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Imaging and Treatment of B-Cell Lymphoma

The evaluation protocol involved collecting biodistribution data by quantitation of gamma camera images and by tumor biopsy from trace-labeled doses of antibody. Each patient received up to three escalating mass doses of labeled antibody to determine the amount that yielded the most favorable biodistribution for treatment.

Page 1257

Serial Changes in Myocardial Perfusion Using Tomographic Technetium-99m-Hexakis-2-Methoxy-2-Methylpropyl-Isonitrile Imaging Following Reperfusion Therapy of Myocardial Infarction

Tomographic imaging with Tc-Sestamibi appears to have promise as a tool for assessing sequential changes in myocardial perfusion following therapy. Improvement in perfusion is often evident by 18 to 48 hr, although the full extent of improvement is not evident until much later.

Page 1269

Pulmonary Ventilation and Perfusion Abnormalities and Ventilation Perfusion Imbalance in Children with Pulmonary Atresia

The authors describe patient studies of the ventilation-perfusion lung scan in terms of its use as a non-invasive method of assessing pulmonary ventilation and perfusion.

Page 1276

HIPDM-SPECT Brain Imaging in the Post-surgical Evaluation of Patients with Intractable Seizures

Interictal HIPDM-SPECT brain studies in 34 patients revealed decreased rCP in the temporal lobe, corresponding to the site of surgery in 73% of the patients. Similarly, ictal studies demonstrated a 93% increase in rCP in the same group.

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In This Month's Issue of JNM

Pharmacokinetics of Technetium-99m-MAG₃ in Humans

The authors offer extensive pharmacokinetic studies performed in patients to support the use of o-iodohippuric acid (OIH) in renal function studies. The studies suggest that ⁹⁹⁹mTc-MAG₃ has a higher plasma-protein binding, higher intravascular concentration, and lower clearance than OIH.

Page 1285

Transfer Function Analysis of the Ventricular Function: A New Method for Calculating Right Ventricular Ejection Fraction

To evaluate the effect of ROIs on RVEF, results of the transfer function analysis (TFA) technique using precise ROI, TFA using rectangular ROI and manual first-pass (MFP) ROI were compared in 95 cases (50 by digital, 45 by analog camera).

Page 1294

Editorial: Radiouclide Angiography Revisited

Page 1300

Improved Detection of Anterior Left Ventricular Aneurysm with Multiharmonic Fourier Analysis

Single and multiharmonic Fourier analysis of LAD 30-45° gated blood-pool studies were performed in a selected group of 30 patients with a left ventricular anterior aneurysm proven by contrast angiography. Multiharmonic analysis clearly improved sensitivity of the diagnosis.

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Quantitative In Vivo Measurements of Tumor

Page 1307

Perfusion Using Rubidium-81 and Positron Emission Tomography

An investigation of ⁸¹Rb as a tumor tracer resulted in an average perfusion of 13.5 ml/min/100 g in tumor and 3.7 in normal muscle. The extraction fraction ranged from 0.94 to 1.00. No significant redistribution of ⁸¹Rb in these tissues was noted in the first hour after injection.

Page 1307

Clinical and Clinicopathologic Response of Canine Bone Tumor Patients to Treatment with Samarium-153-EDTMP

Both primary and metastatic lesions in a group of 40 dogs were treated with ¹⁵³Sm-EDTMP. Two treatment doses were tested and responses were varied. No significant differences between the two treatment groups were noted.

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Editorial: Systemic Radioisotopic Therapy of Primary and Metastatic Bone Cancer

Page 1326

Synthesis and Preliminary Evaluation of [¹¹C]-Meta-Hydroxyephedrine: A False Transmitter Agent for Heart Neuronal Imaging

Biodistribution studies in rats revealed high myocardial uptake. Pre-treatment with desipramine, a drug known to selectively block neuronal uptake resulted in a 92% decrease in tracer accumulation. Metabolic studies in guinea pigs showed less than 5% metabolites in heart tissue 30 min after i.v. injection.

