



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

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Recommendations for the Clinician – Treatment of Tuberculosis

Tuberculosis (TB) must be treated for a long time. Regimens must contain multiple drugs to which the organisms are susceptible. Treatment with a single drug can lead to the development of a bacterial population resistant to that drug. The addition of a single drug to a failing regimen can lead to resistance to that drug. When two or more drugs to which there is susceptibility are used simultaneously, each helps prevent the emergence of tubercle bacilli resistant to the others. Ensure adherence to therapy.

The initial phase of treatment is crucial. For most patients, the preferred regimen for treating TB disease consists of an initial 2-month phase of four drugs: Isoniazid, Rifampin, Pyrazinamide, and either Ethambutol or Streptomycin, followed by a continuation phase of Isoniazid and Rifampin for at least four months after conversion of sputum culture to negative. If culture positive at two months with cavitation, nine months of total treatment is recommended.

Two, three or four-drug regimens depend upon:

1. Sputum results;
2. Extent of disease on chest radiograph;
3. Medical status of patient; and
4. Risk of exposure to multi-drug resistant tuberculosis.

Naturally elderly, poor condition, and immunosuppression have more complications and need more medicine for a longer period of time. The response to treatment depends upon these three conditions and the adherence to therapy.

Follow-up bacteriologic examinations are important for assessing the patient's infectiousness and response to therapy. At a minimum, obtain specimens on three consecutive days at monthly intervals until the end of therapy. **Culture conversion is the most important *objective* measure of response to treatment.**

Treatment Recommendations

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Liver function studies are obtained to aid the physician and patient to minimize toxic complications of treatment. Regimens may need to be changed or stopped. Obtain baseline liver functions studies prior to initiating treatment. Monitoring for adverse reactions must be individualized. The type and frequency of monitoring should depend on the drugs used in a given regimen and the patient's risk for adverse reactions. At minimum, **patients should be seen monthly during therapy** and evaluated for drug toxicity even if no problems are apparent.

All **patients should be educated** about TB, the dosing of medications, the possible adverse reactions of the medications, and the importance of taking their medications.

Treatment may need to be altered by drug susceptibility studies. The Office of Laboratory Services (OLS) provide this service free of charge on all initial specimens received and if sputums have not converted to negative in three months, OLS should automatically perform drug susceptibilities again. **Drug susceptibilities are important** because if drugs the organism are resistant to are used, it will not only delay recovery, it may complicate it.

Inadequate treatment can lead to relapse, continued transmission, and the development of drug resistance. The local health department nurse can work with the clinicians to help patients adhere to a prescribed regimen by providing **directly observed therapy (DOT)** which has been adopted **as standard of care**. Studies have shown that it is not possible to determine who will adhere to therapy, so when **all patients** with TB are provided DOT, they will not be nor feel they are being treated prejudicially, and adherence to therapy can be assured. With DOT, medications may be dosed intermittently, reducing time commitment of both nurse and patient. Several options exist for intermittent regimens and can be found in CDC's "Core Curriculum on Tuberculosis, What the Clinician Should Know."

Multidrug-resistant TB (TB resistant to both Isoniazid and Rifampin) presents difficult treatment problems and requires expert consultation.

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Recommendations for Treatment of Latent TB Infection

Treatment of latent TB infection (LTBI) is essential to controlling and eliminating TB in the United States. Treatment of LTBI substantially reduces the risk that TB infection will progress to disease. **Careful assessment to rule out the possibility of TB disease is necessary before treatment for LTBI is started.**

Therapy should be started when the potential risks of TB exceed the risk of therapy. **A lot has been written about the need for chemoprophylaxis of the elderly. Time has demonstrated the risk of treatment may be greater than benefit by disease process and medication.**

Recommend getting a **baseline liver profile** prior to starting therapy. Monitor patients for adverse reactions, signs and symptoms of TB disease, and for adherence to therapy. Patients who do not know the current HIV status should be referred for HIV counseling and testing.

A nine-month regimen of Isoniazid is considered the optimal treatment regimen. It can be given twice-weekly if directly observed. Recommend giving Vitamin B6 with INH to reduce peripheral neuropathy. A new two-month RIF/PZA optional regimen has demonstrated greater risk of toxicity and should be limited to special circumstances and must be monitored closely.

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Signed _____
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