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STUDY ON CASES WITH ABSENT LIVER UPTAKE IN Ga-67 SCINTIGRAPHY (PART 2). I. Kamigaki, H. Takenaka, S. Ito, Y. Hirono, A. Shinotsuka, H. Takahashi and T. Hishida Department of Radiology, School of Medicine, Showa University, Tokyo.

In the last annual meeting we have already reported 15 cases with faint or absent liver uptake of Ga-67. This time, adding new 35 cases, we further investigated the cause of absent liver uptake in total 50 cases. 39 cases (78%) were patients with malignant tumor and 7 cases were with liver cirrhosis. There was no correlation between liver dysfunction and absent liver uptake of Ga-67. In 38 cases (76%) iron saturation index (ISI) was markedly elevated. In contrast, all cases with increased liver uptake of Ga-67 showed normal or low ISI. Therefore, it was considered that decrease of Ga-67 combination with serum transferrin was main factor of absent liver uptake of Ga-67. There was no definite correlation with serum ferritin that indicated storage iron. In 8 cases with normal or low ISI, it was considered that marked Ga-67 accumulation to the tumor brought about lack of amount of liver uptake of Ga-67. But in remnant 4 cases with normal or low ISI, the cause of absent liver uptake of Ga-67 could not be found.

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MODIFICATION OF GA-67 UPTAKE IN HUMAN TUMOR FOLLOWING THE ADMINISTRATION OF IRON. T. Higashi, H. Wakao, K. Furukawa, M. Yamaguchi, K. Nakamura*, H. Kato*, T. Miura**, Y. Nishikawa** and K. Ito**. Department of Radiology, Kanagawa Dental College. Yokosuka. *Yokohama Keiyu Hospital. **Ito Hospital. Tokyo.

This study was undertaken in attempt to discern what change were produced in Ga-67 images of malignant tumor and inflammatory lesions of lung when iron was administered at late period such as 48 or 72 hours after Ga-67 injection.

48 or 72 hours after Ga-67 injection, Fesin (total iron load is 80mg) was administered to 22 patients with malignant tumor or inflammatory lesion of lung. In our clinical trials, Ga-67 image of tumor and normal tissue taken 3 hours after fesin administration was obviously diminished. Iron loading post Ga-67 injection in order to enhance the tumor image did not seem to be very effective, because the Ga-67 excretion was not only from normal tissue but tumor tissue as well. However, Ga-67 excretion from tumor was slower than that from non-tumor tissues. Furthermore, it was found that the effect of iron loading for malignant tumor and inflammatory lesion is more or less different. These observations, together with our findings with tumor-bearing animals, prompted us to propose the hypothesis for the uptake of Ga-67 in tumor.

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EVALUATION OF 1981 CASES OF GALLIUM-67 WHOLE BODY SCINTIGRAPHY USING RECTILINEAR SCANNER. N. Yui, T. Mamiya, F. Kinoshita and M. Koakutsu. Chiba Cancer Center Hospital. Chiba.

We have performed Ga-67 whole body scintigraphies using rectilinear whole body scanner on 1981 patients with various diseases from 1972 to 1980. The results and the diagnostic value in terms of detection of malignant tumors were discussed. In 75% of 862 untreated primary lesions the positive results were obtained and lung cancer, maxillary sinus cancer, sarcomas of extremities and malignant lymphomas of various type especially showed high positive rate. According to histological classification, sarcomas and malignant lymphomas showed much higher positive rate than carcinomas and there was no significant difference of sensitivities between squamous cell carcinoma and adenocarcinoma. Undifferentiated carcinoma had tendency of showing positive scans than other types of carcinoma. In 111 patients with malignant tumors of unknown origin, 38 patients were disclosed primary sites by Ga-67 whole body scintigraphy first and confirmed later by biopsy and other diagnostic methods.

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Analysis of 1353 Gallium-67 Scans. K. Yatomi, K. Suzuki, H. Orii Kawasaki City Hosp. Kawasaki, Metropol. Komagome Hosp. & Metropol. Inst. Med. Sci. Tokyo

A total of 1353 Ga-citrate scintigrams were studied during 1976 through 1981 (748 males and 605 females). A male predominance was found at the age of 60s and 70s. fifty-four % of patients were from internal medicine, 16 % from surgery, 11 % from OTR and 10 % from gynecology. The positive findings were classified according to the diseases: a high positive rate was found on lung cancer, esophageal cancer and hepatomas. Those of bone tumor, soft tissue tumors and intraorbital tumor was low. In 120 cases of malignant lymphomas, a positive rate of 67 % was obtained. Case study revealed that in many cases gallium scan was performed after chemotherapy. Gallium scans of patients with body weight loss was studied on 29 cases resulting almost negative findings, and for these patients, gallium scan should not be recommended.