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OBSERVATIONS ON THE LYMPH FLOW IN THE LOWER EXTREMITY USING Tc-99m LABELED HUMAN SERUM ALBUMIN. I.Arai,A.Tamaki,R.Nakamura, N.Takeyasu,S.Watanabe,H.Hase,K.Taira, A.Hirota,T.Sakai,S.Yabuki,K.Matii and T.Takahasi,K.Sakai,M.Hosino. TOHO University 3rd Dep. of Int. Med. and Nucler Med. Tokyo

RI-lymphography using Tc-99m human serum albumin(HSA) with a computer onlined gamma camera was used to study lymph flow in lower extremity of volunteers and diabetic patients. Tc-99m HSA(4mCi,0.1ml) was injected into the subcutaneous tissue of pretibial area and scanned sequentially on the thigh with a computer onlined gamma camera for 40 minutes. Regions of interest were located on lymph vesseles, lymph node and back ground, and time-activity curves were detected. The hyperthermia with warm water added to the leg for late 30 minutes. Serum total protein,serum albumin,HbA1C and peripheral nerve conduction velocity were examined. The time-activity curves ( lymph flow ) showed a stepwise rise with a numerous spike-like fluctuation and that a maximum count was over 100 cps were in 67% of volunteers and 17% of diabetic patients.

The conclusions are as follows;The lymph flow in lower extremity of DM redused and do not be accelerated by hyperthermia. RI-lymphography using Tc-99m HSA is a useful method for study the lymph dynamics.

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DUAL SCINTIGRAPHY USING Ga-67 AND Tc-Re. M.Ozawa,Y.Kobayashi,T.Nakabo,H.Horiuchi,N. Maruo,M.Kondo,K.Okamoto,M.Yamashita and M. Miki. Kyoto Prefectual University of Medicine and Kyoto University School of Medicine, Kyoto.

Scintigraphies using Ga-67-citrate (Ga) and Tc-99m-rhenium (Tc-Re) are useful in making a diagnosis of malignant lymphoma. However, it is sometimes difficult to precisely evaluate findings in each of them because Ga scintigram shows an accumulation of radioactivity in the region of inflammation or neoplasm, and Tc-Re scintigram reveals a defect in the region of anomaly or neoplasm. We have then developed a new dual tracers scintigraphy using Ga and Tc-Re, and performed it in patients with malignant lymphoma and metastasis of neoplasm to the lymph nodes. In the patients with lymphoma, a diagnosis could be made on the basis of both positive and negative images which were obtained with Ga window and Tc window respectively. In addition, it could disclose extranodal and mediastinal lesions of lymphoma that could not be visualized in lymphangiography. On the other hand, it was possible to distinguish the findings due to lymphoma from those due to metastatic lesion because image obtained using Tc window indicated congestion of lymphatic flow in the region peripheral to the lesion and local findings. These results suggest that the dual tracers scintigraphy is superior to Ga or Tc-Re scintigraphy and is supreme compared with lymphangiography.

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THE INFLUENCE OF HYPERFERREMIA ON SOME SCINTIGRAPHY. S.Yoshida,A.Sawada,M.Nishioka ,O.Kamiike,Y.Yamamoto,M.Morita,Y.Ogawa,N. Akagi,Y.Kubo and T.Maeda. Kochi Medical School.

Elevation of the level of serum iron gives us some abnormal RI distribution image on several scan. Abnormal RI distribution images in Ga scintigraphy and Bone scintigraphy were experienced in our instrument, which were caused by hyperferremia. On Ga scintigraphy, 38 cases of decreased physiological hepatic uptake and 10 cases of increased bone accumulation were observed. On Bone scintigraphy, 1 case of diffuse increased hepatic uptake and 10 cases of increased diffuse renal uptake,so called "Hot kidney sign" were recognized. Three factors of hyperferremia such as administration of overloaded iron and combined chemotherapy and liver desfunction were discussed. The relationship between abnormal RI distribution pattern and change of serum iron level in cases of combined chemotherapy were also discussed.

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COMPARATIVE STUDY OF INTRAMEDULLARY DISTRIBUTION OF In-111-Cl AND Tc-99m-S COLLOIDS BY SIMULTANEOUS SCINTIGRAPHY AND DATA PROCESSION. Y.Takahashi, H.Komaki,T.Miysmoto,Y.Kondo and H.Nagashima. Hematology and R I Center, Tenri Hospital. Tenri, Nara.

In order to obtain a quantitative parameter to determine similarity or dissimilarity in the intramedullary distribution between In-111-Cl and Tc-99m-S-colloids, simultaneous scintigraphy was performed in dual 245keV and 140keV windows for respective tracers administered 48 hours and 60 minutes previously. For subtraction of contamining In-111 activity in 140keV level, ratio of In-111 count in 140keV to that in 245keV was measured in superficial and deep marrow areas both in thin and thick subjects demonstrating dominant marrow uptake. The ratio in the superficial marrow was $0.98 \pm 0.19$ in the trunk and $0.94 \pm 0.04$ in extremities except in the posterior pelvis of obese female,while that in the deep parts varied from 1.0 to 2.0 according to body thickness. Net Tc-99m counts after subtraction was refered to In-111 ones in every pixel selected as "active marrow" by a certain isocount level to yeild a correlation coefficient of distribution between these tracers. The value was from 0.4 to 0.9 in 34 superficial marrow parts in 5 cases including the sternum and posterior pelvis in a case of pure red cell aplasia who demonstrated apparently quite dissimilar image between two tracers. In those with poor In-111 uptake, negative value was yielded and attributable to its cortical bone uptake, which was substantiated by In / Tc ratio mapping. Thus statistics provided a useful parameter.

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