Page 1328

Simultaneous In Vitro and In Vivo Validation of Nitrogen-13-Ammonia for the Assessment of Regional Myocardial Blood Flow

Input function was assessed in six open-chested anesthetized dogs by...
serially sampling arterial blood and
by acquiring serial PET scans
following an i.v. bolus of 13N-
ammonia ......................................Page 1335

Ventricular Performance and
Glucose Uptake in Rats during
Chronic Hypobaric Hypoxia

Radionuclide angiograms and
quantitative autoradiography were
performed on rats maintained either
for two weeks in hypobaric hypoxia
or in air. The relative increase of RV
2-[14C]DG uptake measured during
hypoxia may provide a metabolic
correlate for the decreased RVEF
and increased RV work. ........................Page 1344

Effect of Regional Myocardial
Ischemia on Sympathetic Nervous System as Assessed by
Fluorine-18-Metaraminol

Six dogs were injected with 1-3 mCi
of FMR following 30 min occlusion
of the LAD artery. Six sham
animals served as a control group.
Regional myocardial blood flow
decreased 87% during ischemia, but
was not significantly different from
remote myocardium during reperfu-
sion ..............................................Page 1352

Inhomogeneous Deposition of
Radiopharmaceuticals at the
Cellular Level: Experimental
Evidence and Dosimetric
Implications

Distribution of radiolabeled
microlite was studied quantitatively
in mouse liver at millimeter and
micrometer cellular levels. Dose
estimates derived for Kupfer cells
were then compared to those
obtained employing the assumptions
of conventional dosimetry. ........................Page 1358

Validation Studies of
Iodine-123-Iodoamphetamine
as a Cerebral Blood Flow
Tracer Using Emission
Tomography

In seven normal volunteers,
IMP/SPECT CBF measurements
were calculated using a two-
compartment model and then were
compared with the results of PET
CBF measurements utilizing (O15)-
H2O. The results provide further
support for IMP as a cerebral blood
flow tracer .....................................Page 1364

A Neutral Lipophilic
Technetium-99m Complex for
Regional Cerebral Blood Flow
Imaging

After i.v. administration, the con-
centration of technetium complexes
in various regions of the brain
appeared to be proportional to blood
flow. Autoradiographs of monkey
brain sections showed excellent
regional detail at 10 min post-
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Localization of Pulmonary
Human Sarcoma Xenograft in
Athymic Nude Mice with
Indium-111-Labeled Monoclonal
Antibodies

The specific binding of 111In-SCN-
Bz-DTPA labeled MoAB 19-24 to
pulmonary xenografts without
appreciable liver uptake indicates
that it may be useful in the clinical
localization of pulmonic metastatic
lesions ..........................................Page 1378

Effects of Propylthiouracil on
the Biodistribution of an
Iodine-131-Labeled Anti-
Myeloid Antibody in Normal
Dogs: Dosimetry and Clinical
Implications

The authors attempted to prolong
the retention of radioiodine in
marrow through the use of propyl-
thiouracil (PTU). Their results
suggest that PTU's inhibition of
deiodinases resulted in longer
residence time of the radionuclide in
its target tissue, without adversely
affecting distribution or dosimetry. .........Page 1384

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Myocardial Scintigraphy:
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or 24 Hour-Delayed Imaging? .............Page 1390

Post-Atelectatic Ventilation-
Perfusion Mismatch
Simulating a Pulmonary
Emboli

A pulmonary arteriogram of a 17-yr-
old male revealed no evidence of
embolic disease, though there was
reduced capillary phase opacifica-
tion of the right lung and increased
pulmonary artery pressure. .......................Page 1397

Quantitative Analysis of Planar
Technetium-99m-Isonitrile
Myocardial Perfusion Images
Using Modified Background
Subtraction

The modified algorithm was com-
pared to standard background sub-
traction in 16 patients, all of whom
had both exercise-delayed 201TI and
exercise-rest [99mTc]MIBI imaging. ...............Page 1400

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SPECT Quantification of
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After Carotid Endarterectomy

Pre- and postoperative studies were
compared for 20 patients. The
authors conclude that regional quan-
tification of redistribution can provide
an index of improved perfusion and
that quantitative criteria are impor-
tant for the detection of contralateral
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Volume Rendering in Three-
Dimensional Display of SPECT
Images

Image contrast and noise
characteristics were analyzed for
depth-weighted maximum activity
projection. Contrast in the rendered
images was nearly equal to that in
slice display and substantially
improved when compared to planar
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