STUDY: Confirms Diagnosis

Initial CT (5/6/88)
Showed multiple low-density regions involving white and gray matter in the parietal and occipital areas. Thought to be related to an inflammatory process, less likely an embolic insult. A confirmatory diagnosis was not possible.

Repeat CT (5/16/88)
Showed some change to the low attenuation areas—appearing larger and more confluent than previously noted. The pattern was atypical for infarction. Again, infectious etiology for the abnormality was entertained and diagnosis nonconfirmatory.
A Case Study:
61-year-old female postop aorta bifemoral graft with a complicated 7-month postoperative course including renal failure, diverticulitis, Candida sepsis, multiple enteric cutaneous fistulas with multiple surgical procedures.
On 5/6/88, patient was noted to have two generalized seizures.
On 5/16/88, patient began to deteriorate neurologically. Complained of blindness.

SPECT Study (5/19/88)
Demonstrated bilaterally posterior cerebral artery infarction. Subsequent neurologic exams and clinical course confirmed diagnosis.

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SPECTamine®
Iofetamine HCl I 123 Injection

For complete product information, consult package insert, a brief summary of which follows:

DIAGNOSTIC - FOR INTRAVENOUS USE
DESCRIPTION: SPECTAMINE® (lofetamine HCl I 123 injection), is supplied as a sterile, pyrogenic, aqueous radiopharmaceutical solution for intravenous administration. Each milliliter of the solution contains 37 mcg of lofetamine (1 microcurie) of iofetamine HCl I 123 at calibration time. 0.017 millimole sodium hydroxide, and 6.0 milligrams sodium chloride for isotonicity. The pH is adjusted to 4.5-6.0 with sodium hydroxide or hydrochloric acid. SPECTAMINE contains no bacteriostatic preservative. The radiocuric composition at calibration time is not less than 99.7 percent I 123, nor more than 0.4 percent I 124, and not more than 0.5 percent all others (I 125, I 126, I 130 and Tc 121). The radiocuric composition at the 6-hour expiration time is not less than 93.1 percent I 123, not more than 6.2 percent I 124, and not more than 0.7 percent all others.

INDICATIONS AND USAGE: SPECTAMINE (Iofetamine HCI I 123 injection) is recommended for use as a liquid-soluble brain-imaging agent. It has been shown to be useful in the evaluation of noninvasive stroke especially when used within 96 hours of onset of focal neurologic deficit. The rates of agreement between abnormal images and the neurological examination suggestive of ischemic cerebrovascular insufficiency, appear to increase with the severity of symptoms. Its usefulness for the measurement of cerebral blood flow has not been established.

CONTRAINDICATIONS: None known.

WARNING: SPECTAMINE (Iofetamine HCI I 123 injection) should not be administered to individuals with known hypersensitivity to sympathomimetic amines or to those individuals taking monoamine oxidase inhibitors.

PRECAUTIONS: General
Some primary (Macaque fascicularis) studies have shown marked eye uptake of iofetamine HCl I 123. Localization has not been studied in the isolated human eye although in vivo images suggest the concentration of iofetamine HCl I 123 is below the limit of detection. Individual human variations in pharmacokinetics of this drug and the long-term effect on the eye have not been elucidated. The contents of the vial are radioactive. Adequate shielding of the preparation must be maintained at all times.

Do not use after the expiration time and date (6 hours after calibration time) stated on the label. Potassium Iodide Oral Solution should be administered before the examination to minimize thyroid uptake of I 123.

The prescribed iofetamine HCl I 123 dose should be administered as soon as possible from the time of receipt of the product (i.e., as close to calibration time or before, if possible), in order to minimize the fraction of radiation exposure due to relative increase of radiocuric contaminants with time.

To minimize radiation dose to the bladder, the patient should be encouraged to drink fluids and void frequently.

