March/ 2022

Department of Health Research
Ministry of Health and Family Welfare, Government of India

INDIAN COUNCIL OF MEDICAL RESEARCH
Serving the nation since 1911

Standard Treatment Workflow (STW) for the Management of
PAEDIATRIC ABDOMINAL TUBERCULOSIS
ICD-10-A18.31

WHEN TO SUSPECT?

- One or more of following
  - › Recurrent/chronic abdominal pain in presence of red flag signs
  - › Abdominal distension/mass
  - › Altered bowel habits
- Constitutional symptoms like Presence of Fever >2 weeks, Anorexia, Unexplained weight loss or no weight gain in last 3 months despite adequate nutrition may be present
- History of contact with TB patient may also be present

CLINICAL FEATURES SPECIFIC TO TYPE OF ABDOMINAL TB

PERITONEAL TB
- Abdominal pain, distension
- Fever
- Weight loss

NODAL TB
- Pain abdomen
- Fever
- Palpable abdominal lump

INTESTINAL TB
- Recurrent intestinal colic
- Altered bowel habits
- Chronic diarrhoea
- Partial/complete intestinal obstruction
- Weight loss, anorexia
- Palpable abdominal lump
- Lower gastrointestinal bleeding

VISCERAL TB (LIVER, SPLEEN, PANCREAS)
- Abdominal pain
- Fever
- Jaundice
- Weight loss
- Anorexia
- Hepatomegaly
- Splenomegaly
- Hepatic abscess
- Palpable abdominal lump
- Abnormal LFTs

EXAMINATION FINDINGS
- Anthropometry
- General physical & systemic examination
- Look for peripheral LAP, ascites, hepatosplenomegaly, doughy feel of abdomen, palpable abdominal lump, visible peristalsis or a moving mass -"gola" formation due to partially obstructed dilated bowel loop

RED FLAGS
- Pain abdomen waking child from sleep
- Chronic, severe, or nocturnal diarrhea
- Presence of constitutional symptoms like fever, anorexia, weight loss, etc.
- Localized distension or mass

INVESTIGATIONS

ESSENTIAL
- Ultrasound abdomen

SUGGESTIVE FINDINGS
- Abdominal LN : measuring >15 mm in short axis, conglomerate and/or central necrosis
- Omental/mesenteric thickening >15 mm with increased echogenicity
- Ileocaecal wall thickening

NON SPECIFIC FINDINGS
- Intraabdominal fluid (free or loculated) or Inter-loop ascites
- Ascitic fluid with multiple septations
- Abdominal LAP with SAD <15 mm in absence of red flag signs

- Chest X Ray
- sputum/GA/IS (If CXR abnormal) for NAAT, TB culture
- Ascitic fluid (If present) for cytology, protein & albumin
- Peripheral LN-FNA (If size >2 cm) for cytology, NAAT, TB culture

Ascites
Essential
- If exudative ascites, ascitic fluid for NAAT, TB culture
- No role of ADA

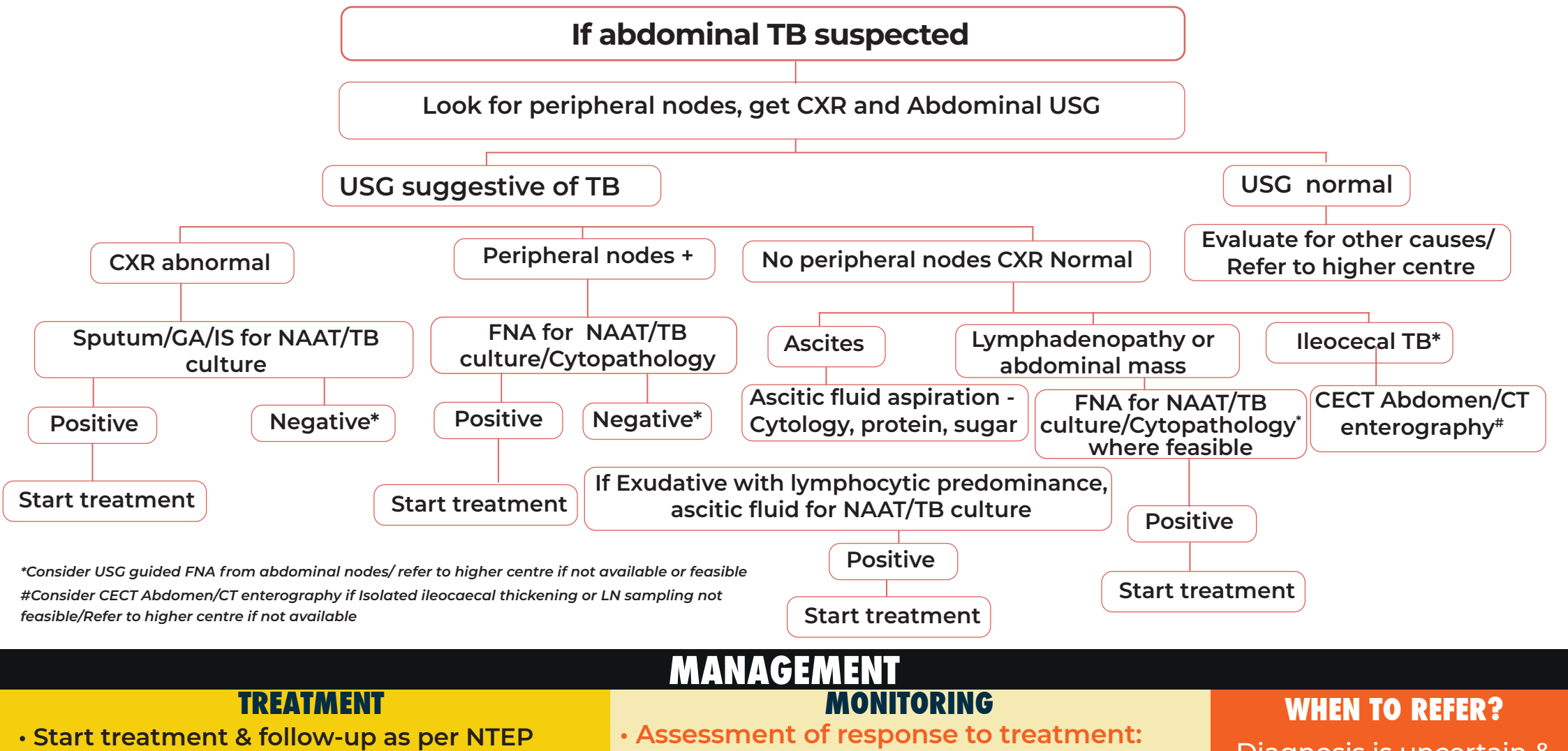
Enlarged Abdominal mass
Desirable
- USG guided Abdominal mass-FNA for cytology, NAAT, TB culture

