
The Journal of Nuclear Medicine

JNMM

Volume 32, Number 12 • December 1991

2199 Quantification of Hepatic Arterial Blood Flow

2253 Differential Tracer Washout

2306 Reference Range Determination

2318 Biological Background Subtraction

A Full Table of Contents Begins on Page 4A, Annotations on Pages 7A-8A



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

Noninvasive Quantification of Hepatic Arterial Blood Flow with Nitrogen-13-Ammonia and Dynamic Positron Emission Tomography

Six anesthetized dogs and eight healthy human volunteers were examined with PET following intravenous bolus injections of ¹³N-ammonia to determine if dynamic PET can be used with this tracer to quantitate regional hepatic arterial blood flow noninvasively... *Page 2199*

Editorial: The Development and Application of Mathematical Models in Nuclear Medicine

..... *Page 2206*

Detection of Infection in Postoperative Orthopedic Patients with Technetium-99m-Labeled Monoclonal Antibodies Against Granulocytes

A prospective study of 106 orthopedic patients was undertaken for the detection of infection in the early postoperative stage using ^{99m}Tc-murine Mabs directed against epitopes on granulocytes... *Page 2209*

Assessment of Right Ventricular Overload by a Thallium-201 SPECT Study in Children with Congenital Heart Disease

Thallium-201 planar and SPECT studies were performed in 38 children with congenital heart disease using high-resolution three-headed SPECT..... *Page 2215*

Influence of Left Ventricular Mass on the Diagnostic Accuracy of Myocardial Perfusion Imaging Using Positron Emission Tomography with Dipyridamole Stress

Seventy-five patients without previous infarction, and with known coronary anatomy, were studied by echocardiography and PET to assess the influence of left ventricular hypertrophy on the accuracy of myocardial perfusion imaging using pharmacologic coronary vasodilation. *Page 2221*

Clinical Evaluation of a Scintigraphic Method for Diagnosing Inflammations/Infections Using Indium-111-Labeled Nonspecific Human IgG

Forty patients suspected of having infection/inflammation were examined as part of a Phase II study to assess the sensitivity and safety of ¹¹¹In-DTPA-human IgG. *Page 2227*

A Quantitative Model of Technetium-99m-DTPA-Galactosyl-HSA for the Assessment of Hepatic Blood Flow and Hepatic Binding Receptor

Technetium-99m-GSA was studied in 4 healthy volunteers and in 18 patients with impaired liver function: seven with chronic hepatitis, seven with compensated liver cirrhosis and four with decompensated liver cirrhosis..... *Page 2233*

The Role of Bone Scintigraphy in the Evaluation of Talar Dome Fractures

A retrospective study of 122 patients with ankle pain was undertaken to determine the accuracy of bone scintigraphy using ^{99m}Tc-MDP for the detection of osteochondral talar bone fractures..... *Page 2241*

Reference Values for Red Cell Survival Times

The authors investigated the use of the Dornhurst function and the weighted-mean method to calculate reference values for the mean red cell survival time, with and without correction, for elution of the tracer in 35 young males..... *Page 2245*

Significance of Intensity of Delayed Activity During Technetium-99m-RBC Gastrointestinal Bleeding Study

Delayed concentration of radioactivity

was compared to liver blood-pool activity in 27 patients with normal hepatic function..... *Page 2249*

Effect of Differential Tracer Washout During SPECT Acquisition

Computer simulations were used to estimate the effect of differential clearance at different sites in the myocardium on the apparent severity of ischemia in the reconstructed data. *Page 2253*

Application of (Methyl-¹¹C)-Methionine in the Multicellular Spheroid System

A technique for the rapid and non-destructive evaluation of metabolism in multicellular spheroids using an amino acid labeled with the short-lived radionuclide ¹¹C is described. *Page 2258*

Fluorine-18-Altanserine: A Potential Radioligand for the Study of Serotonin Receptors: Radiolabeling and First Animal Studies

The radiosynthesis of [¹⁸F]altanserine by nucleophilic fluorination of the corresponding nitro derivative is reported. Rat experiments, including general and regional biodistribution as well as carrier and blocking effects, are described..... *Page 2266*

Poor Technetium-99m-DMSA Renal Uptake with Near Normal Technetium-99m-DTPA Uptake Caused by Tubulointerstitial Renal Disease

