

### Supplementary file 1: the 15 questions used in the pre- and immediate post-training tests

1. Which of the following statement(s) is false
  - A. Intrinsic drug-resistance refers to the innate ability of a bacteria species resistant to an antimicrobial drug
  - B. Intrinsic drug-resistance refers to primary drug-resistance
  - C. Mycobacterium bovis has intrinsic resistance to pyrazinamide
  - D. Primary resistance is caused by disease transmission
  - E. Acquired resistance refers to drug resistance obtained during treatment
  
2. About the implementation of national TB prevention and treatment guidelines, please listen to each of the following statement and decide whether it is true or false?
  - A. Fixed dose combination (FDC) agent can avoid monotherapy
  - B. It is important to reduce inadequate treatment of TB by private sector
  - C. Free TB treatment is recommended for TB patients
  - D. It is always the best choice in any circumstances to develop an individualized treatment plan based on the results of drug susceptibility tests.
  - E. Must provide direct observation of treatment
  
3. Which of the following is the definition of extensively drug-resistant TB (XDR-TB)?
  - A. MDR-TB and resistance to at least three drugs in among 6 injectable second line drugs
  - B. Resistance to all first line drugs
  - C. MDR-TB and resistance to quinolone drugs and all injectable drugs
  - D. Resistance to all first line drugs and quinolone drugs and at least one injectable second line drug
  - E. MDR-TB and resistance to one of the quinolone drugs and one injectable second line drug
  
4. Which of the following diseases has the highest risk of developing resistance under inadequate treatment?
  - A. Extrapulmonary tuberculosis
  - B. Tuberculous meningitis
  - C. Cavitory tuberculosis
  - D. Tuberculosis in pediatric patient
  - E. Smear-negative tuberculosis
  
5. Which of the following statement is false regarding MDR-TB?
  - A. Transient drug-resistance does not affect treatment outcomes, thus there is no need to change treatment regime
  - B. Drug-resistance in new cases indicates the prevalence of primary drug-resistance
  - C. Drug-resistance in new cases can be used to assess recent disease transmission
  - D. Drug-resistance in retreatment cases can represent true acquired resistance
  - E. The proportion of drug resistance in all tuberculosis cases can be used to estimate the drug resistance level in the community
  
6. Which of the following groups of patients is most likely to develop MDR-TB?
  - A. Recurrent TB patients
  - B. HIV-infected patients with severe immunodeficiency
  - C. Patients who were retreated after loss of follow-up
  - D. New patients who failed class I treatment
  - E. Retreated patients who failed class II treatment
  
7. Regarding drug-resistance of mycobacterium tuberculosis, which of the following statements is true?
  - A. Multidrug-resistant phenotype is the result of continuous accumulation of mutations in different genes

- B. It has been reported that a specific single mutation may also lead to MDR-TB
  - C. Isoniazid is less effective in preventing the emergence of drug resistance in combination drugs
  - D. Pyrazinamide works well in preventing drug resistance in combination drugs
  - E. A, B and D are correct
8. A new TB patient who received 5-month standardized type I TB treatment gets smear positive results, which of the following explanation is possibly true?
- A. Non-tuberculosis mycobacteria
  - B. MDR-TB
  - C. Susceptible to all drugs
  - D. Dead bacteria, patient will cure eventually
  - E. All of the above explanations are possible
9. Which of the following statement is true?
- A. Chest X-ray can be used as a reliable method to differentiate TB from pneumonia
  - B. The radiological manifestations of drug-resistant tuberculosis are very different from those of drug-sensitive tuberculosis
  - C. The history of anti-tuberculosis treatment is not as important for treating drug-resistant tuberculosis as drug sensitivity test
  - D. Fluoroquinolone can be used to treat pneumonia without any risk of developing fluoroquinolone-resistant tuberculosis
  - E. A,B,C,D are all false
10. Which of the following statement is true?
- A. Bacterial strain identification is not suitable for MDR-TB diagnosis
  - B. All laboratory MDR-TB diagnosis should include culture
  - C. The molecular diagnostic test for isoniazid resistance has very high sensitivity
  - D. The molecular diagnostic test for rifampin resistance has very high specificity
  - E. Both C and D are true
11. Which of the following gene mutations in mycobacterium tuberculosis is related to rifampicin
- A. katG
  - B. inhA
  - C. ahpC
  - D. rpoB
  - E. A, B and C
12. About drug susceptibility testing, please listen to each of the following statement and decide whether it is true or false?
- A. All countries should carry out all first line and second line drug susceptibility testing for presumptive MDR-TB patients
  - B. The drug susceptibility test results of isoniazid and rifampicin are more reliable than other drugs
  - C. For second line drugs, the test result of ethionamide is reliable, and thus should be used regularly in the diagnosis and treatment of MDR-TB
  - D. Among the second line drugs, drug susceptibility test results of fluoroquinolones are not reliable
  - E. A, B and C are true
13. Which of the following statements about the treatment of MDR-TB is false?
- A. Standardized treatment can be used for MDR-TB patients who have not previously received second-line medications
  - B. Fluoroquinolone plays an important role in the treatment of multidrug-resistant tuberculosis

- C. Intravenous medicines such as kanamycin or capreomycin must be included in the treatment regime
  - D. Ethambutol and pyrazinamide can also be included in MDR-TB treatment regime
  - E. Isoniazid is not effective for treatment of MDR-TB
14. About the WHO recommendations for the treatment of MDR-TB in 2008, please listen to each of the following statement and decide whether it is true or false?
- A. The treatment plan should include at least 4 drugs, and the efficacy of the drugs should be confirmed
  - B. When deciding whether to use mesalazine and ethionamide in the individualized treatment plan, doctors should not rely on drug susceptibility test results
  - C. An injection should be used for at least 6 months and should be used for at least 4 months after sputum smear becomes negative
  - D. After sputum smear becomes negative, the shortest treatment course should be 18 months
  - E. All of the above statements are true
15. About the result of MDR-TB, please listen to each of the following statements and decide whether it is true or false?
- A. Patients who have been treated with second-line drugs in the past may be hard to cure
  - B. Patients with isolates resistant to fluoroquinolone may be hard to cure
  - C. Previous treatment with ofloxacin does not affect the outcome of MDR-TB
  - D. Loss to follow-up is one of the major challenges in the treatment of MDR-TB
  - E. None of the above statements are false