SPECTAMINE, as well as other radioactive drugs, must be handled with care. Appropriate safety measures should be used to minimize radiation exposure to personnel. Care should also be taken to minimize radiation exposure to the patient consistent with proper patient management. Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides, and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

Drug Interactions
There has been a single report of elevated diastolic hypertension (about 30 mm Hg) occurring 18 hours after administration of SPECTAMINE in a patient maintained on therapeutic doses of valproic acid.

Concurrent use of monoamine oxidase (MAO) inhibitors and compounds containing the amphetamine structure has been known to result in hypertensive crisis. Caution, therefore, should be exercised when administering SPECTAMINE (Iofetamine HCI I 123 Injection) to individuals taking medications known to potentiate the effects of sympathomimetic amines. It is recommended that SPECTAMINE not be administered during or within 14 days following administration of MAO inhibitors.

Sympathomimetic amines may affect the biodistribution of SPECTAMINE and, thus, may influence the image quality and diagnostic utility of the image. Carcinogenesis, Mutagenesis, Impairment of Fertility
No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenic potential or effects on fertility in male or female animals. The Ames test was negative for mutagenic effects.

Pregnancy Category C
Animal reproduction studies have not been conducted with SPECTAMINE. It is also not known whether SPECTAMINE can cause fetal harm when administered to a man or a pregnant woman or can affect reproduction capacity. SPECTAMINE should be given to a pregnant woman only if clearly needed.

Pediatric Use
Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: In a clinical study in 83 patients with sudden onset of focal neurologic deficit, e.g., cerebral infarction, 7 patients died within 2 to 55 days after administration. The deaths were considered to be the result of the disease state. Although there was no concurrent control group, statistics from historical controls support this evaluation.

There is evidence suggesting that the administration of 1 to 2 milligrams of iofetamine HCl, the carrier in SPECTAMINE, may increase systolic blood pressure by about 10 mm Hg. In a patient with a history of hypertension, there has been a single report of sudden onset of hypertension and dizziness with transient chest tightness which occurred 5-10 minutes after administration of SPECTAMINE. One case of transient unilateral hearing loss also was reported several hours after the use of SPECTAMINE in a patient with a coincidental upper respiratory infection. As with all organic-iodine-containing compounds, the possibility of allergic reactions must be considered.

HOW SUPPLIED: SPECTAMINE is supplied in nominal 3.5 ml vials as a sterile, pyrogenic, aqueous, radiocuric sodium chloride solution for intravenous injection. Each milliliter contains 37 mcg of iofetamine (1 mcg) of iofetamine HCl I 123 and sodium hydroxide, 6.0 milligrams sodium chloride for isotonicity. The pH is adjusted to 4.5-6.0 with sodium hydroxide or hydrochloric acid. In a single experiment containing 37 mcg of iofetamine (1 mcg) of iofetamine HCl I 123 at calibration time in a volume of 3 ml.

Vials are packaged in individual lead shields with plastic outer container.

THIS PRODUCT INFORMATION ISSUED DECEMBER 1987

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Co-editors: Barry A. Siegel, MD and Peter T. Kirchner, MD

The Society of Nuclear Medicine presents Nuclear Medicine: Self-Study Program I, the first volume of a comprehensive series that will cover all areas of nuclear medicine. It has been designed to help physicians, scientists, pharmacists, and technologists expand their knowledge of the clinical, basic science and technical aspects of nuclear medicine.

Nuclear Medicine: Self-Study Program I is the successor to the highly acclaimed Nuclear Medicine Review Syllabus, which reviewed the major advances in nuclear medicine of the 1970's. Nuclear Medicine Review Syllabus, under the editorship of Peter Kirchner, MD, sold 4,000 copies, more than any other SNM title for nuclear medicine physicians. Nuclear Medicine: Self-Study Program I covers the advances in nuclear medicine since the publication of the Nuclear Medicine Review Syllabus, and features many of the same contributors.

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Circle Reader Service No. 127
A Profile of Progress in Nuclear Medicine
The Years of Growth
Nuclear medicine emerged from the experimental stage into a phase of rapid clinical growth. The number of procedures performed rose rapidly during the 1960s. During this same period, Squibb Diagnostics developed and introduced important products and services for nuclear medicine, including the first sterile technetium generator, nuclear medicine training seminars and technical support through the Technical Associates Program.

