

The usefulness of ^{99m}Tc -HMPAO-labeled leukocyte scintigraphy in the diagnosis of skeletal metastases of cancers

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The usefulness of bone marrow scintigraphy with ^{99m}Tc -HMPAO-labeled leukocytes (leukocyte bone marrow scintigraphy) in the diagnosis of skeletal metastases of cancers was investigated in 70 lesions in 27 patients with various types of cancer. The final diagnosis of skeletal metastases was based on one or more criteria consisting of histological confirmation, typical findings of metastases by bone radiograph, CT and MRI, or progressive swellings of the lesions with severe pain due to nerve compression. Of the 70 lesions, 55 were finally diagnosed as metastases, and 15 as benign lesions. Leukocyte bone marrow scintigraphy showed photopenic defects in 52 of the 55 metastatic lesions (sensitivity 95%), and the remaining 3 negative lesions were found positive for metastases by MRI. In contrast, MRI could evaluate only 39 of the 55 lesions because 16 lesions in the ribs, scapula and sternum were not visualized. Of these 39 lesions, MRI showed positive findings for metastases in 33 (sensitivity 85%), and negative findings in 6 with photopenic defects found by leukocyte bone marrow scintigraphy. Of the 15 benign lesions, 3 were false positive for metastases on leukocyte bone marrow scintigraphy (specificity 80%). We conclude that ^{99m}Tc -HMPAO-labeled leukocyte bone marrow scintigraphy may be useful in the diagnosis of skeletal metastases of cancers, particularly when MRI fails to evaluate the lesions.

Key words: ^{99m}Tc -HMPAO-labeled leukocyte scintigraphy, bone marrow scintigraphy, skeletal metastasis