
The Journal of Nuclear Medicine

JNM

Volume 32, Number 6 • June 1991

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The Official Publication of
The Society of Nuclear Medicine, Inc.

In Vivo SPECT Quantitation of Bone Metabolism in Hyperparathyroidism and Thyrotoxicosis

Bone metabolism was assessed in vivo and noninvasively using quantitative SPECT. Effect of endocrine abnormalities on bone metabolism was studied in 27 patients with primary hyperparathyroidism and in 12 patients with thyrotoxicosis. Quantitative bone scintigraphy values of ^{99m}Tc-MDP uptake were compared to normal values matched for sex and age. Page 1157

Pharmacokinetics, Immune Response and Biodistribution of Iodine-131-Labeled Chimeric Mouse/Human IgG1, k 17-1A Monoclonal Antibody

The pharmacokinetics, immunogenicity, and biodistribution of ¹³¹I-labeled mouse/human chimeric monoclonal antibody were studied in six patients with metastatic colon cancer. Page 1162

Measurement of Receptor Concentration and Forward-Binding Rate via Radio-pharmacokinetic Modeling of Technetium-99m-Galactosyl-Neoglycoalbumin

Images recorded with ^{99m}Tc-NGA, a synthetic ligand that binds to the hepatocyte receptor, were analyzed with a five-compartment mathematical model. This analysis permits a quantitative estimation of physiologic and biochemical parameters in the liver. Page 1169

Validation of In Vivo Receptor Measurements via In Vitro Radioassay: Technetium-99m-Galactosyl-Neoglycoalbumin as a Prototype Model

The correlation between receptor parameters measured in vivo via kinetic modeling of ^{99m}Tc-NGA and those measured by in vitro radioassay of biopsied liver tissue was studied in eleven patients with diffuse hepatic disease. Page 1177

Editorial: A Perspective: In Vivo Assay of Receptor-Ligand Binding

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In Vivo Use of a Radioiodinated Somatostatin Analogue: Dynamics, Metabolism, and Binding to Somatostatin Receptor-Positive Tumors in Man. Page 1184

Editorial: Receptors on Tumors Studied with Radionuclide Scintigraphy. Page 1189

Quantification of *Helicobacter Pylori* Infection in Gastritis and Ulcer Disease Using a Simple and Rapid Carbon-14-Urea Breath Test

Gastric urease was studied isotopically in 230 patients with biopsy-proven normal mucosa or chronic gastritis, including 59 patients with ulcer disease. All patients underwent endoscopy, and antral biopsies were semiquantitatively graded by the pathologist for *Helicobacter pylori* colonization, severity, and activity of the gastritis. Page 1192

Evaluation of Right Ventricular Regional Perfusion with Technetium-99m-Sestamibi SPECT

Twenty-five normal volunteers and 25 patients with suspected coronary disease were studied with both sestamibi and ²⁰¹Tl SPECT. All patients underwent cardiac catheterization. Page 1199

Brain Perfusion Is Abnormal in Cocaine-Dependent Polydrug Users: A Study Using Technetium-99m-HMPAO and ASPECT

A group of cocaine-dependent polydrug users were studied with ^{99m}Tc-HMPAO and high-resolution SPECT. Their perfusion patterns were compared to cerebral perfusion in a group of older control subjects. Page 1206

Uptake of Carbon-11-Methionine and Fluorodeoxyglucose in

Hodgkin's Lymphoma: A PET Study

Uptake of ¹¹C-methionine and FDG was studied with PET in 14 patients with non-Hodgkin's lymphomas. Tracer accumulation was analyzed according to Patlak and Gjedde. Page 1211

The Selenium-75-Homocholic Acid Taurine Test Reevaluated: Combined Measurement of Fecal Selenium-75 Activity and 3 α -Hydroxy Bile Acids in 211 Patients

The recommended reference values for the ⁷⁵SeHCAT test, used in the analysis of chronic diarrhea, were evaluated in 211 patients by comparing simultaneous measurements of bile acids and ⁷⁵Se activity in stools collected daily. Page 1219

Brain and Brain Tumor Uptake of L-3-[¹²³I]Iodo- α -Methyl Tyrosine: Competition with Natural L-Amino Acids

SPECT studies with IMT were carried out in patients with different types of brain tumors under fasting conditions and later, during intravenous infusion of a mixture of naturally-occurring L-amino acids. Page 1225

Editorial: Saturation of Amino Acid Uptake by Human Brain Tumor Demonstrated by SPECT

