
E. coli K12 strain was injected into the gastrocnemius muscle of mature rabbits unilaterally to produce inflammatory lesions. Changes in the accumulation of Ga as a function of the inflammation course were observed by using a tissue specimen for histological examination, scintigraphy, and autoradiography. Only one day after the production of inflammatory lesions, a large infiltration of neutrophils developed, and Ga accumulation was intense. Ga accumulation was as strong as 4 times normal. In 2 weeks, infiltration of cells began to decrease and granuloma formation and fibrosis become marked. The Ga accumulation ratio decreased to 1.7 times. In 3 or 4 weeks, granuloma formation and fibrosis were the main constituents of Ga accumulation. The Ga accumulation ratio approximated the normal side at 1.3 times normal. The best time for scintigraphy seems to be 48 hours after the administration of Ga-citrate. Ga accumulation was seen corresponding to the sites infiltrated with neutrophils.

DIAGNOSTIC EFFICACY OF Ga-67-CITRATE SCINTIGRAPHY IN INFLAMMATORY DISEASES. M. Ishi-zawa, Y. Komatsu, A. Suzuki, Y. Sakata, T. Kon, R. Itoh, T. Tadokoro, S. Tominari, H. Hiroaki University School of Medicine, Misawa City Hospital, and Goshogawara Seikyo Hospital.

Although Ga-67-citrate is a most extensively used agent for detecting tumors, its use for inflammatory processes is not well recognized yet. The authors reported 64 scans with Ga-67-citrate on patients who had strong clinical confirmation of inflammation. All scans obtained at 48 hours and 72 hours postinjection of 2 mCi of Ga-67-citrate. Abnormal accumulation of radiogallium was observed in a man with subacute thyroiditis, a female with acute pyelonephritis, and a man with acute appendicitis. In lung scans, Ga-67 positive lesions were observed in 7 of 14 patients with lung TB, 2 of 4 patients with acute bronchitis, 5 of 6 patients with pleuritis, 7 of 9 patients with pneumonia, and 3 of 4 cases with lung abscesses. Repeated lung scans revealed remarkable decrease in radioactivity on the Ga-67 positive lesions following adequate therapy. Our data show that Ga-67-citrate scintigraphy is a useful procedure of evaluating the severity and the stage of lung TB, pneumonia and sarcoidosis and the recovery from abscess of the lung.


Ga-67 scintigraphy was performed in 39 cases of lung cancer, 26 cases of malignant lymphoma, and 23 cases of esophageal cancer, before, during and after radiation therapy. Before radiation therapy, 94.7% of lung cancer, 93.3% of malignant lymphoma, and 74% of esophageal cancer were positive by Ga-67 scintigraphy. After radiation therapy, 11 cases of lung cancer, 3 cases of malignant lymphoma, 1 case of esophageal cancer are positive by both Ga-67 scintigraphy and clinically or histologically. Eight cases of lung cancer, 4 cases of malignant lymphoma, and 3 cases of esophageal cancer were positive by scintigraphy but negative histologically or clinically. Sixteen cases of lung cancer, 17 cases of malignant lymphoma and 15 cases of esophageal cancer were negative by scintigraphy but positive histologically or clinically. Two cases of lung cancer, 1 case of malignant lymphoma and 1 case of esophageal cancer were negative by both scintigraphic and histologically or clinically. These results indicate, Ga-67 scintigraphy is useful in 1) The staging of lung cancer and malignant lymphoma, 2) The estimation of the effects of radiation therapy, 3) The decision of necessity of further treatment, 4) The early detection of the radiation pneumonitis.