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The '70s saw the development of other imaging modalities which drew procedures away from nuclear medicine and slowed its growth. Developments and advances continued, however, and Squibb introduced a variety of radiopharmaceutical products, including Macrotec. Squibb's Choletec* was introduced in 1987, and quickly became the premier hepatobiliary imaging agent.

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- Technetope® (Technetium Tc99m Generator)
- Aureotope® (Gold Au 198 Injection USP)
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*See brief summary on following page.

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*Data on file, Squibb Institute for Medical Research

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INDICATIONS AND USAGE
Therapeutic doses of Iodotope (Sodium Iodide I 131 Capsules USP; Sodium Iodide I 131 Solution USP) are indicated for the treatment of hyperthyroidism and selected cases of carcinoma of the thyroid. Palliative effects may be seen in patients with papillary and/or follicular carcinoma of the thyroid. Stimulation of radioactive uptake may be achieved by the administration of thyrropin. (Radioiodine will not be taken up by giant cell and spindle cell carcinoma of the thyroid or by amyloid solid carcinomas.)

CONTRAINdications
Preexisting vomiting and diarrhea represent contraindications to the therapeutic use of radioiodine.
IODOTOPE therapeutic capsules or solution (Sodium Iodide I 131) are contraindicated by the patient who is or may become pregnant. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus.

Animal reproduction studies have not been conducted with sodium iodide I 131.

WARNINGS
Sodium iodide I 131 is not usually used for the treatment of hyperthyroidism in patients under 30 years of age unless circumstances preclude other methods of treatment.

PRECAUTIONS General
The uptake of radioiodide will be affected by recent intake of stable iodine in any form, or by the use of thyroid, anti-thyroid and certain other drugs. Accordingly, the patient should be questioned carefully regarding previous medication and procedures involving radiographic contrast media. This drug should not be used after the expiration date stated on the container label.

Iodotope capsules should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides, and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides. As in the use of any radioactive material, care should be taken to minimize radiation exposure to the patient consistent with proper patient management and to insure minimum radiation exposure to occupational workers.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No long-term animal studies have been performed to evaluate carcinogenic potential.

Pregnancy Category X
See CONTRAINDICATIONS.

Nursing Mothers
It is not known whether this drug is excreted in human milk. As a general rule, nursing should not be undertaken when a patient is administered radioactive material.

Pediatric Use
Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
The immediate adverse reactions following sodium iodide I 131 treatment of hyperthyroidism are usually mild. Following the larger doses used in treating thyroid carcinoma, adverse reactions may be much more severe and present special problems.

Unwanted effects which may be associated with the use of sodium iodide I 131 include depression of the hematopoietic system when large doses are employed, radiation sickness (some degree of nausea and vomiting), increase in clinical symptoms, bone marrow depression, severe sialoadenitis, acute leukemia, anemia, chromosomal abnormalities, acute thyroid crisis, bradycardia, dysrhythmia, leukopenia, or thrombocytopenia.

Tenderness and swelling of the neck, pain on swallowing, sore throat, and cough may occur around the third day after treatment and are usually amenable to analgesics. Temporary thinning of the hair may occur to two or three months after treatment.

Allergic reactions have been reported infrequently following the administration of iodine containing radiopharmaceuticals.

OVERDOSAGE
In the treatment of hyperthyroidism, overdosage may result in hypothyroidism, the onset of which may be delayed. Appropriate replacement therapy is recommended if hypothyroidism occurs. Radiation absorbed doses to various tissues for any administered dose may be calculated by reference to Table 4 (Absorbed Radiation Doses).

HOW SUPPLIED
IODOTOPE Iodotope (Sodium Iodide I 131 Capsules USP) blue/tuff therapeutic capsules are available in packages containing 37 to 1800 microcuries (1 to 50 milliCuries) sodium iodide I 131 at the time of calibration. Iodotope (Sodium Iodide I 131 Solution USP) therapeutic solution is available in vials containing approximately 259, 518, 1036, 2590, or 3922 megabecquerels (7, 14, 28, 70, or 100 milliCuries) sodium iodide I 131 at the time of calibration. Complete assay data are provided on the container.

