STANDARD TREATMENT WORKFLOW (STW) Drug Sensitive-TB Treatment as per NTEP

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CITATION

Joshi RP, Mattoo SK. Drug Sensitive-TB Treatment as per NTEP. Journal of the Epidemiology Foundation of India. 2024;2(1Suppl):S247-S248.

DOI: https://doi.org/10.56450/JEFI.2024.v2i1Suppl.124

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	Department of Health Research Ministry of Health and Family Welfare, Government of India					
	Standard Treatment Workflow (STW) Guidelines for					
	DRUG SENSITIVE-TB TREATMENT AS PER NTEP					
	For all TB patients whether being treated in public or private sector, clinicians should follow Standards for TB care in India guidelines In NTEP, the principle of TB treatment (except confirmed DR-TB) is to administer daily FDC of 1st line ATT in appropriate weight bands, under direct observation For patients being treated in private sector, FDCs may be provided by NTEP whenever requested					
Regimen for Drug-Sensitive TB cases: 2HRZE/4HRE						
	 This regimen is for H & R sensitive TB cases and cases where the sensitivity pattern can not be established Treatment is given in two phases: Intensive phase consists of 8 weeks (56 doses) of isoniazid (H), rifampicin (R), pyrazinamide (Z) and ethambutol (E) given under 					

 Intensive phase consists of 8 weeks (56 doses) of isoniazid (H), rifampicin (R), pyrazinamide (Z) and ethambutol (E) given under direct observation in daily dosages as per weight band categories
 Continuation phase consists of 16 weeks (112 doses) of isoniazid, rifampicin and ethambutol in daily dosages. Only pyrazinamide will be stopped in the continuation phase. The CP needs to be extended upto 24 weeks in certain forms of TB like CNS TB,

			CP needs to be extended upto 24 weeks in e treating physician may extend on case to							
Regimen for DS-TB Drugs Doses		IP 2 HRZE 56		CP 4 HRE 112						
					ADULT TB TREATMENT					
					Drug dosages Drugs	for first-line anti- TB drugs Doses		Special considerations for Adult TB Meningitis	Special considerations for Adult abdominal TB	
	5 mg/kg daily (4 to 6 mg/kg 10 mg/kg daily (8 to 12 mg/kg 25 mg/kg daily (20 to 30 mg 15 mg/kg daily (12 to 18 mg/ 15 mg/kg daily (15 to 20 mg, ninistered only in certain situati	kg) g/kg) /kg) /kg) ions,	Intensive Phase: 2 months of RHZE or RHZS Continuation phase: 3 drugs-RHE for at least 10 months* STEROIDS Preferably Dexamethasone 0.4 months*	Extend duration of treatment in cases of inadequate response Refer for surgical management for complications [intestinal obstruction (due to strictures), perforation] Consider endoscopic dilatation for						
replaced due to ADR	if any first line drug need to be as per weight of the patient given at a dosage of 10 mg pe		mg/kg/day intravenously in 3-4 divided doses during hospital stay) If not feasible, give oral	treatment for accessible strictures • Refer for biliary drainage in case of						

Dexamethasone 0.4 mg/kg/day in

Number of tablets (FDCs)

 Refer for biliary drainage in case of Jaundice due to biliary obstruction (hepatobiliary obstruction/pancreatic





Standard Treatment Workflow (STW) Guidelines for DRUG SENSITIVE-TB TREATMENT AS PER NTEP

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March/ 202:

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Regimen for DS-TB	IP	СР
Drugs	2 HRZE	4 HRE
Doses	56	112

ADULT TB TREATMENT Special considerations for Adult TB Meningitis

Special considerations for Adult

abdominal TB

Extend duration of treatment in

· Refer for surgical management for

(due to strictures), perforation]

Consider endoscopic dilatation for

treatment for accessible strictures

Refer for biliary drainage in case of

Jaundice due to biliary obstruction

Special considerations for intra-ocular TB

ATT: 2 months of RHEZ + 7 months

of RH depending on clinical response & side effects to treatment Add pyridoxine 10 mg/day

Corticosteroids : Topical steroids eye

drops for severe/anterior chamber

For treatment in children refer to

paediatrician Systemic corticosteroids for severe

inflammation in consultation with

inflammation

Uveitits expert

TB)

(hepatobiliary obstruction/pancreatic

complications [intestinal obstruction

cases of inadequate response

Drug dosages for first-line anti- TB drugs Drugs Dos Isoniazid (H) 5 mg/kg daily (4 to 6 mg/kg) Rifampicin (R)10 mg/kg daily (8 to 12 mg/kg)Pyrazinamide (Z)25 mg/kg daily (20 to 30 mg/kg) Ethambutol (E) 15 mg/kg daily (12 to 18 mg/kg) Streptomycin (S)* 15 mg/kg daily (15 to 20 mg/kg) Streptomycin is administered only in certain situations, like TB meningitis or if any first line drug need to be replaced due to ADR as per weight of the patient

