switch to maintenance phase of biweekly or better still three times a week treatment **if your patient is clinically and radiologically improving.**

**26) My patient who was initially smear positive (>50/L) is still smear positive (>50/L) after 2 months of intensive treatment and chest X-ray has not improved; what must I do?**

Your patient could have either **drug-resistant TB** or **atypical mycobacterial infection**. These two are not easy to distinguish from direct smear only. Please send the sputum for **AFB culture**. You should get the AFB culture result after 2 months and then let me know the results so I can advise you.

**27) Am I allowed to prescribe second-line anti-TB drugs?**

**NO**, you must discuss the case with a respiratory physician.

28) My patient has TB but she is pregnant, are the TB drugs safe in pregnancy?

Just give EHRZ. **Streptomycin is contraindicated in pregnancy.**

29) My patient has TB but has renal failure; what regimen do I give?

Just use **HRZ** regimen and **prolong** the duration of treatment. Streptomycin and Ethambutol are contraindicated in renal failure. If you are unable to give HRZ for any reasons, consult a respiratory physician.

30) Do I have to monitor FBC, LFT, BUSE and ESR regularly during follow up of TB patients?

It is **not necessary** at all to do routine FBC, BUSE, LFT and ESR on follow up. You can **assess your patients clinically** for clinically significant hepatitis or response to treatment. You have to do chest X-ray and sputum AFB times 3 for all cases of pulmonary tuberculosis.

31) After diagnosing and starting anti-TB drugs, when do you review your patient in the out-patient clinic?

After **one to two weeks** to ensure your patient does not have side-effects to treatment. If all is well, then you review him again after 2 months of treatment and then every 2 months till completion of treatment.

32) Do I have to follow up my patients who have been cured of TB?

Follow up is optional. You can give PRN appointment only. It is **not necessary to follow up patients who have completed treatment** unless you strongly suspect your patient may relapse (e.g. HIV positive patients).

33) After 2 months on TB treatment, I realized the patient's chest X-ray is not improving and may have lung cancer; what should I do?

Stop TB treatment and refer to a respiratory physician immediately.

34) Can I order a CT thorax to diagnose active tuberculosis and is CT thorax reliable to diagnose active TB?

**NO. CT thorax is not reliable in making a diagnosis of active TB.**

35) The result of AFB culture of my patient shows resistance to the first line drugs or atypical mycobacteria (Runyon classification); what should I do?

Email (my email address is: drjazizi@sbh.moh.gov.my) the patient's particulars and culture results to me and I will advise you accordingly.

36) My patient has TB and he is HIV positive; which one do I treat first or do I treat both? Do you give daily or three times a week treatment in the maintenance phase in HIV positive patients?

If it is early HIV, then I suggest he complete the TB treatment first; then refer to the infectious disease team for HAART. In advanced HIV obviously, the patient needs both TB drugs and HAART. There is a need for close liaison between the TB and HIV doctors in view of the drug interaction. It is preferable that you give daily regimen in the maintenance phase.

37) Can I give Isoniazide prophylaxis if my patient receives high dose steroids?

**NO. DO NOT GIVE ISONIAZIDE PROPHYLAXIS JUST BECAUSE YOUR PATIENTS TAKE IMMUNOSUPPRESSIVE DRUGS.**

38) Can I give only two drugs (Isoniazide and Rifampicin) in the intensive phase to treat TB?

NO. Although we do not allow monotherapy to treat TB, giving two drugs only is not adequate in the intensive phase.

39) Is contact tracing important and how far do you go to trace contacts?

It is only important for **smear positive** PTB cases. We should focus more on **defaulter tracing** as this is a potential source of resistant TB. You should focus on close contacts (under the same roof) only as it is not possible to screen the entire neighbourhood.

40) Can I use daily regimen rather than three times a week regimen in the maintenance phase?

Yes you can do. The most important thing is **COMPLIANCE**.

41) What is the re-treatment regimen for relapsed TB cases (cured of TB in the past and now AFB smear is positive again)?

WHO recommends 2 months of SEHRZ, 1 month of EHRZ and 5 months of EHR ALL DAILY. **Please send sputum for AFB culture** and sensitivity in all relapsed PTB cases to ensure no resistant TB. Please trace and review the AFB culture result after 2 months.

42) Is pleural effusion due to TB considered pulmonary tuberculosis?

NO, it should be classified as **extra pulmonary TB** since it is in the pleural space.

43) Is miliary TB considered pulmonary tuberculosis?

NO, it is a form of **extra pulmonary tuberculosis**.

**44) Is exudative lymphocyte predominance pleural effusion diagnostic of TB?**

NO, this is a very common belief that exudative lymphocyte predominance pleural effusion is diagnostic of TB. This can also occur in malignancy such as adenocarcinoma or lymphoma. Such cases should undergo further investigations e.g. pleuroscopy and bronchoscopy.

**45) If bronchoscopy shows no mass, does it rule out malignancy and can I safely give TB treatment?**

No, it does not rule out malignancy. Your patient may require autofluorescence bronchoscopy, transbronchial needle aspiration via rigid bronchoscopy, CT-guided FNAC or VATS (Video-assisted thoracoscopic surgery).

**46) My patient has empyema; is it due to TB?**

Empyema can be due to either bacteria or TB. Usually AFB is positive in a case of TB empyema. You may also have to consider **chylous effusion** which may appear like empyema. Empyema needs proper drainage by chest tube or if necessary **thoracotomy** and **decortication** by a thoracic surgeon.

