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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,
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New renal scanning agent, Tc-99m Di-
mercaptopropionic 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
intravenously per person. Serial renal
scanning were performed at 30min, 1h, 2h and
3h after administration and preliminary
kinetic data was estimated.

Excellent 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.
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The usefulness 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 per-
formed 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 μ Ci
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 sagittal slice's counts which obtained
by SPECT technique at 9 days after adminis-
tration of I-131-adosterol. Then after, adre-
nal uptake of I-131-adosterol (μ Ci) was de-
termined using data of our fundamental inves-
tigations with body phantom by same techniq-
ue.

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

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I-131 META IODOBENZYL GUANIDINE (I-131 MIBG)
SCINTIGRAPHY FOR PHEOCHROMOCYTOMA.
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Beierwaltes et.al. reported I-131 MIBG scinti-
graphy 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 under-
taken 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 corresponding 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 meta-
static lesions. After the removal of the pheochromo-
cytoma, 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.