IODOTOPE®
Sodium Iodide I 131 Capsules USP

INDICATIONS AND USAGE
IODOTOPE (Sodium Iodide I 131 Capsules USP) Diagnostic Capsules are indicated for use in performance of radioactive iodine (RAI) uptake test to evaluate thyroid function and for thyroid imaging. Diagnostic doses may also be employed in localizing metastases associated with thyroid malignancies.

CONTRAINDICATIONS
None known.

WARNINGS
None.

PRECAUTIONS
General
The uptake of radioiodide will be affected by recent intake of stable iodine in any form, or by the use of thyroid, anti-thyroid and certain other drugs. Accordingly, the patient should be questioned carefully regarding previous medication and procedures involving radiographic contrast media. This drug should not be used after the expiration date stated on the container label.

Radiochemists should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides, and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides. As in the use of any radioactive material, care should be taken to minimize radiation exposure to the patient consistent with proper patient management and to insure minimum radiation exposure to occupational workers.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No long-term animal studies have been performed to evaluate carcinogenic potential, mutagenic potential, or whether Sodium iodide I 131 affects fertility in males or females.

Pregnancy Category C
Animal reproduction studies have not been conducted with Sodium iodide I 131 Diagnostic Capsules. It is also not known whether Sodium iodide I 131 Diagnostic Capsules can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Sodium iodide I 131 Diagnostic Capsules should be given to a pregnant woman only if clearly needed.

Iodotope capsules are also not known whether this drug is excreted in human milk. As a general rule nursing should not be undertaken when a patient is administered radioactive material.

Pediatric Use
Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions have been reported infrequently following the administration of iodine containing radiopharmaceuticals.

HOW SUPPLIED
IODOTOPE capsules are packaged 5, 10, 15 or 20 capsules per vial for potencies of 0.30, 0.56, 1.1, and 2.6 megabecquerels (8, 15, 30 and 50 microcuries) sodium iodide I 131 per capsule and in vials of 5 and 10 capsules per vial for the 3.7 megabecquerels (100 microcuries) per capsule potency.

Issued May 1980


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**Call for Abstracts for Works-in-Progress**

The 1989 Scientific Program Committee solicits the submission of abstracts from members and nonmembers of The Society of Nuclear Medicine for the 36th Annual Meeting in St. Louis. Works-in-Progress accepted for the program will be published in a separate on-site show directory that will be distributed to all those who attend the meeting. Original contributions on a variety of topics related to nuclear medicine will be considered, including:

- INSTRUMENTATION
- COMPUTERS AND DATA ANALYSIS
- RADIOASSAY
- RADIOPHARMACEUTICAL CHEMISTRY
- DOSIMETRY/RADIOBIOLOGY
- NUCLEAR MAGNETIC RESONANCE
- CLINICAL SCIENCE APPLICATIONS
  - Bone/Joint
  - Neurology
  - Cardiovascular
  - Oncology/Hematology
  - Endocrine
  - Pediatrics
  - Gastroenterology
  - Pulmonary
  - Infectious Disease
  - Renal/Hypertension
  - and Immunology

Authors seeking publication for the full text of their papers are strongly encouraged to submit their work to the JNM for immediate review.

A complete educational program for technologist will be offered and technologists are encouraged to submit abstracts of their work for consideration.

