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Mucociliary Clearance and Transport in Bronchiectasis	543
Clinical Effects of Sm-EDTMP	586
Continuous-Slice PENN-PET	617
Osteosarcoma Soft-Tissue Metastases	679

A Full Table of Contents Begins on Page 3A, Annotations on Pages 7A-8A



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Mucociliary Clearance and Transport in Bronchiectasis: Global and Regional Assessment

Global and regional mucociliary clearance and transport were studied in 20 patients with bronchiectasis. Regional abnormalities in mucociliary transport seemed to be responsible for the development of infections and hemoptysis. Page 543

Indium-111-Leukocyte/Technetium-99m-MDP Bone and Magnetic Resonance Imaging: Difficulty of Diagnosing Osteomyelitis in Patients with Neuropathic Osteoarthropathy

Fourteen patients with clinical and/or radiographic evidence of neuropathic osteoarthropathy were evaluated with ¹¹¹In-WBC and ^{99m}Tc-MDP bone imaging for suspected osteomyelitis. Both techniques appeared effective for detecting osteomyelitis. However, findings at sites of rapidly progressing, noninfected, neuropathic osteoarthropathy may be indistinguishable from osteomyelitis. Page 549

Effects of Beta-Adrenergic Blockade in Acute Myocardial Infarction: Evaluation by Radionuclide Ventriculography

These studies indicate that left ventricular contractility is reduced in patients with acute myocardial infarction and that beta-adrenergic blockage further decreases ventricular performance. Page 557

Thallium-201 Scintigraphy in Bone Sarcoma: Comparison with Gallium-67 and Technetium-99m-MDP in the Evaluation of Chemotherapeutic Response

Thirty-eight patients with surgically proven sarcomas were evaluated. Thallium studies were superior to ^{99m}Tc-MDP bone scans and gallium

studies in predicting tumor response to chemotherapy. The authors conclude that ²⁰¹Tl is a sensitive radiopharmaceutical for detection of bone sarcoma and appears to be an accurate test for evaluating response to specific therapeutic regimens. Page 567

In Vivo SPECT Imaging of CNS D-2 Dopamine Receptors: Initial Studies with Iodine-123-IBZM in Humans

Preliminary imaging studies showed specific localization in the basal ganglia of the brain. At 2 hr after an injection, brain uptake was 3.72% of injected dose, diminishing to 0.7% after 20 hr. Dosimetry and pharmacology data suggest that the agent is safe for use in humans. Page 573

Quantitative Assessment of Blood Flow in Pediatric Recipients of Renal Transplants

A renal blood flow quantification technique was applied to pediatric data. Very low blood flow values within 24 hr of transplantation may have prognostic significance. Patients requiring transplant nephrectomy had lower RBF/CO values than children who retained their allograft. Page 580

Clinical and Clinicopathologic Effects of Samarium-153-EDTMP Administered Intravenously to Normal Beagle Dogs

Doses calculated to irradiate an acute bone lesion arising from cancer metastasis ranging from palliative to therapeutic were administered to dogs to determine the degree of acute bone marrow and vital organ injury sustained. All hematologic parameters returned to

normal within six weeks of last injection, indicating potential for the compound as a therapeutic radiopharmaceutical Page 586

Radioisotopic Pulmonary Lobectomy: Feasibility Study in Dogs

Large doses of radiation, on the order of 1,500 Gy, were effectively delivered to a selected lobe to produce a "radioisotopic pulmonary lobectomy." The authors suggest the procedure may be useful in patients to destroy inoperable cancers of the lung. Page 594

Editorial: Internally Administered Isotopes in the Treatment of Solid Malignancy Page 601

A New Apparatus for Brain Imaging: A Four-Head Rotating Gamma Camera Single-Photon Emission Computed Tomograph

High sensitivity and high speed rotational acquisition capabilities enable dynamic SPECT studies to be carried out with a new four-head gamma camera. Page 603

