

“It can Always be TB” ...But Is It? A New Decision Score to the Rescue

November 16, 2019

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Article type: [Pediatrics Blog](#)



The diagnosis of tuberculosis (TB) in children is challenging due to a multitude of factors – a varied symptomatology often with non-localizing symptoms, inability to produce enough sputum to test, and different manifestations in immunocompromised patients. This is especially true in the HIV population, where an early diagnosis and prompt management can dramatically improve morbidity and mortality. Thus there is a need for a decision tool that can guide clinicians to initiate TB treatment as early as possible and subsequently improve outcomes.

This need is addressed in a meticulous and thoughtful fashion in the paper by Marcy et al ([10.1542/peds.2018-2065](#)) recently released in *Pediatrics*. The group performed their study prospectively in eight sites in Burkina Faso, Cameroon, Cambodia, and Vietnam with the aim of developing scoring criteria for TB treatment in HIV-infected patients. They included 438 children, of whom 251 had confirmed or unconfirmed TB. The final score included fever for longer than 2 weeks, refractory cough, hemoptysis, weight loss over past 4 weeks, contact with a TB patient, tachycardia, chest X-ray findings (military, alveolar, lymphadenopathy), abdominal ultrasound findings of lymphadenopathy, and Xpert MTB/RIF (a nucleic acid amplification test detecting presence of *Mycobacterium tuberculosis* DNA and rifampin resistance within a few hours) testing. A Quantiferon test result (which detects *Mycobacterium tuberculosis* based on the interferons released by patient’s white blood cells on contact with in vitro TB antigens) was initially included in an alternative model, but since it did not add to the diagnostic performance, the final scoring model omitted that. As the points add up, a score greater than 100 at any level of this new tool directs the provider to start TB treatment. The final version of the scoring tool had a sensitivity of 88.6%, specificity of 61.2%, positive predictive value of 77.4%, and negative predictive value of 78.1%.

As a reader, one is easily impressed by the practical utility of this paper. The tool proposed by the authors is clinician-friendly and utilizes assessment strategies available in most settings where children with HIV and children with TB are treated. While it does involve a certain nuance and care in evaluating chest X-rays, it does not hinge on the results of one special test that would need to be done elsewhere. It empowers the local providers and allows a rapid stratification and hopefully speedy initiation of therapy for TB in this extremely high-risk population.

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