The official abstract form for Works-in-Progress may be obtained from the September 1988 issue of the JNM or by calling or writing:

**The Society of Nuclear Medicine**
Att: Abstracts
136 Madison Avenue, New York, NY 10016-6760
Tel: (212)889-0717
FAX: (212)545-0221

Deadline for Works-in-Progress is Thursday, April 7, 1989

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**Call for Abstracts for Scientific Papers**

The 1989 Scientific Program Committee and Scientific Exhibits Subcommittee solicits the submission of abstracts from members and nonmembers of The Society of Nuclear Medicine for the 36th Annual Meeting in St. Louis. Abstracts accepted for the program will be published in a special supplement to the May issue of The Journal of Nuclear Medicine. Original contributions on a variety of topics related to nuclear medicine will be considered, including:

- INSTRUMENTATION
- COMPUTERS AND DATA ANALYSIS
- RADIOASSAY
- RADIOPHARMACEUTICAL CHEMISTRY
- DOSIMETRY/RADIOBIOLOGY
- NUCLEAR MAGNETIC RESONANCE
- CLINICAL SCIENCE APPLICATIONS
  - Bone/Joint
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  - Pediatrics
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Deadline for receipt of abstracts for Scientific Papers is Thursday, January 12, 1989.

Deadline for receipt of abstracts for Scientific Exhibits is Thursday, January 19, 1989.
FOCAL EPILEPSY
Clinical Use Of Functional Imaging By Means Of Emission Tomography

HONORARY PRESIDENT: J Bancaud
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6 MAY 1989

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PRELIMINARY PROGRAMME INCLUDES
INTRODUCTION The problem – J Engel
The Technique – S Askienazy
The Tracers – N A Lassen

ROUND TABLE, INVESTIGATION in focal epilepsy
Comparison of methods available
TREATMENT in focal epilepsy and surgery

(Participants: Dr Rowe, Sydney, Australia; Prof Podreka, Vienna, Austria; Prof Franck, Liège, Belgium; Prof Lassen, Copenhagen, Denmark; Dr Steinling, Lille, France; Prof Baldy-Moulinier, Monpellier, France; Dr Askienazy, Paris, France; Dr Duncan, Glasgow, Great Britain; Dr Zanioni, Cuneo, Italy; Prof Nyberg-Hansen, Oslo, Norway; Prof Ingvar, Lund, Sweden; to be confirmed Dr Worth, Indianapolis, USA.)

GENERAL DISCUSSION: Is spect/pet of established clinical value in Focal Epilepsy Diagnosis and Treatment?

Focal Epilepsy registration Form for May 6, 1989.
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SODIUM I 131 INJECTION, USP

For Diagnostic Use

DESCRIPTION
Iodohippurate Sodium I 131, 7.4 megabecquerels (0.2 millicuries) per mL, is a sterile, non-pyrogenic intravenous solution made with isotonic sodium chloride. It contains, per milliliter, the labeled amount of β-iodohippurate sodium, 1.6 mg sodium phosphate, and 0.76 mg potassium phosphate. Sodium hydroxide and/or hydrochloric acid may have been used to adjust the pH. Benzyl alcohol (0.9%) w/v has been added as a preservative. Radioactivity in other chemical forms does not exceed 3% of the total radioactivity.

CLINICAL PHARMACOLOGY
Following intravenous injection of iodohippurate Sodium I 131 the appearance, concentration, and excretion of the tracer in the kidney can be monitored. Tubular cell secretion is primarily displayed. An index of renal vascular competence and renal evacuation may also be estimated.

INDICATIONS AND USAGE
Iodohippurate Sodium I 131 injection, USP is a diagnostic aid in determining renal function, renal blood flow, urinary tract obstruction, and as a renal imaging agent.

CONTRAINDICATIONS
None known.

WARNINGS
None known.

PRECAUTIONS
General
As in the use of any other radioactive material, care should be taken to insure minimum radiation exposure to the patient and clinical personnel, consistent with proper patient management.

The use of iodohippurate Sodium I 131 should be carefully considered in patients known to be sensitive to iodines. Caution is also indicated in patients with reduced renal function since excretion of the drug may be impaired.

The drug iodohippurate Sodium I 131 may contain a minimum amount of unbound I 131. A dose of 10 to 20 drops of Lugol’s Solution may be administered prior to the examination to curtail any accumulation of I 131 in the thyroid gland.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No long-term animal studies have been performed to evaluate carcinogenic potential or whether iodohippurate Sodium I 131 affects fertility in males or females. Mutagenesis studies have not been conducted.

