

Clinical Evaluation of ^{99m}Tc -Bleomycin for Tumor Scintigraphy

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Scintigraphy after 3 to 5 mCi i.v. dose of ^{99m}Tc -bleomycin was performed on 352 patients with various disorders and their results were analysed. Among them, 231 had various malignant diseases and the rest were of benign disorders.

In malignant cases scintigraphic results were positive in 80, 79 and 86% of total, primary and metastatic lesions, respectively. As to the location of tumors, excellent and good results were obtained in the extremity, head, neck and chest areas, however, abdominal lesions were not well visualized. False negative results were seen mostly in malignant lymphoma, small deep lesions (pharyngolaryngeal and esophageal cancers) and lesions located close in the areas of normal radioactivity distributions (abdominal, cardiac and nasal area). Except for malignant lymphoma,

cellular type of the tumor did not show any significant differences in their results and 80% of adenocarcinoma also gave positive findings, and seemed quite different from those with ^{67}Ga -citrate which gave excellent results in malignant lymphoma and poor in adenocarcinoma. In the treated cases accumulation of ^{99m}Tc -bleomycin used to be seen longer and more often than that of ^{67}Ga .

Of benign cases, there were 20 brain lesions and 12 of 17 brain tumors were positive and the rest were negative. Of other 101 benign cases 18 gave false positive findings. Most of them were chronic thyroiditis, Hurthle cell adenoma of thyroid, aspergillosis and silicosis of lung, and salivary stone disease, however different from ^{67}Ga , most of active tuberculosis, sarcoidosis and paranasitis did not show accumulation.

Tumor Scintigraphy with ^{169}Yb -Citrate

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Scintigraphy with ^{169}Yb -citrate was carried out as a tumor screening test in a total of 46 patients. 300 μCi of ^{169}Yb -citrate was injected intravenously in all patients without premedication, and scintigraphies were performed at 1, 3 and 5 days after injection. As the results in the cases of various tumor diseases, a positive delineation was

found in 7 cases of 10 patients with cancer of head and neck; in 5 cases of 10 patients with primary lung cancer; in all of 14 patients with secondary brain tumor; and in all of 3 patients with rheumatoid arthritis. These findings suggest that ^{169}Yb -citrate is a useful bone-scanning agent as well as a tumor-scanning agent.