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Standard Treatment Workflow (STW) for the Management of
ADULT MUSCULOSKELETAL TUBERCULOSIS
ICD-10-A18.0

WHEN TO SUSPECT?

SPINE TUBERCULOSIS

- Persistent localized pain in spine region >6 weeks, night pains
- Local tenderness/cold abscess
- Recent onset deformity in the back
- Recent neurological deficit (better to refer*)
- Persistent heaviness around the waist/Girdle pain
- Fever, cough, weight loss & night pains
- History of close contact with TB

OTHER JOINTS/BONES

- Persistent localized pain & swelling >6 weeks
- Mono-articular joint involvement
- Discharging sinus (+/-)
- Fluctuant swelling with or without inflammation
- Painful restriction of involved joint movements
- Wasting around the area
- Fever, cough, weight loss & night pains
- History of close contact with TB

DIAGNOSTIC ALGORITHM

Presumptive TB

ESR, CRP, LFT, KFT, HIV

Imaging : X-rays spine & chest, (MRI, if feasible)

Features s/o TB

In case of psoas abscess or soft tissue abscess: USG guided biopsy, bone/joint biopsy (open or percutaneous)

Biopsy facilities not available: Refer
Lesion not accessible for biopsy : Refer*

Send samples for: Gram staining & Culture sensitivity, AFB staining, HPE, NAAT, Solid & liquid mycobacterium culture, LPA if feasible

MTB +ve → **Start ATT**

MTB -ve → **Refer to higher centre**

Paravertebral shadow | Obliterated disc space & bone loss in X-rays | T_1WI and T_2WI images bone edema with VB destruction | T_2WI septate pre/para vertebral abscess in MRI

Findings S/o TB

- **X-ray findings(spine):**
  - › Regional Osteopenia
  - › Decreased/obliterated disc space
  - › Vertebral erosions +/- reduced vertebral height
  - › Paravertebral shadow
- **MRI findings (Spine):**
  - › Contagious VB involvement with relatively preserved disc
  - › Pre & paravertebral septate collection (Abscess)
  - › Epidural encroachment +/- intraosseous abscess
- **X-ray & MRI Finding (extraspinal):**
  - › Regional osteoporosis with bone destruction on X-rays
  - › Inflammation of bone(T1WI & T2WI) +/- abscess on MRI

TREATMENT

Treatment should be started & follow-up should be conducted as per NTEP guidelines
The following algorithm provides additional guidance for follow-up

TB +ve on any test

NAAT sensitive to Rifampicin: Start 4 drug first line ATT

- Clinical symptoms improvement
- CRP decreasing continue for standard 12 months regime
- Intensive 4 drug regime (not more than 4 months)
- Stop ATT after 12 months if all three parameters clinical, Lab(ESR, CRP) & radiological return to normal
- In case of spine decision to stop ATT to be taken by evaluating healed status on contrast MRI
- Mildly elevated ESR, CRP (non specific tests) can be ignored
- Follow up every month with CRP, LFT during intensive phase
- Follow up every 3 months during continuation phase with CRP/LFT
- On treatment worsening of symptoms
  - › Early (<3 months): Paradoxical
  - › Late (>4 months): ?drug resistance
- Any aberrance in course such as appearnce of nerual deficit: Refer*

GeneXpert resistant to Rifampicin: refer*/culture for TB and sensitivity to other drugs

TB -ve on all tests

Index of suspicion high ESR, CRP raised: Refer*

Index of suspicion low CRP normal: Reassurance

Clinical symptoms not improving ESR, CRP increasing: Refer*

?Suspected drug resistance

***Refer to higher centre where advanced diagnostic, & therapeutic facilities including surgical procedures are available.**

ABBREVIATIONS

AFB: Acid-fast Bacillus
ATT: Anti-Tubercular Treatment
CRP: C-Reactive Protein
ESR: Erythrocyte Sedimentation Rate
HIV: Human Immunodeficiency Virus
HPE: Histopathological examination
KFT: Kidney Function Tests
LFT: Liver Function Tests
LPA: Line Probe Assay
MRI: Magnetic Resonance Imaging
NTEP: National TB Elimination Programme
TB: Tuberculosis
USG: Ultrason bography
VB: Vertebral body
WNL: Within Normal Limits

REFERENCES

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