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Morphine-Augmented Cholescintigraphy: Its Efficacy in Detecting Acute Cholecystitis

After administration of 185 MBq of ^{99m}Tc-mebrofenin or disofenin, cholescintigrams were performed on 158 patients suspected of having acute cholecystitis. Morphine sulfate was given intravenously if there was non-visualization of the gallbladder at 40-60 min provided that radiotracer was seen within the small bowel. Page 1231

Editorial: Is Morphine Injection Useful in Scintigraphic Diagnosis of Acute Cholecystitis? Page 1233

The Pharmacokinetics and Biodistribution of Technetium-99m-(V)Dimercaptosuccinic Acid in An Animal Tumor Model

An established rabbit tumor model with squamous carcinoma was used to evaluate the pharmacokinetics and biodistribution of ^{99m}Tc-DMSA acid in 54 rabbits, 29 of which had tumors. Page 1235

Nuclear Imaging Analysis of Low-Density Lipoprotein Biodistribution in Animals and Humans

Biodistribution was assessed after intravenous injection of labeled LDL by quantitative analysis of scintigrams, counting of excreta, and counting of tissues at necropsy. Adrenals were visualized in normolipemic animals with ¹²³I-normolipenic animals with ¹²³I-tyramine cellobiose-LDL but not with ^{99m}Tc-LDL. Page 1239

The Reproducibility of Striatal Uptake Data Obtained with Positron Emission Tomography and Fluorine-18-L-6-Fluorodopa Tracer in Non-Human Primates

Striatal fluorodopa uptake rate constants were derived by graphical analysis of transaxial slice images centered on the striata. The utility of the technique was demonstrated by a comparison of the effects of anesthesia and administration of NSD 1015 on the scans. Page 1246

Editorial: The Influence of Positioning on Accuracy and Precision in Emission Tomography. Page 1252

Localization and Visualization of Pulmonary Emboli with Radiolabeled Fibrin-Specific Monoclonal Antibody

Indium-111-labeled monoclonal antibody 64C5 was used to image

experimental pulmonary emboli in six dogs. Uptake of the labeled antibody and a control were compared in 10 clots identified in the lungs. Page 1254

Clinicopathologic Conferences: The Role of Hepatobiliary Imaging in the Evaluation and Management of Patients with Common Bile Duct Gallstones. Page 1261

Malignant Transformation of a Hürthle Cell Tumor: Case Report and Survey of the Literature

A case of anaplastic Hürthle cell carcinoma in an 81-yr-old woman illustrates the propensity of this uncommon, well-differentiated thyroid carcinoma to undergo malignant transformation. Page 1266

Naloxone Reverses Pattern of Obstruction of the Distal Common Bile Duct Induced by Analgesic Narcotics in Hepatobiliary Imaging

Three case reports demonstrate the value of intravenous naloxone hydrochloride for differentiating narcotic-induced spasm of the Sphincter of Oddi from true obstruction of the common bile duct. Page 1270

Dynamic Acquisition with a Three-Headed SPECT System: Application to Technetium-99m-SQ30217 Myocardial Imaging

A method for rapid SPECT data acquisition was developed and applied to the dynamic imaging of ^{99m}Tc-SQ30217 to evaluate the method's utility. Page 1273

Accurate Scatter and Attenuation Correction of SPECT Projections for Extended Sources in a

Nonhomogeneous Object: A Monte Carlo Study

A correction method is described where nonuniform density maps are used in attenuation correction. Correction for nonuniform scatter is made by a convolution technique based on scatter line-spread functions calculated for different locations inside a clinically realistic, nonhomogeneous, computer phantom. Page 1278

Treatment of Compton Scattering in Maximum-Likelihood, Expectation-Maximization and Reconstructions of SPECT Images

The authors study the extent to which lesion contrast and signal-to-noise ratios in maximum-likelihood, expectation-maximization estimates of SPECT images can be improved by considering Compton scattering when calculating the photon detection probability matrix. Page 1285

Editorial: Correction for Patient Compton Scattering—Current Status. Page 1291

Estimation of Glomerular Filtration Rate in Infants and Children Using a Single-Plasma Sample Method

GFR calculated using the two-blood sample slope-intercept method was used for comparison to show that the 2-hr distribution volume and the two-blood sample clearance were closely related. Page 1294

Editorial: Glomerular Filtration Rate in Children: Where We Have Been; Where We Are Going. Page 1297

Continuing Education: Procedures of Choice in Renal Nuclear Medicine. Page 1301