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EVALUATION OF BONE MARROW SCINTIGRAPHY WITH TC-99M-S-COLLOID IN MYELODYSPLASTIC SYNDROME. Y. Takahashi, H. Komaki, K. Satoh and K. Akasaka. RI Center and Hematology, Tenri Hospital.

Tc-99m-S colloid bone marrow scintigraphy was carried out to make pathognomotic and prognostic evaluation in 21 myelodysplastic syndromes (MDS) and 6 atypical aplastic anemias (Aty A) as an allied disorder. The scintigraphy was done in local spot preset-count mode for image quality. The pattern of the active marrow distribution was classified in 5 grade of peripheral extension and 7 types of distribution in the long bone ends.

In Aty A, the active marrow pattern was so similar to that observed in typical aplastic anemias that it was useful for discrimination from MDS on recognition of marrow hypoplasia.

In refractory anemias (RA) and sideroblastic anemias (SA) and RA with excess of blast (RAEB) in smoldering stage, peripheral extension of the marrow developed beyond proximal one third of humerus and femur (grade 2) or just beyond knee joint (grade 3) with metaphysis (M-type) or mid-shaft (IM-type) predominance. These patterns remained almost stationary.

As the disease evolved with enumeration of blasts from RAEB to RAEB in transform and further to overt leukemia, the marrow extended beyond wrist and foot joints (grade 4-b) with apparent or predominant epiphyseal activity (E- or EM-type). This alteration of the marrow pattern was synchronous with and characteristic to the disease stage.

Thus the marrow scintigraphy was significant in pathognomotic and prognostic viewpoint in these heterogeneous dyscrasias.

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CLINICAL EVALUATION OF In-111 CHLORIDE BONE MARROW SCINTIGRAPHY ON APLASTIC ANEMIA --FIVE CASES DEMONSTRATED MARKEDLY DECREASED ACCUMULATION ON BONE MARROWS--

A. Takeuchi, H. Anno, K. Ejiri, S. Koga, A. Ino* and M. Hirano* Department of Radiology, *Int. Med. Fujita Gakuen Health Univ. School of Med.

Twenty one patients with non-treated aplastic anemia was performed In-111 Chloride bone marrow scintigraphy. Markedly decreased accumulation of bone marrow scintigraphy were observed in five patients who were died within 3 months (4 pts.) except one treated with transfusion of red blood cells. Scan with moderately or slightly decreased activity of bone marrows were seen in 12 pts. who have good prognosis except one died with intracranial hemorrhage. Scans of 5 pts with poor prognosis demonstrated markedly decreased activity of bone marrows and showed accumulation of lung, kidney, cardiac blood pool and colon respectively. Most important factor to estimate the prognosis of aplastic anemia may be scintigraphically thought the degree of bone marrow accumulations.

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BONE MARROW IMAGING WITH IN-111 CHLORIDE IN HEMATOPOIETIC DISORDERS. H. Igari, Y. Ono, T. Ohkoshi, H. Kawashima, T. Nozawa and K. Matsui. Yokohama City University, Yokohama.

In-111 chloride scans of bone marrow were performed in 60 patients with varied hematological conditions, including aplastic anemia, multiple myeloma, myelofibrosis, leukemia and lymphomas.

Scintigrams were taken 48 hours after intravenous injection of 3mCi of In-111 chloride. In 8 out of 11 cases with aplastic anemia, there was a reduction in the uptake of In-111 chloride by the marrow. In 5 out of 7 cases with myelofibrosis, scan revealed increased activity in the spleen. This finding suggests that an increased In-111 splenic uptake is an evidence of extramedullary hematopoiesis. In the irradiated bone marrow, the accumulation of In-111 was inhibited. And, the scan was useful in selecting the bone marrow sites for biopsy. We conclude that In-111 bone marrow imaging is useful in evaluating marrow erythroid activity.

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STUDY ON Tl-201 SCINTIGRAPHY FOR HEMATOLOGICAL DISORDERS. T. Fujii, J. Hirayama, T. Kanbayashi, S. Kusama, F. Nakanishi, T. Kasuga, K. Yano, H. Ueda and M. Takizawa. Shinshu University School of Medicine, Matsumoto.

Clinical evaluation of Tl-201 scintigraphy for hematological disorders was examined in 43 cases by comparing with In-111 bone marrow scintigraphy, Ga-67 scintigraphy and Tc-99m-MDP scintigraphy.

Positive results of Tl-201 in bone marrow were obtained in 14 of 19 cases with polycythemia, 3 of 6 cases with malignant lymphoma, 2 of 2 cases with chronic myelocytic leukemia, one of 2 cases with multiple myeloma, one case with chronic lymphocytic leukemia and so on. In special, marked uptake of it was observed in 2 cases with polycythemia vera, 2 cases with sideroblastic anemia, each one case with hemolytic anemia, multiple myeloma and lymphosarcoma, in whom the sternum, thoracic vertebrae, skull, pelvis, femur and the others were visualized, and hypercellular bone marrow with erythroid, granulocytic, lymphocytic series or other abnormal immature cells was demonstrated. In several cases, Tl-201 image showed similar bone marrow distributions with In-111, Ga-67 and Tc-99m-MDP image, though some dissociation findings between those images were observed.

Tl-201 scintigraphy would appear to be useful in the diagnosis of myeloproliferative disorders.