

STANDARD TREATMENT WORKFLOW (STW)

Paediatric Intrathoracic Tuberculosis

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Standard Treatment Workflow (STW) for the Management of PAEDIATRIC INTRATHORACIC TUBERCULOSIS (PULMONARY, PLEURAL, MEDIASTINAL) ICD-10-A15

WHEN TO SUSPECT?

- Documented, persistent unexplained fever for 2 weeks or more
- Unremitting cough for 2 weeks or more
- Unexplained documented weight loss of $\geq 5\%$ in last 3 months
- No weight gain despite adequate nutrition
- Unexplained loss of appetite
- Chest pain (specific to pleural effusion)
- Contact with TB patients in past 2 years


EXAMINATION

- Temperature, Weight, Mid Arm Circumference (MAC) Lymphadenopathy, cold abscess, discharging sinus
- Chest examination findings depend upon underlying pathology like consolidation, pleural effusion etc.

INVESTIGATIONS

Essential

- Chest x-ray
- TB suggestive: Hilar/ paratracheal lymph nodes, fibrocavitary disease, Miliary pattern
- Non Specific : effusion, consolidation, bronchopneumonia, other shadows etc.
- Sputum/Induced Sputum/Gastric Lavage/Aspirate /pleural fluid for NAAT
- Smear examination (if NAAT unavailable)
- If facilities exist, send aliquot of sample for culture, if NAAT negative for MTB
- Pleural tap*: Gross, Cytology, Biochemistry, NAAT, MGIT/LJ, ZN if NAAT not available
- *If can't be done at primary level then refer



Desirable

- Chest x-ray of family members

Optional (to be done in Institutions)

- CECT scan
- Pleural Biopsy
- Image guided (USG/CT) mediastinal LN biopsy
- Bronchoscopy & BAL

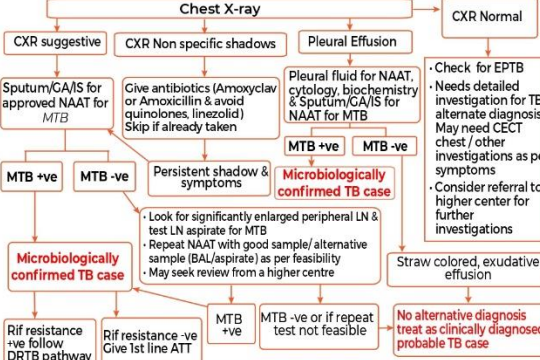
DO NOT DO

- TST/Mantoux test
- Overemphasized, supportive only
- Not to diagnose TB or to start ATT on basis of +ve TST ONLY
- Serological tests: IGRA (Quantiferon/Quantiferon-Gold etc)
- Pleural fluid ADA

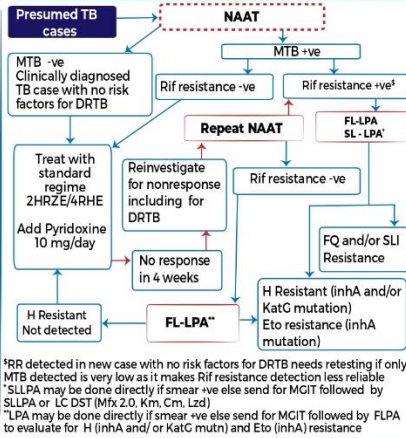
DIAGNOSTIC ALGORITHM

ALGORITHM FOR PAEDIATRIC INTRATHORACIC TB AMONG CHILDREN WITH NO RISK FACTORS FOR DRUG RESISTANCE

- Persistent Fever ≥ 2 weeks, without a known cause and/or
- Unremitting cough for ≥ 2 weeks and/or
- Weight loss $\geq 5\%$; or no weight gain in past 3 months despite adequate nutrition; or failure of nutritional rehabilitation in babies with SAM
- With or without contact with Pulmonary TB in past 2 years



