323

EVALUATION OF RENAL FUNCTION DAMAGE IN EX-
PERIMENTAL OBSTRUCTIVE UROPATHY BY Tc-99m
DTPA RENOSCINTIGRAPHY. K.Suzuki,M.Mashimo,
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We attemped to evaluated   change of
renal function in obstructive uropathy.
Unilateral ureters of 18 dogs were ligated
completely by 2 hemocrips. These dogs were
classified 5 groups by ureter obstruction
periods(1W-5W). We evaluated the grade of re-
nal function damage after ureter was ligated
by Tc-99m DTPA renogram pattern on the each
groups. And also we evaluated the grade of
functional return after ureter was released.
The renogram pattern was classified by
Machida's classification(N,M1,M2,& L pattern
). And we added anew M3 pattern that was the
pattern between M1 and L. Pathological exam-
inations of obstructive kidneys were also
performed at the time of ureter release ope-
rations.
1. All cases, that ureter obstruction peri-
ods were longer than 3 weeks, showed L pat-
tern. 2. The renal function could be re-
turned in all groups. Even 5W group, reno-
gram patternswere returned from L to M3 by
80 days after ureter were released. Also non-
visualized kidneys, which were included L
pattern, could be returned to M3 pattern.
3. The pathological examination showed no
damage of glomerulus even 5W group.

324

RADIONUCLIDE RENAL STUDIES IN OBSTRUCTIVE
UROPATHY. T.Aburano,A.Tada,T.Michigishi,
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Diuretic Tc-99m DTPA renography assisted
with furosemide was performed in addition
to the routine radionuclide studies of Tc-
99m DTPA and Tc-99m DMSA, in order to im-
prove the diagnostic efficacy in obstruc-
tive uropathy. After hydration of 300ml of
water, 20mg of furosemide was injected i.v.
15min. following 8mCi of Tc-99m DTPA admin-
istration. Serial dynamic images were ob-
tained using scintillation camera every
3minutes up to 30min. And data were re-
corded on to a minicomputer system for 30
min. in 90frames. To evaluate the effect
of furosemide on urinary excretion, the
excretion half time ($T1/2$) was obtained
from the faster component on the Tc-99m
DTPA excretion curve by two compartment
analysis. $T1/2$ of upper limit of normal
value was 2.5min. 80% of patients with
obstruction showed a prolonged $T1/2$. And
57% of patients with non-obstructive renal
parenchymal damage also showed a prolonged
$T1/2$. However, radionuclide retention in
the pelvicalyceal system and obstructive
renogram were rarely seen in the patients
with renal parenchymal damage, althogh
frequently seen in patients without obst-
ruction. With the combined criteria of ob-
structive findings and prolonged $T1/2$, 71%
of obstructive patients were correctly
detected, and only 5% of false positives
were observed.

327

RENAL DYNAMIC STUDY BY USING I-123-HIPPU-
RAN. K.Sueyoshi, T.Takase, H.Ishida,
S.Shirakawa, M.Takeuchi, M.Sekimoto,
H.Akagi. Osaka Medical College, Takatsuki.

Renal dynamic study by using 1mCi of
I-123-Hippuran was performed in 60 various
renal diseaes. Each Tmax, T3/4 max, and
T1/2max on regional renogram curve of renal
parenchyma, pelvis and whole kidney was
calculated in normal cases, and evaluated
its usefulness with renal dynamic images.
Each parameter was compared with conventio-
nal renogram's parameter using I-131-Hippu-
ran. Each parameter using I-123-Hippuran
was more accurate than the conventional
method using I-131-Hippuran.
Renal hypofunctions were classified
into two types, a type of damaged paren-
chyma and of mild obstruction, by each
parameters and dynamic images. In severe
urinary obstructed type, renal parenchy-
mal disfunction was estimated.

328

CLINICAL EVALUATION OF SCINTILLATION CAMERA
RENOGRAPHY WITH I-123-OIH. J.Ishimura, K.Ta
chibana, H.Kitani, A.Kido, M.Hara, T.Morita,
M.Fukuchi and K.Nagai. Division of Nuclear
Medicine, Hyogo College of Medicine. Nishi-
nomia.

Scintillation camera renography with I-
123-Orthoiodohippurate (I-123-OIH) was per-
formed in 50 patients for clinical evalua-
tion. The instrument was a gamma camera wi-
th a 3,300-hole HEHS parallel collimator
and a computer on-line system. Each patient
received 700 μci of I-123-OIH intravenously
by bolus injection. The data were accumula-
ted on disk for renograms of whole kidney,
dynamic images, regional renograms and fun-
ctional images. The analysis of renograms
of whole kidney was possible as well as I-
131-hippuran. Dynamic images with 2 minutes
intervals were indicated morphological in-
formation of shapes of kidney and urinary
tract. Regional renograms on cortex and
pelvis were useful to make the diagnosis of
the obstructive portion. Functional images
were made by 7 data formats i.e. CM, TM, Tl
, HT, Al, A2 and AT. The images of HT
were useful to follow up the clinical cour-
ses of glomerulonephritis. The images of CM
and TM were observed characteristically in
hypofunctional kidney and renosclerosis.
The studies in this series suggested dyna-
mic images, regional renograms and functio-
nal images with I-123-OIH provide more cli-
nical utility than I-131-hippuran.