

538

RADIOIMMUNODETECTION USING I-131-LABELED ANTI-CARCINOEMBRYONIC ANTIGEN ANTIBODIES (MONOCLONAL) FOR HUMAN MALIGNANT TUMOR. K. Itoh, M. Furudate, S. Nishi, Y. Hata, M. Kondo. University of Hokkaido, School of Medicine, Sapporo.

Radioimmunodetection using radio-labeled antibodies against tumor associated antigens proved to be non-invasive and useful for localization of malignant tumor. This was a preliminary study on positive delineation of malignant tumors with monoclonal (MoAb) anti-CEA antibodies performed in 5 patients. Scintiphotos delineated primary and/or metastatic foci in 4 patients out of 5 ones. MoAb showed higher tumor/non-tumor ratio than PoAb. Subtraction processing as a contrast enhanced method for tumor localization was not needed with MoAb. In biodistribution except malignant foci and the thyroid, which was demonstrated due to inadequate premedication of Lugol, non-specific uptake of the radiotracer was noted to the liver with PoAb and to the bone marrow with MoAb, respectively. Blood counts of both antibodies showed diphasic disappearance. MoAb showed faster disappearance of blood radioactivity than that of PoAb.

539

RADIOIMMUNOIMAGING IN MALIGNANT MELANOMA WITH IN-111-LABELED MONOCLONAL ANTIBODY. T. Kanamaru, S. Takezaki, S. Nishiyama, K. Yoda and K. Ishii. Kitasato University School of Medicine, Sagami-hara.

By using In-111-labeled monoclonal antibody (225.28S and 96.5) against human malignant melanoma, we examined its availability for radioimmunodetection of human melanoma xenografts in nude mice and metastatic lesions in two malignant melanoma patients (stage IV). Monoclonal antibody was conjugated with DTPA first, and then labeled with In-111. Nude mice, bearing melanomas at the right hind legs, were i.p. or i.v. injected with ~300 µCi/60 µg of labeled 225.28S. Tumor images were taken with Gamma camera at 24 hrs intervals. Clear tumor image was obtained even at 24 hrs after injection. An example of tissue distribution of the labelled antibody, in terms of tumor to tissue ratio at day 3 is as follows: Tumor/intestine 20/1; tumor/liver 10/1; tumor/blood 8/1; tumor/muscle 8/1; tumor/heart 3/1; tumor/kidney 2/1. Furthermore, two patients with metastatic melanoma received D.I.V. injection of monoclonal antibody 96.5 (4mCi/1 mg) for 1 hr. No serious side effects were observed. All of previously documented metastatic sites except brain metastasis were imaged at 72 hrs after injection. This study demonstrates the future applicability of monoclonal antibody against malignant melanoma for radioimmunodetection of metastatic lesions in melanoma patients.

540

RADIOIMMUNOIMAGING OF MALIGNANT MELANOMA BY USING In-111 LABELED ANTI-p97 MONOCLONAL ANTIBODY; PRELIMINARY REPORT. K. Endo, H. Sakahara, M. Koizumi, T. Nakashima, M. Kunimatsu, H. Ohta, K. Torizuka, S. Imamura. Kyoto University Hospital, Kyoto.

Clinical trials by using In-111 labeled anti-melanoma monoclonal antibody; p97 have been carried out in collaboration with Kitazato Medical School and National Cancer Institute. DTPA-coupled antibody, supplied from the Hybritech Inc. San Diego California USA, was labeled with In-111 chloride within 30 min. Labeling efficiency was from 70 to 92%.

In-111 labeled antibody (2.5 mCi/20 mg IgG) was administered intravenously for 60 min period without acute toxicity. Unlabeled In-DTPA complexes were excreted into the urine within 6 hours after the injection. Imagings were performed at 1, 2, 3 and 6 days.

Although nonspecific uptake of radioactivity was seen in the nasopharyngeal region, heart, liver and bone marrow, multiple tumors were visualized by In-111 labeled p97 antibody scans.

Radioimmunomaging using In-111 labeled antibody seemed promising. However, further studies will be necessary to evaluate the clinical usefulness of radioimmunomaging and to compare the accuracy with conventional Ga-67 scans.

541

RADIOIMMUNOIMAGING IN MALIGNANT MELANOMA WITH In-111-LABELED MONOCLONAL ANTIBODY. K. Ishii, K. Murata, K. Nakazawa, S. Horiiike, T. Takamatsu, K. Yoda, T. Matsubayashi, T. Kanamaru, S. Takezaki, S. Nishiyama, *J. Kubo. Kitasato University School of Medicine, Kanagawa. *Teijin Co., Tokyo.

We performed radioimmunomaging in malignant melanoma with In-111-labeled monoclonal antibody 96.5 which was obtained by the kit supplied by Hybriteck Inc. Ninetytwo percent to eightytwo percent of monoclonal antibody was labeled with In-111. Three patients with malignant melanoma were received transfusion of 100 ml saline included In-111-labeled monoclonal antibody after skin test. Scintigraphy were performed at 5, 24, 48, and 72 hours after injection. We measured the ratio of In-111 plasma disappearance and urinary excretion. In two out of three patients we detected metastatic malignant melanoma. In one of these cases we could not detect malignant sites by means of scintigraphy with Ga-67-citrate.