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STUDIES ON RENAL SCANNING AGENTS. PART 9 CLINICAL EVALUATION OF NEW RENAL SCANNING AGENT. ---Tc-99m DMP---. H.Kurauchi,T. Machida,M.Miki,A.Tanaka,Y.Ohishi,M.Ueda, A.Kido,M.Yanagisawa and S.Shimada. The Jikei University School of Medicine. Tokyo.

New renal scanning agent, Tc-99m Dimercaptopropionic acid (DMP) was developed at our institution. We tried to evaluate the renal concentration of Tc-99m-DMP in clinical cases. For this study, 4 volunteers and 30 patients with renal diseases were selected. A dose of 2.8mCi was injected intraveneously per person. Serial renal scanning were performed at 30min,1h,2h and 3h after administration and preliminary kinetic data was estimated.

Exellent static renal images were obtained and the best was imaged at 2 hours after administration. Blood clearance and urinary excretion were very rapid and any side effect was observed.

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APPLICATION AND EVALUATION OF A QUANTITATIVE UPTAKE OF I-131-ADOSTEROL IN ADRENAL GLANDS WITH SPECT TECHNIQUE. J.Ishimura, K. Tachibana, K.Onoue, H.Kitani, M.Suehiro, M. Fukuchi and K.Nagai. Division of Nuclear Medicine, Hyogo College of Medicine. Nishinomiya.

The usefullness of adrenal imaging could be enhanced if a reliable quantitative uptake measurement was available. In this study reported here we developed a method for determining the percent uptake of I-131-adosterol in the adrenal gland using single photon emission computed tomography(SPECT) technique, and clinical application was performed for evaluating adrenal function.

Instrument used was a autotune ZS gamma camera(Maxi Camera 400A/T) with a computer (MaxiStar) on-line system. Eight hundred μCi of I-131-adosterol was given intravenously, and the total count of I-131-adosterol in adrenal gland was calculated by the sum of each sagital slice's counts which obtained by SPECT technique at 9 days after administration of I-131-adosterol. Then after, adrenal uptake of I-131-adosterol(μCi) was determined using data of our fundamental investigations with body phantom by same technique.

The data obtained in this series suggest that a quantitative uptake of I-131-adosterol with SPECT technique is valuable in evaluating adrenal function of clinical cases.

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I-131 META IODOBENZYL GUANIDINE (I-131 MIBG) SCINTIGRAPHY FOR PHEOCHROMOCYTOMA. M.Izumi,T.Tanabe,I.Morimoto,I.Kubo,K.Sato,T.Tanabe, S.Morita,S.Yamashita,S.Okamoto,S.Nagataki. The First Department of Internal Medicine, Nagasaki University, School of Medicine.
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Beierwaltes et.al. reported I-131 MIBG scintigraphy of pheochromocytoma. We happened to employ this method and found that this was clinically useful for detecting pheochromocytoma. MIBG (gift of Dr. Baulieu) was radioiodinated. Scintigraphy was undertaken one and two days after intravenous injection of 0.5mCi of I-131 MIBG. The subjects were one patient with pheochromocytoma, one patient with Sipple's syndrome and five patients with essential hypertension. A scintigram of the patient with pheochromocytoma showed clear accumulation of I-131 in a region which was correspronding to pheochromocytoma on the film of CT of the abdomen. A pheochromocytoma of the patient with Sipple's syndrome was found only in the left adrenal gland and X-ray films showed many metastatic lesions. After the removal of the pheochromocytoma, his blood pressure was still high, and the concentrations of serum calcitonin and catecholamine and urinary catecholamine remain increased. It was difficult to judge whether pheochromocytoma or medullary carcinoma metastasized to the lung. Clear accumulations of I-131 were observed in the metastatic lesion on I-131 MIBG scintigram. This indicates that the metastatic lesions of the lung are pheochromocytoma. In other five patients with essential hypertension, abnormal accumulations was not observed on I-131 MIBG scintigrams. These results revealed that I-131 MIBG scintigraphy is a very useful method to detect pheochromocytoma.