RESEARCH BRIEF

IMPROVING TUBERCULOSIS DETECTION AMONG SEVERELY MALNOURISHED CHILDREN IN MALNUTRITION TREATMENT CENTRES (MTCS): Dr. P.K. Anand et al, Scientist – F

Background

Tuberculosis (TB) and severe acute malnutrition (SAM) are major public health challenges in India. Malnourished children are at increased risk of developing tuberculosis and experiencing poor treatment outcomes. Studies indicate that 2–24% of acutely malnourished children may have TB, and mortality is substantially higher among SAM children with TB than among those without TB.

Malnutrition Treatment Centres (MTCs), also known as Nutrition Rehabilitation Centres (NRCs), provide an important opportunity for early identification of TB among vulnerable children. However, implementation of existing pediatric TB diagnostic guidelines remains suboptimal in many facilities, resulting in missed opportunities for diagnosis.

Evidence from Rajasthan

An ICMR-funded nested case-control study was conducted among 551 SAM children admitted to eight MTCs in Rajasthan. Among them, 39 children had CBNAAT-confirmed pulmonary tuberculosis and 512 served as controls.

Twenty clinical and demographic factors were examined. Multivariable analysis identified two factors independently associated with pulmonary tuberculosis:

- Persistent cough for two weeks or longer (Adjusted Odds Ratio [AOR]: 4.26; 95% CI: 1.54–11.76)
- Hepatomegaly (enlarged liver) on clinical examination (AOR: 2.36; 95% CI: 1.01–5.49)

The combination of either persistent cough ≥2 weeks or hepatomegaly increased sensitivity for detecting TB cases from 28.2% to 51.3%, while maintaining a specificity of 78.1%.

Policy Implications

1. Persistent cough for two weeks or more remains a strong indicator of presumptive TB among malnourished children and supports current national pediatric TB diagnostic guidelines.
2. Hepatomegaly emerged as a previously under-recognized predictor of pulmonary TB in SAM children and may help identify additional cases that could otherwise be missed.
3. In resource-constrained MTCs where complete implementation of diagnostic algorithms is challenging, simple clinical screening approaches can improve early identification and referral of suspected TB cases.

Recommendations

For National TB Elimination Programme (NTEP)

- Reinforce screening for cough duration ≥2 weeks among all SAM children admitted to MTCs.
- Consider inclusion of hepatomegaly assessment as an additional screening component during clinical evaluation.

For National Health Mission (NHM)

- Strengthen capacity building of pediatricians, medical officers, and nursing staff in MTCs for systematic TB screening.
- Ensure regular monitoring of adherence to pediatric TB diagnostic guidelines.

For State Health Departments

- Integrate standardized abdominal examination for hepatomegaly into routine admission assessments at MTCs.
- Establish referral pathways for prompt CBNAAT testing of children identified through screening.

For Researchers

- Conduct larger multicentric studies to validate hepatomegaly as a predictor of pulmonary TB among malnourished children.
- Evaluate the cost-effectiveness of incorporating hepatomegaly screening into existing TB detection algorithms.

Expected Benefits

Implementation of these recommendations may:

- Improve early TB detection among severely malnourished children.
- Reduce missed opportunities for diagnosis.
- Enable timely initiation of treatment.
- Contribute to reduced morbidity and mortality in this high-risk population.
- Support India's National TB Elimination Programme goals.

Key Message

Among severely malnourished children admitted to MTCs, persistent cough lasting two weeks or more and hepatomegaly are important indicators of pulmonary tuberculosis. Incorporating these simple clinical assessments into routine screening could improve case detection, particularly in resource-limited & challenging settings.

Reference

P.K. Anand; D. Patel; S. Lata; J.K. Gautam; M. Chaudhary; M. Singh; P. Soni; S.K. Kabra; B.V. Babu. Factors associated with pulmonary TB in malnourished children admitted to rehabilitation centres. **Int J Tuberc Lung Dis** January 2026; 30 (1): 21-26.