

Letters to the Editor

Scoring system, recommended by the Brazilian National Ministry of Health, for the diagnosis of pulmonary tuberculosis

Sistema de pontuação, recomendado pelo Ministério da Saúde, para o diagnóstico de tuberculose pulmonar

To the Editor:

I read the recent report on the scoring system, recommended by the Brazilian National Ministry of Health (NMH), for the diagnosis of pulmonary tuberculosis (TB) with great interest.⁽¹⁾ Pedrozo et al. concluded that “The NMH system scores were significantly higher in the TB and TB/HIV groups than in the other two groups. Therefore, this scoring system was valid for the diagnosis of pulmonary TB in this population, regardless of HIV status.”⁽¹⁾ I have some concerns regarding this report. First, the scoring system cannot exclude latent TB, which might be a major problem in actual practice. Second, it remains questionable whether the NMH system is a user-friendly tool. If it is not easy to use, it will not be employed. Third, to complete a diagnostic test assessment, the diagnostic properties (sensitivity, specificity,

accuracy, precision, predictive value, etc.) and the cost-effectiveness should be evaluated and reported.

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Authors’ reply

Resposta dos autores

To the Editor:

We thank Dr. Viroj for the interest in our article and the questions raised.

Latent tuberculosis (TB) is indeed a major problem because it is a challenge to define latent and active TB in childhood. In practice, the contact tracing made with tuberculin skin testing and chest radiography (not always available in developing countries) allows the identification of those cases that should receive treatment for latent TB. Currently, the use of interferon gamma release assays is not recommended in childhood, and they are also very expensive.

The Brazilian National Ministry of Health (NMH) system aims to detect cases of active TB in children (< 10 years old). In our view, this is an even bigger challenge because, in general, there is no bacteriological confirmation. In

addition, we studied uninfected children and those infected with HIV (i.e., immunosuppressed children). We believe that the contribution of the Brazilian NMH system is to provide a diagnostic tool to physicians working in rural and peri-urban health care units, with few technological resources. The difficulties suggested in the use of this system refer to the radiological interpretation by general practitioners. In our view, this is a crucial problem related to TB in childhood. Finally, although there have been no studies evaluating the cost-effectiveness of the NMH system, the properties of the diagnostic test have been evaluated. Using a cut-off value of 30, the sensitivity was 89% and the specificity was 86%.⁽¹⁾

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Whole-body magnetic resonance imaging: a viable alternative to positron emission tomography/CT in the evaluation of neoplastic diseases

Ressonância magnética de corpo inteiro: uma alternativa viável a tomografia por emissão de pósitrons/TC na avaliação de doenças neoplásicas

To the Editor:

Whole-body magnetic resonance imaging (WBMRI) is a fast, reliable, safe and accurate means for detecting disease throughout the body. It is a novel and promising imaging technique that can have high sensitivity in the detection of tumors.

The advantages of WBMRI have been shown in a number of recent articles. These studies have demonstrated that a screening MRI protocol can detect various disease processes with an accuracy that is almost equal to that of a variety of equivalent “gold standard” diagnostic tests. The main results of these articles are summarized below:

- In lung cancer, WBMRI was successfully used with diffusion-weighted imaging

for M-stage assessment in patients with non-small cell lung cancer (NSCLC), with an accuracy that was equivalent to that of (18) F-fluoro-2-deoxyglucose positron emission tomography (FDG-PET) with CT.⁽¹⁾

- The accuracy of an MRI scan was significantly higher than the quantitative and qualitative sensitivities of a PET/CT scan on a per-patient basis for N-stage assessment of NSCLC patients ($p < 0.05$).⁽²⁾
- In the assessment of distant metastatic spread, WBMRI was highly sensitive and had advantages over PET/CT, especially in tumors that frequently spread to the liver, bones or brain.⁽³⁾

- For the imaging of pediatric tumor patients for whom multiple follow-up examinations might be required, WBMRI is very attractive as a radiation-free alternative.⁽³⁾
- For the staging of hematologic diseases, such as multiple myeloma, WBMRI has proven to be highly accurate; it also allows for the precise assessment of bone marrow.⁽³⁾
- Similarly to PET/CT, MRI can also quantitatively measure a response to treatment.⁽⁴⁾

Since integrated PET/CT provides greater efficacy in staging using the tumor, node, and metastasis classification than do conventional staging methods, it seems to be the preferred first-line staging tool for lung cancer. However, MRI has played an increasingly important role in this setting. For example, in patients with pulmonary adenocarcinoma, the sensitivity of a brain MRI scan in the detection of metastasis has been shown to be significantly higher than is that of a PET/CT scan (88% vs. 24%; $p < 0.001$).⁽⁵⁾

The cost of imaging studies is also an important consideration. Because of the nature and complexity of the imaging system and intrinsic maintenance costs, MRI is unavoidably a more expensive test than is CT. However, it is more affordable than is PET/CT. In addition, the machinery of PET/CT has more components, and the requirement for radiopharmaceutical products to be continuously produced makes PET/CT intrinsically more expensive. Due to the imaging system itself, MRI is also a safer modality than is PET/CT. Unlike the ionizing radiation used in CT, the powerful magnetic field and radiofrequency energy of MRI have not been shown to cause cancer or fetal abnormalities. It is important to note that, although X-rays are known to cause cancer, the exact risk of developing cancer from being submitted to CT scans or repeated CT examinations is unknown.⁽⁶⁾

Therefore, the constant improvements in equipment and development of new protocols might soon make MRI a preferred replacement for PET/CT as a first-line cancer staging tool. This method has been shown to provide similar results to PET/CT, as well as being less expensive and safer.

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