PAEDIATRIC TB FURTHER WORK-UP ALGORITHM UNDER U-DST



*RR detected in new case with no risk factors for DRTB needs retesting if only MTB detected is very low as it makes Rif resistance detection less reliable
*SL-LPA may be done directly if smear -ve else send for MGIT followed by FLPA or LC-DST (Mfx Z.0, Km, Cm, Lzd)
*LPA may be done directly if smear +ve else send for MGIT followed by FLPA to evaluate for H (inhA and/or KatC mutn) and Eto (inhA) resistance

TYPE OF PATIENTS	TB TREATMENT REGIMENS	Number of tablets (dispersible FDCs)				
		WEIGHT BAND	Intensive phase		Continuation phase	
Microbiologically confirmed RS Pulmonary TB	2HRZE + 4HRE		HRZ	E	HR	E
Clinically diagnosed Pulmonary TB (recurrent, failure, treatment after default)			50/75/15	100	50/75	100
*DR TB algorithm-DST		4-7 kg	1	1	1	1
		8-11 kg	2	2	2	2
		12-15 kg	3	3	3	3
		16-24 kg	4	4	4	4
		25-29 kg	3 + 1A*	3	3 + 1A*	3
		30-39 kg	2 + 2A*	2	2 + 2A*	2

*A=Adult FDC (HRZE = 75/150/400/275; HRE = 75/150/275)

When to assess

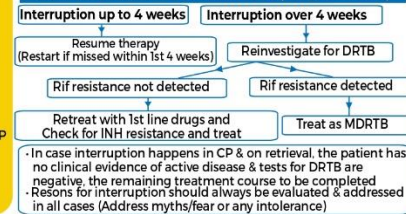
- Within 2 weeks of starting therapy for checking that- correct dose, combination of drugs is being taken, adherence and tolerance to drugs
- Then every month till completion of treatment

What to assess

- Appropriateness of therapy:
- Correct combination, acceptance/tolerance
- Counsel about need to complete & not miss on doses (Inform, if doses are missed)
- Response to therapy:
- Clinical symptoms, adverse effects, weight, dose revision)
- X-ray at end of therapy
- Do X-ray for worsening at any time OR slow resolution OR persistent symptoms at end of IP
- NAAT is not appropriate follow up tool for monitoring progress of disease
- Smear examination at end of treatment (to declare outcome)
- Repeat microbiological test (smear, MGIT, NAAT) at end of IP & at end of therapy, if still symptomatic or any deterioration/failure to respond
- After treatment completion, follow up patients clinically at end of 6, 12, 18 & 24 months

MONITORING

MANAGING TREATMENT INTERRUPTIONS (NON-ADHERENCE)



• In case interruption happens in CP & on retrieval, the patient has no clinical evidence of active disease & tests for DRTB are negative, the remaining treatment course to be completed. Reasons for interruption should always be evaluated & addressed in all cases (Address myths/fear or any intolerance)

ABBREVIATIONS

ADA Adenosine Deaminase	DRTB Drug resistant TB	FQ Fluoroquinolones	IS Induced sputum	RIF Rifampicin
BAL Broncho-alveolar lavage	DST Drug sensitivity test	GA Gastric aspirate	LN Lymph node	SAM Severe acute malnutrition
CBNAAT Cartridge-based Nucleic Acid Amplification test	EPTB Extra-pulmonary TB	H Isoniazid	MAC Mid Arm Circumference	SL Second line injectables
CECT Contrast enhanced CT	ETO Ethionamide	HIV Human Immunodeficiency virus	MTB Mycobacterium Tuberculosis	SL-LPA Second line - Line probe assay
CP Continuation phase	FDC Fixed dose combination	HRZE Isoniazid, Rifampicin, Pyrazinamide, Ethambutol	NAAT Nucleic acid amplification test	TST Tuberculin skin test
CT Computed tomography	FL-LPA First line - Line probe assay	IGRA Interferon Gamma Release assay	PPD Purified Protein Derivative	USG Ultrasonography
			ZN Ziehl Neelsen	

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