Pyridoxine may be given at a dosage of 10 mg per day

	Number of tablets (FDCs)				
Weight category	Intensive Phase H: 75mg; R: 150 mg; Z: 400 mg; E: 275 mg)	Continuation Phase H: 75mg; R: 150 mg; E: 275 mg)			
25 to 34 kg	2	2			
35 to 49 kg	3	3			
50 to 64 kg	4	4			
65 to 75 kg	5	5			
> 75 kg	6	6			
containing to	combinations (FDCs) wo or more active ing or a particular indica	redients in fixed			

In NTEP, for Adults: 4-FDC (given in IP) consists of HRZE and 3-FDC (given in CP) consists of HRE

During treatment if weight of the patient increases by > 5 kg and crosses the next weight band then patient should be given the next higher weight band FDC drugs

Intensive Phase: 2 months of RHZE or RHZS Continuation phase: 3 drugs-RHE for at least 10 months* STEROIDS

Preferably Dexamethasone 0.4 mg/kg/day intravenously in 3-4 divided doses during hospital stay

If not feasible, give oral Dexamethasone 0.4 mg/kg/day in divided doses or oral Prednisolone 1 mg/kg/day in a single morning dose

Discharge on oral steroids on tapering doses for total duration of 8-12 weeks Regular follow up is essential every month for at least first 3 months & can be increased thereafter till treatment is stopped

Monitor liver function tests & any other features of drug toxicity

Observe for clinical improvement or any deterioration

Closely observe for development of any complications

*treatment duration may be increased in some cases as per the clinician decision

PAEDIATRIC TB TREATMENT

Paediatric cases are to be treated under NTEP in Special considerations fo Number of tablets (dispersible FDCs) daily dosages as per 6 weight band categories paediatric osteoarticular TB Children & adolescents up to 18 years of age Intensive phase Continuation phase Regimen : 2HRZE + 10HRE Weight Band Follow up every month during treatment & subsequently every 3 months: Potts spine with X-ray or MRI & Tubercular dactylitis or arthritis with plain weighing less than 39 kg, are to be treated using HRZ E HR E paediatric weight bands. Those weighing 50/75/150 100 50/75 100 more than 39 kg to be treated with adult 1 4-7 kg 1 1 weight bands. 2 8-11 kg 2 Available paediatric dispersible FDCs and loose 2 2 X-rav 12 -15 kg 3 3 3 3 1. Dispersible FDC, flavoured 16 - 24 kg Special considerations for paediatric Abdominal TB 4 4 4 · Rifampicin 75 mg + Isoniazid 50 mg + 3 + 1A 3 25-29 kg 3 + 1A 3 Pyrazinamide 150 mg Steroids- Not recommended 2+2A * 2 2 + 2A * 30-39 kg Rifampicin 75 mg + Isoniazid 50 mg Supportive treatment *A=Adult FDC (HRZE = 75/150/400/275; HRE = 75/150/275). It is added in higher weight band categories i.e. > 25 kg as these children may be able to cullour thehate 2. Dispersible Loose drugs Management of SAM/Malnutrition • Ethambutol 100 mg as per national guidelines Surgical treatment: Isoniazid 100 mg swallow tablets > Acute intestinal obstruction. Pyridoxine may be given at a dosage of 10 mg per day Bowel perforation Persistence of obstructive Drug dosages for first-line anti- TB drugs Special considerations for paediatric TB 7-15 mg/kg meningitis ATT for paediatric TB Meningitis > 2 HRZE and 10 HRE (in appropriate doses) Isoniazid (H) symptoms despite conservative (maximum dose 300 mg/day) management & ATT DO NOT start Empirical ATT with Rifampicin (R) . 10-20 mg/kg Corticosteroids > Prednisolone 2 mg/kg/day for 4 weeks & (maximum dose 600 mg/day isolated: Recurrent/Chronic abdominal pain without danger signs Pyrazinamide (Z) 30-40 mg/kg then taper over 4 weeks* Slower taper needed in some patients (maximum 2000 mg/day) 15-25 mg/kg Chronic diarrhoea without Ethambutol (E) *Equivalent do be used either se of another s injectable/oral ulation may proper evaluation (maximum 1500 mg/day) ABBREVIATIONS R: Rifampicin DR-TB: Drug resistant Tuberculosis H: Isoniazid ADR: Adverse drug reaction Streptomycin ATT: Anti-Tubercular treatment DS-TB: Drug sensitive Tuberculosis IP: Intensive phase CNS: Central Nervous system MRI: Magnetic Resonance imaging TB: Tuberculosis NTEP: National TB Elimination Programme E: Ethambutol SAM: Severe acute malnutrition **CP:** Continuation phase FDC: Fixed dose combination Z: Pyrazinamide

REFERENCES

1. National TB Elimination Programme, Central TB Division. Training modules for programme managers & Medical officers. Ministry of Health and Family Welfare, Government of India accessed at https://tbrindia.govin/index1.php?larg=1.6level=1.6sublinkd=9465&id=3540 on 24 February. 2022.
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