Pregnancy Category C
Animal reproduction studies have not been conducted with this drug. It is also not known whether iodohippurate Sodium I 131 can cause fetal harm when administered to a pregnant woman, or can affect reproductive capacity. Iodohippurate Sodium I 131 should be given to a pregnant woman only if clearly needed.

Ideally, examinations using radiopharmaceuticals, especially those radioactive in nature, in women of childbearing capacity should be performed during the first few (approximately ten) days following the onset of menses.

Nursing Mothers
Since I 131 is excreted into human milk, formula feeding should be substituted for breast feeding if the agent must be administered to the mother during lactation.

Pediatric Use
Safely and effectiveness in children have not been established.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radiocoules and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionucleides.

ADVERSE REACTIONS
As with all organic iodide-containing compounds, the possibility of allergic reactions, must be kept in mind. Nausea, vomiting, and fever have been reported in connection with the administration of iodophenol sodium I 131.

HOW SUPPLIED
Iodohippurate Sodium I 131 injection, USP is supplied as a sterile, non-pyrogenic intravenous solution for diagnostic use. This isotonic solution contains iodohippurate sodium I 131 at an activity concentration of 7.4 megabecquerels (0.2 millicuries) per mL. Each 10 mL lead-shielded vial contains either 37 megabecquerels (1 mCi) or 74 megabecquerels (2 mCi) total activity at the time of calibration in volumes of 5mL and 10mL, respectively. Radioactivity in other chemical forms does not exceed 3% of the total radioactivity.

Please consult full product information before using.


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LINE-ADS: $15.00 (JNM) or $14.00 (JNMT) per line or fraction of line (approx. 50 characters per line, including spaces). Please allow 28 characters for the first line which will appear in capital letters. Special rates for SNM members on Positions Wanted: $10.00 per line. Note: Box numbers are available for the cost of the two lines required.

EXAMPLES

NUCLEAR MEDICINE TECHNOLOGIST
Registered or registry eligible technologist to work in private office. Special emphasis on nuclear cardiology. Salary negotiable. Send resume to: Box 1203, The Society of Nuclear Medicine, 136 Madison Ave., 8th fl., New York, NY 10016-6760. EOE.

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DEADLINE: First of the month preceding the publication date (for example, January 1 for February issue). Please submit classified advertisements typed double spaced. No telephone orders are accepted.

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For further information please contact Rose Dauge at (212) 889-0717.
NUCLEAR MEDICINE PHYSICIAN. A large, private, subspecialty radionuclide imaging group is looking for an experienced nuclear medicine Board certified physician with one or two year fellowship training in nuclear medicine. Location of the group is Madison, WI. $75,000 base plus 30% of collections. Must be able to work efficiently as a private practice physician as well as to support other private practice physicians in the group. Physician must be a diplomate of the American Board of Nuclear Medicine. Primary responsibility is to perform nuclear medicine procedures, including diagnostic scintigraphy and nuclear medicine therapy for patients in the hospital and for outpatients, as well as to participate in the education of medical students, residents, and technologists. Group is affiliated with a 900-bed tertiary care hospital and is the largest and most comprehensive nuclear medicine department in the Midwest. Group has one of the most extensive in-house nuclear medicine laboratories in the nation. Salary and benefits are commensurate with experience. Qualified applicants must have completed an ACGME approved residency in nuclear medicine and be a diplomate of the American Board of Nuclear Medicine. Send CV to: Dr. John Jones, 123 Main Street, Madison, WI 53790.

NUCLEAR MEDICINE CLASSIFIED. A large, clinical research hospital in the Midwest is seeking a Nuclear Medicine Physicist for a position in clinical research. This position is available immediately and the salary is dependent upon experience. Applications are invited and will be given equal consideration. Enclosed is a CV. Send to: Dr. Jane Doe, 456 Main Street, Madison, WI 53790.