In a patient with tubulointerstitial renal disease, DMSA uptake did not correlate with global renal function, but rather with the functioning tubular mass..... *Page 2273*

Gallbladder Visualization During Post-Therapy Iodine Imaging of Thyroid Carcinoma

A case of ¹³¹I localization within a septated gallbladder, initially mimicking an isolated hepatic metastasis is reported. Adjunctive

scintigraphy helped to elucidate the true nature of the activity... *Page 2275*

Metastatic Angiosarcoma with Thrombocytopenia and Intratumoral Indium-111-Platelet Deposition

Scintigraphic imaging with ¹¹¹In oxine-labeled autologous platelets demonstrated localization of platelets at sites of metastatic tumor. *Page 2278*

Localization of Recurrent Medullary Thyroid Carcinoma with Technetium-99m-Methoxyisobutylisnitrile Scintigraphy: A Case Report

MIBI localized in a metastatic medullary thyroid carcinoma in a 46-yr-old female who underwent total thyroidectomy and modified block dissection of right cervical nodes. *Page 2281*

Thallium-201 SPECT Depicts Radiologically Occult Lung Cancer

Thallium SPECT of the chest clearly delineated the involved area of a case of radiologically occult lung cancer. *Page 2284*

Residual Spleen Found on Denatured Red Blood Cell Scan Following Negative Colloid Scans

A patient with idiopathic thrombocytopenic purpura, who had been evaluated with a ^{99m}Tc-sulfur colloid scan which did not demonstrate splenic uptake, was subsequently subjected to a denatured red blood cell scan, revealing intensive focal activity in the region of the splenic bed. *Page 2286*

Cellular Basis for Elevated Gallium-67 Computed Lung Indices in a Rheumatoid Lung Patient

The authors report significant ⁶⁷Ga uptake in a patient with a rheumatoid

lung as measured by computer indices. *Page 2288*

Myocardial Accumulation of Monoclonal Antimyosin Fab in Hypertrophic Cardiomyopathy and Postpartum Cardiomyopathy

Indium-111-antimyosin Fab scans were performed in patients with hypertrophic and postpartum cardiomyopathies to assess whether myocardial damage could be delineated. *Page 2291*

Bone Marrow Regeneration After Hormonal Therapy in Patients with Bone Metastases from Prostate Carcinoma

Radioimmune imaging of bone marrow in two patients treated with hormonal therapy for prostate carcinoma and bone metastases demonstrated the absence of granulopoietic marrow in extensive regions of the central and proximal peripheral skeleton. *Page 2295*

Clinicopathologic Conferences: Applications of Gallium-67 Scintigraphy in the Management of Patients with Malignant Lymphoma. *Page 2299*

Reference Range Determination: The Problem of Small Sample Sizes

To determine a reference range prior to development and validation of a quantitative test, the authors suggest an approach that involves calculating confidence levels for upper and lower bounds of the defined range and recognizing three ranges of values: normal, indeterminate, and abnormal. *Page 2306*

Three-Dimensional Motion and Perfusion Quantification in Gated Single-Photon Emission Computed Tomograms

Using previously documented surface

detection methods, the authors have developed techniques for the calculation of global variables, such as volume and area, and for local variables, such as segmental motion and local perfusion, from gated tomographic radionuclide ventriculograms. *Page 2311*

Biological Background Subtraction Improves Immunoscintigraphy by Subsequent Injection of Antigen

The effect of an injection of a small amount of t-Pa after administration of a labeled anti-t-Pa antibody for immunoscintigraphy was examined in six rabbits. *Page 2318*

Editorial: Immunoscintigraphy of Thrombi. *Page 2321*

Technetium-99m-RBC Venography in the Diagnosis of Deep Venous Thrombosis of the Lower Extremity: A Systematic Review of the Literature

Six articles published since 1979, which compared ^{99m}Tc-RBC venography with contrast venography for the diagnosis of deep venous thrombosis of the lower extremities, were systematically reviewed. *Page 2324*

Editorial: Diagnostic Accuracy and Deep Venous Thrombosis: A Biostatistician's Perspective. *Page 2328*

Continuing Education: The Art of Bone Scintigraphy: Technical Aspects. *Page 2332*

Council Report: Performance Standards in Positron Emission Tomography. *Page 2342*

Commentary: Clinical PET—A Modest Proposal. *Page 2351*