Design and Performance of POSICAM 6.5 BGO Positron Camera

Design, testing, and preliminary results from a new high-resolution, whole-body positron camera are presented Page 610

Continuous-Slice PENN-PET: A Positron Tomograph with Volume Imaging Capability

A new positron tomograph composed of a hexagonal array of position-sensitive NaI(Tl) detectors, offers high spatial resolution in three dimensions and high sampling density along all three axes without scanner motion Page 617

Editorial: Advances in Emission Tomography: Quo Vadis?Page 628

A Full-Field Modular Gamma Camera

A modular gamma ray camera that gives useful image information over its entire crystal face is described. Results from a prototypical module, which has an active crystal area of 10 cm x 10 cm, are presented.....Page 632

Effect of Glucose on the Distribution of Iodine-123-16-Iodo-9 Hexadecenoic Acid Between Esterification and Oxidation in Canine Myocardium

Six fasting dogs perfused with a solution lacking glucose and seven fasting dogs perfused with glucose and insulin were injected intravenously with [¹²³I]IHA. Four different methods were used to analyze the myocardial time-activity curves and calculate distribution of IHA between oxidation and esterification.....Page 640

The Characterization of IBF as a New Selective Dopamine D-2 Receptor Imaging Agent

Biodistribution in rats indicated that IBF concentrated in the striatum region, displaying a high target-to-nontarget ratio. In vitro binding studies suggest IBF binds selectively to D-2 dopamine receptors with high affinity and low nonspecific binding. Planar images demonstrated that D-2 receptors can be visualizedPage 648

Collimator Angulation Error and its Effect on SPECT

A technique for measuring septal angulation errors over the entire collimator surface to ± 0.05 is described. A simple computer simulation is used to estimate tolerance levels.....Page 655

Autoradiographic Analysis of IMP Redistribution in Experimental Brain Ischemia

A double radionuclide autoradiographic study suggests that IMP redistribution in the ischemic area is due to physical (flow-related), rather than biologic phenomenaPage 660

Iodine-123-HIPDM Lung Imaging in Pulmonary Vein-Banded Pulmonary Hypertension

To evaluate the use of iodine-123 lung imaging for the diagnosis of individual pulmonary stenosis, an established pulmonary venous hypertension model in male rats was used. The authors hypothesize that the resulting high uptake in banded lungs was due to either activation of endothelial receptors or an increase in the number of such receptors.Page 668

Clinical Pathologic Conference: Renal Scintigraphy in Renovascular Hypertension Secondary to Stenosis of a Supplemental Renal Artery.....Page 674

Scintigraphic Appearance of Uncommon Soft-Tissue Osteogenic Sarcoma Metastases

Improved chemotherapy has changed the course of osteosarcoma. The role of bone scintigraphy in the workup of metastatic osteosarcoma is being reevaluated. In this case, there is uptake in lung lesions and by noncalcified metastases to the brain and to soft tissues of the leg and armPage 679

Appearance of Acute Gouty Arthritis on Indium-111-Labeled Leukocyte Scintigraphy

While acute gouty arthritis is a potential pitfall in labeled leukocyte imaging, the authors offer a case report that suggests it may also have

potential as a noninvasive method for evaluating patient response to therapyPage 682

Editorial: Radionuclide Imaging of Joint Inflammation in the '90sPage 684

The Utility of Cerebral Blood Flow Imaging in Patients with The Unique Syndrome of Progressive Dementia with Motor Neuron Disease

The authors conclude that low perfusion in the anterior cerebral hemispheres appears to be characteristic of progressive dementia with motor neuron disease and that IMP SPECT may be a useful method for differentiating this unique syndrome from other established types of dementia.....Page 688

Reduction-Mediated Technetium-99m Labeling of Monoclonal Antibodies

After reduction of intrinsic disulphide bonds, the antibody is labeled with technetium-99m in the presence of a weak competing ligand, methylene diphosphonate. The final step takes only a few minutes and results in high in vitro stability and labeling efficiencies at or above 97%Page 692