Optional
- USG/CT guided core biopsy of LN for histology, NAAT, TB culture

Intestinal involvement
Desirable
- CECT Abdomen/CT enterography
- USG guided Abdominal Mass -FNA for cytology, NAAT, culture

Optional
- Ileocolonoscopy, tissue biopsy (HPE, NAAT)
- Laparoscopy, tissue biopsy for HPE, NAAT

DIAGNOSTIC ALGORITHM



Consider USG guided FNA from abdominal nodes/ refer to higher centre if not available or feasible

#Consider CECT Abdomen/CT enterography if Isolated ileocaecal thickening or LN sampling not feasible/Refer to higher centre if not available

MANAGEMENT

TREATMENT
- Start treatment & follow-up as per NTEP
- ATT for 6 months (2HRZE + 4HRE)
- Pyridoxine supplementation- 10 mg/day
- Steroids- Routinely not recommended (SAIO)
- Supportive treatment- Management of SAM/Malnutrition as per national guidelines
- Surgical treatment:
  - › Acute intestinal obstruction, Bowel perforation
  - › Persistence of obstructive symptoms despite conservative management & ATT

- **DO NOT** start Empirical ATT with isolated:
  - › Recurrent/Chronic abdominal pain without red flag signs
  - › Chronic diarrhoea without proper evaluation
  - › Failure to gain weight

MONITORING
- Assessment of response to treatment:
  - › Clinical follow up - every month during treatment & after that every 3 months
  - › Radiologically by USG - At the end of treatment or if worsening or non response to treatment
  - › Microbiological - If worsening or non response to treatment
- Pointers towards DR TB investigation:
  - › Non response to treatment or Worsening or deterioration of constitutional symptoms after initial improvement. Rule out Crohn's disease OR Inflammatory Bowel Disease
- Obstructive symptoms may persist or worsen despite treatment with appropriate ATT
- Monitor for
  - › Adherence to treatment (ATT)
  - › Adverse drug reactions- ATT induced

WHEN TO REFER?
- Diagnosis is uncertain & additional investigations are required
- Acute intestinal obstruction or bowel perforation
- DR TB
- No response to appropriate treatment
- Oral drug (ATT) intolerance/cannot be given

ABBREVIATIONS

ATT- Antitubercular treatment
CECT- Contrast Enhanced Computed Tomography
CT- Computed Tomography
CXR- Chest X-Ray
DR-TB- Drug Resistant tuberculosis
E- Ethambutol
FNA- Fine Needle Aspiration
GA- Gastric Aspirate
H- Isoniazid
HPE- Histopathological Examination
IBD-Inflammatory Bowel Disease
IS- Induced Sputum
LAP- Lymphadenopathy
LN- Lymph Node
MGIT- Mycobacteria Growth Indicator Tube
NAAT- Nucleic Acid Amplification Test
R- Rifampicin
SAD- Sagittal Abdominal Diameter
SAIO- Sub Acute Intestinal Obstruction
SAM- Severe Acute Malnutrition
USG- Ultrasonography
Z- Pyrazinamide

REFERENCES

1. *National TB Elimination Programme, Central TB Division. Training Modules for Programme Managers & Medical Officers. Ministry of Health & Family Welfare, Government of India. https://tbcindia.gov.in/index1.php?lang=1&level=1&sublinkid=5465&lid=3540 Last access on 10 March, 2022.*
2. *Guidelines for programmatic management of drug resistant tuberculosis in India March 2021. National TB Elimination Programme, Central TB Division, Ministry of Health & Family Welfare, Government of India accessed at https://tbcindia.gov.in/showfile.php?lid=3590 Last access on 10 March, 2022.*