

Application of technetium-99m-sestamibi in differentiation of active from inactive pulmonary tuberculosis using a single photon emission computed tomography method

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Abstract

Objective We studied the usefulness of ^{99m}Tc methoxyisobutylisonitrile (MIBI) scintigraphy for differentiation between active and inactive pulmonary tuberculosis. **Methods** Thirty-six patients (aged 27-82 years, 16 males and 20 females) were included in our study. Each patient was injected with 7.4 MBq (20 mCi) ^{99m}Tc-MIBI and both planar and single photon emission computed tomography (SPECT) imaging were performed 10 and 15 min after injection. Twenty-four patients had active pulmonary tuberculosis (proven by sputum culture), and the remainder 12 had negative sputum culture. Semiquantitative as well as visual assessments were done on all sets of images. **Results** All of the 12 patients in the control group had negative scintigraphy on both planar and SPECT images. Twenty patients with active pulmonary tuberculosis had positive ^{99m}Tc-MIBI scintigraphy on planar images (sensitivity of 87.5%). SPECT images were positive in 22 patients with active pulmonary tuberculosis (sensitivity of 90.9%). Both semiquantitative and visual assessment of planar and SPECT images showed statistically significant differences between active and inactive pulmonary tuberculosis patients ($P < 0.001$). Comparison of 10 and 15 min image sets did not show any statistically significant difference ($P = 0.906$ and 0.407 for planar and SPECT images, respectively). **Conclusion** ^{99m}Tc-MIBI has significant uptake in the active tuberculosis lesions and can be used to differentiate between active and inactive tuberculosis. The SPECT method is especially useful because of its higher sensitivity. *Nucl Med Commun* 29:690-694 © 2008 Wolters Kluwer Health Lippincott Williams & Wilkins.

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Author keywords

^{99m}Tc-methoxyisobutylisonitrile; Pulmonary tuberculosis; Single photon emission computed tomography

Indexed Keywords

EMTREE drug terms: methoxy isobutyl isonitrile technetium tc 99m; diagnostic agent; radiopharmaceutical agent

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Medline is the source for the MeSH terms of this document.

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