

Tuberculosis (Treatment)

Drugs are given in combination to prevent the emergence of resistance and to speed recovery. The advice of the British Thoracic Society and the Department of Health is that TB should be managed by experts. Thus, although it is reasonable to start therapy in a patient diagnosed as having TB, it is essential that the patient is referred as soon as possible to specialists in the hospital. For infection control precautions, see the [Infection Control Manual](#).

Treatment is divided into 2 phases. Despite NICE guidance, the routine use of ethambutol in the initial phase is **NOT** recommended in local guidelines.

Initial Phase

Un-supervised regimen.

DRUGS	DOSE	
	Adult ≥ 50 kg	Adult < 50 kg
* <u>Rifampicin</u>	600 mg	450 mg
* <u>Isoniazid</u>	300 mg	300 mg
<u>Pyrazinamide</u> (unlicensed)	2 g	1.5 g

*Give as Rifinah[®] (see below for dosing)

- For paediatric dosing advice consult Children's BNF, Ward Pharmacist or Medicines Information.
- Duration of treatment minimum 2 months. Pyrazinamide should not be stopped before this time or until results of sensitivity tests are available.
- Ethambutol may be included in the regimen at a dose of 15 mg/kg/day (maximum dose 1.5 g), if there is a high risk of drug resistance (e.g. previous failed treatment especially in immigrants and possibly in HIV). **Seek expert advice before commencing ethambutol.**

Continuation Phase

- Rifampicin dose as for 'initial phase' plus isoniazid dose as for 'initial phase'. Given as Rifinah[®].
- Duration: for a minimum of 4 months (total treatment course for respiratory TB minimum of 6 months i.e. initial plus continuation phase). Longer courses are necessary if there is a resistant strain or after any deviation from the above protocol.
- The total duration of therapy for non-pulmonary TB may be longer than 6 months – seek expert advice.
- For TB meningitis and brain abscess, pyrazinamide should be continued for total duration of the course – seek expert advice.

TB Meningitis

Add (to above treatment)

Prednisolone 50 mg – 75 mg PO 24 hourly (multiples of 25 mg).
Reduce dose according to expert advice.

Baseline Monitoring Requirements

Urine, glucose and protein
Weight
FBC, ESR
Ophthalmic examination (ethambutol only)

LFTs, albumin
Renal function
CRP

Prescribing Information

- Treatment should be supervised by Chest Physicians. (TB Clinic 4868/bleep 5120). All TB medication is best administered as a single daily dose, first thing in the morning, **half an hour before breakfast**.
- Pyridoxine is recommended as prophylaxis against isoniazid induced peripheral neuropathy at a dose of 25 mg daily (prescribed as half a 50 mg tablet).
- Combination products containing rifampicin and isoniazid are useful aids for compliance. The combination products and doses are listed below. Rifinah 300[®] and Rifinah 150[®] tablets should not be prescribed together!

Adult weight	Medication	Dose and frequency
≥ 50 kg	<u>Rifinah 300[®]</u> (= <u>Rifampicin</u> 300 mg + <u>Isoniazid</u> 150 mg per tablet)	2 tablets each morning
	plus <u>Pyrazinamide</u> 500 mg	2 g each morning
< 50 kg	<u>Rifinah 150[®]</u> (= <u>Rifampicin</u> 150 mg + <u>Isoniazid</u> 100 mg per tablet)	3 tablets each morning
	plus <u>Pyrazinamide</u> 500 mg	1.5 g each morning

- Do NOT use Rifater.
- Specialist treatment counselling is available through the pharmacy and the TB Clinic.
- A patient information booklet entitled – ‘Treatment of Tuberculosis (TB) – Your Questions Answered’ is available from the TB Clinic.
- Directly Observed Therapy (DOT) can be arranged if compliance problems occur.
- Seek expert advice for the treatment of TB meningitis.
- Additional contraception is required if rifampicin is used with oral contraceptives, as contraceptive failure can occur.
- Soft contact lenses may be stained by rifampicin dye.
- Consider other significant drug interactions, e.g. anticonvulsants, anticoagulants.

Hepatic Reactions to Treatment

- Mild hepatic reactions (‘transaminitis’) may be ignored. Modest elevations are frequently seen in the first two months of therapy. The LFTs usually return to baseline after a couple of months. Treatment is continued and uninterrupted.
- Severe hepatitis with anorexia, nausea and vomiting indicate stopping all treatment temporarily.
- For seriously ill patients, treatment may be re-established with streptomycin and ethambutol (caution with monitoring and renal failure).
- Treatment is re-introduced with isoniazid first, followed by rifampicin. The re-introduction varies depending whether treatment is for an in-patient or out-patient. Contact Microbiology or TB clinic for further information. LFTs are monitored daily (in-patient) or weekly (out-patient).
- Once treatment is re-established on isoniazid and rifampicin, do not re-introduce pyrazinamide but use ethambutol instead as the third anti-tuberculosis drug (for a minimum of two months until organism sensitivities are available). The total regimen should then continue for 9 months from the date on which the three drugs are re-established.
- If problems occur with either isoniazid or rifampicin, then stop the offending drug and seek specialist advice on the further treatment of TB.
- Arthritis is a common reaction to any of the drugs. Pyrazinamide can precipitate gout. isoniazid can cause lupus erythmatosus syndrome and ‘bone pain’ may be a feature of the ‘flu’-like syndrome of rifampicin. Specialist advice is needed to deal with these side-effects.