**47) Do I do routine chest X-ray during follow up of my patients with extrapulmonary TB?**

Extrapulmonary TB such as **pleural effusion** and **miliary TB** need serial chest X-ray during follow up but other forms such as spinal TB, renal TB and adrenal TB do not need chest X-ray unless there is lung involvement. Furthermore, they may require other imaging modalities such as MRI, abdominal CT etc during follow up.

**48) What are the '10 principles' of TB management?**

The '10 principles' are: **NEVER ADD A SINGLE DRUG TO A FAILING REGIMEN** (repeat this 10 times and it becomes the '10 principles'). A single drug in a failing regimen is as good as monotherapy and this will lead to resistance to that drug.

**49) How do I improve yield of sputum production of my patient who cannot produce sputum for AFB examination?**

Try using **3% saline via nebuliser** to induce sputum. The protocol is available on the respiratory department website ([www.jknsabah.gov.my/hospital/hqe/respiratori](http://www.jknsabah.gov.my/hospital/hqe/respiratori)). Your staff should wear a personal respirator such as N95 mask when inducing sputum by 3% saline.

**50) Where do I perform induced sputum for AFB using 3% saline?**

The procedure should be performed in a **designated well ventilated** area or room and **not at the patient bedside or in an open ward** as this could spread the potentially infectious air droplets to ward staff and other patients.

**51) How effective is BCG vaccination in preventing TB?**

BCG vaccination has been proven to be effective in reducing the risk of miliary TB and TB meningitis in children. It is not effective in preventing TB in adults. We are waiting for better TB vaccines in future.

52) What is your most important advice about TB management?

**PREVENT DEFAULTERS.**

53) How do you give intrapleural streptokinase in a case of empyema thoracis?

Intrapleural streptokinase is given for 3 days at a daily dose of 250,000 units (mixed with 100 mls of normal saline). Clamp the chest tube for 2 to 4 hours after instillation of streptokinase. Suction at 20 cm H<sub>2</sub>O is applied to further improve empyema drainage.

54) Do I have to request visual acuity routinely for all patients on TB treatment?

**Not routinely.** You can just review your patient in a week and advise him to stop treatment immediately if his vision is blurred as **early optic neuritis is reversible if Ethambutol is stopped immediately**. Obviously there is **no need to do visual acuity if you do not give Ethambutol from the beginning**. The incidence of Ethambutol-induced optic neuritis is actually very low. Even Isoniazide could cause optic neuritis.

55) Is steroid useful in tuberculous pleural effusion?

No. I would not advocate steroid in tuberculous pleural effusion. A Spanish study and a report from South Africa showed no benefit of steroid in tuberculous pleural effusion. It is **more important to achieve early complete drainage of the pleural effusion to prevent residual pleural fibrosis**.

56) The chest X-ray shows cavities and extensive infiltrates suggestive of PTB but sputum AFB by 3% saline is negative for AFB, can I start TB treatment?

Not always. The basic principle is **sputum AFB should be positive if chest X-ray shows cavities or extensive infiltrates**. If AFB is negative, you have to consider non-infective causes such as lung cancer, Wegener's granulomatosis, organizing pneumonia etc.

57) When do I request for AFB culture?

If you suspect TB but the smear is negative, in **relapsed TB** or when the **smear is persistently positive** (i.e. you suspect **resistance** or **atypical mycobacteria**).

58) Who should treat extrapulmonary TB (bone, abdomen, kidneys etc)?

The **respective department** (surgical, orthopaedics, urology etc) must start TB treatment and follow up patients till completion of treatment. There is no need to refer to the respiratory team since you can follow the National TB Guidelines. **You certainly can call the respiratory team if there is any issue that you cannot handle.**

59) What is the role of the respiratory clinic at Queen Elizabeth Hospital in TB management?

We function as a **specialist TB clinic** i.e. we see **complex cases** that cannot be managed by non-respiratory physicians (e.g. atypical mycobacteria, MDR-TB, second line treatment, diagnosis in doubt etc). The majority of TB cases are straightforward and can be managed by non-respiratory physicians and medical officers.

**60) When do I request bronchoscopy/pleuroscopy?**

You must **rule out active TB** first by doing proper **induced sputum for AFB using 3% saline**. If 3 specimens of induced sputum are negative for AFB, admit your patient to the respiratory ward and we will decide whether to proceed with bronchoscopy or pleuroscopy. **Sometimes, after reviewing the chest X-ray and the patient, we may not proceed with bronchoscopy or pleuroscopy if we feel your patient has TB and we will send him back to you to start anti-TB treatment.**

**61) What is new about TB treatment?**

**Fixed dose combinations** of first line drugs (4 in 1) are now available. These preparations will certainly improve patient compliance but need to be prescribed only by those trained in it.

We also encourage you to use three times a week regimen rather than biweekly regimen as advised by WHO. **The three times a week regimen is as follows:**

Isoniazide: 10mg/kg body weight

Rifampicin: 10mg/kg body weight


Pyrazinamide: 35mg/kg body weight

Streptomycin: 15mg/kg body weight

Ethambutol: 30mg/kg body weight

**Please do not exceed the maximum dosage for each drug (refer to National TB Guidelines)**

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