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INFERENCE OF FACTORS AFFECTING Ga-67 DISTRIBUTION IN THE HUMAN BODY USING MULTIVARIATE STATISTICAL ANALYSIS. K.Higashi, M.Ooguchi, S.Kobayashi, T.Okimura, T.Miyamura, I.Yamamoto. Kanazawa Medical College, Kanazawa.

We tried to estimate the main factors affecting Ga-67 distribution in the human body on scintigrams using multivariate statistical analysis ( factor analysis ). Regions of interest were set in several portions on Ga-67 scintigrams that appeared in 2 or 5 hours ( early scintigrams ) and 48 hours ( delayed scintigrams ) after injection, and each area was counted.

As variables for this analysis, the following Three Kinds of variables were used. (1) count ratios of delayed scintigrams to early scintigrams of each portion. (2) count ratios of each portion to femoral soft tissue on early scintigrams. (3) count ratios of each portion to femoral soft tissue on delayed scintigrams.

When we used any kinds of variables, we extracted similar factors. By correlating extracted factors with each portion, each portion was divided into various groups. Consequently, we were able to presume some factors which determine Ga-67 distribution in the human body on scintigrams.

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CORRELATION BETWEEN SERUM UIBC AND TUMOR UPTAKE OF GA-67 ( SECOND REPORT ). S.Nakano, Y.Hasegawa, K.Ibuka, T.Hashizume, A.Noguchi, and T.Okishio. The Center for Adult Diseases, Osaka.

We studied the relation between level of serum iron and unsaturated iron binding capacity ( UIBC ) and results of Ga-67 scan in various tumors, because Bradley suggested that conditions that affect iron metabolism in patients may interfere with the success of a Ga-67 scan. Positive rate of Ga-67 scan in non-Hodgkin's lymphoma, Hodgkin's disease, lung cancer, and hepatoma was 28/34, 7/7, 13/19 and 61/95, respectively. If all cases of non-Hodgkin's lymphoma, Hodgkin's disease, and lung cancer were taken into account, positive rate of the cases with increased UIBC above 250 mcg/dl was 10/11, and that of the cases with decreased UIBC below 100 mcg/dl was 2/2. In the cases of hepatoma, serum iron and UIBC distributed widely. Seventeen cases with tumor size below 3 cm were all negative in Ga-67 scan. In 78 cases with tumor size above 3 cm, positive rate of the cases with UIBC above 250 mcg/dl was 17/19 and that of the cases with UIBC below 100 mcg/dl was 6/10. In the positive cases with decreased UIBC, Ga-67 uptake into the tumor on the image was not so much as in those with increased UIBC. Level of serum iron and UIBC seems to have some effect on Ga-67 uptake of hepatoma as well as of liver.

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RETROSPECTIVE STUDIES OF ABNORMAL UPTAKE PATTERN OF Ga-67 IN THE LIVER.

A Savada, S.Yoshida, S.Morita, Y.Yamamoto, Y.Ogawa, T.Maeda, N.Akagi, Y.Kubo. Kochi Medical School, Kochi.

Our retrospective study of 1245 cases in Ga-67 scintigram yields 33 cases which show abnormal low uptake of Ga-67 by the liver.

There are 15 cases which undergo chemotherapy 12 cases which cause from liver dysfunction and 3 cases which have high accumulation of other part. Almost cases in chemotherapy group undergo anti-cancer drugs injection within 2 weeks prior to Ga-67 injection. In chemotherapy group, some cases show tumor accumulation or mammary glands accumulation in spite of low uptake of Ga-67 by the liver.

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POSTOPERATIVE FOLLOW UP OF MALIGNANT MELANOMA USING GA-67-CITRATE TUMOR SCINTIGRAPHY. Y.Hosokawa and M.Kaneko. Dept. of Dental Radiology, Higashi-Nippon-Gakuen Univ., Ishikari-Tobetsu, Hokkaido.

A case of malignant melanoma occurred in the gingiva was examined and followed up by tumor scintigraphy with Ga-67-citrate. The patient was a 38-year-old male admitted with a pigmentation of gingival membrane.

The conventional radiography carried out on the first admission could not reveal the tumor lesion which tumor scintigraphy with Ga-67-citrate could define. The whole body scan scintigrams showed no abnormalities except for an accumulation in the oral region.

The histological examination revealed malignant melanoma. Surgical operation was carried out at the Department of Oral Surgery.

In order to examine the postoperative progress, tumor scintigrams were taken at 4 weeks' intervals. Noteworthy changes were seen until 16 weeks after the operation. Remarkable metastases became obvious at the 20th week after the operation. The patient died 24 weeks after the operation due to remarkable whole body metastases.