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Toronto General Hospital, an acute care teaching facility affiliated with the University of Toronto, has an opportunity for a Radiopharmacist to assist in the preparation, quality control and dispensing of radiopharmaceuticals. The opportunity exists for independent and collaborative research and development of new radiopharmaceuticals. You will also be involved in teaching radiopharmacy residents and nuclear medicine technology students.

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Immediate opening for an Engineer/Scientist experienced in the operation and maintenance of medical cyclotrons, preferably TCC equipment. Prefer electrical experience, but all qualified individuals are encouraged to apply. Salary commensurate with experience and excellent benefits are offered. Send resume to: Thomas Boothe, PhD, Cyclotron Facility, Mount Sinai Medical Center, 4300 Alton Road, Miami Beach, FL 33140. An Equal Opportunity Employer.

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Nuclear Medicine Technologists

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El Camino Hospital

Nuclear Medicine Technologists

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Brandon General Hospital
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HCA Parkland Medical Center is seeking a full-time registered or registry eligible Nuclear Medicine Technologist to work independently and oversee the efficient operation of a small, progressive Nuclear Medicine Department.

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The Medical University of South Carolina is seeking a certified Nuclear Medicine Technologist to complete a staff of seven. The Division of Nuclear Medicine is an active and progressive one; services offered include clinical care, research procedures and a nuclear medicine residency program. Five cameras (two with SPECT) are networked with Elscint computers. Excellent benefit package and salary commensurate with experience are offered. The city of Charleston has many unique cultural offerings, year-round recreational activities and several colleges and universities. Send resume or call:

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The Journal of Nuclear Medicine
THE SOCIETY OF NUCLEAR MEDICINE

Annul
Winter Meeting

Title: SPECT: How To Get Started; How To Do It Well—A Special Two-Day Symposium

Date: Monday-Tuesday, Feb. 13-14, 1989

Location: Le Meridien Hotel, New Orleans, LA

Program: Includes a national panel of distinguished speakers presenting topics on SPECT

Sponsors: The Computer & Instrumentation Council of The Society of Nuclear Medicine, Inc.

Fee: SNM Member, $175; Nonmember, $205
Tech. Member, $75; Nonmember, $105

CME Credit: 13 hrs AMA Category 1

VOICE Credit: 1.3 hrs VOICE Credit for Technologists

For further information contact:
The Society of Nuclear Medicine
Meetings Department
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New York, NY 10016-6760
(212) 889-0717
FAX: (212) 545-0221

CURRENT STATUS
AND FUTURE DIRECTIONS OF
IMMUNOCONJUGATES
IN MONOCLONAL ANTIBODY-BASED
IMAGING AND TREATMENT

TWO-DAY SEMINAR, FEBRUARY 17 AND 18, 1989 AT
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The Society of Nuclear Medicine

and the

Technologist Section

The Society of Nuclear Medicine (SNM) is a multi-disciplinary organization of physicians, physicists, chemists, radiopharmacists, technologists, and others interested in the diagnostic, therapeutic, and investigational use of radiopharmaceuticals.

The Technologist Section of The Society of Nuclear Medicine is a scientific organization formed with, but operating autonomously from, the Society to promote the continued development and improvement of the art and science of nuclear medicine technology. Membership in the Section is open to any member of the Society regardless of category, who can provide evidence of training and/or experience in nuclear medicine technology that is satisfactory to the Membership Committee of the Section.

Benefits of Membership

• Receipt of the quarterly publication the Journal of Nuclear Medicine Technology and monthly The Journal of Nuclear Medicine.

• The right to hold elective office in the Section and SNM.

• Local networking with regional chapters and representation through the National Council and the Board of Trustees.

• Legislative representation on both local and national issues.

• An Annual Meeting each year, which includes scientific and continuing education sessions, workshops, and scientific and technical exhibits at member discounts.

• Books, educational aids, and audiovisuals at member discounts.

• Awards for outstanding achievements, and contributions to the technologist meetings, publications, and exhibits.

• Enrollment in the computerized continuing education accounting system (VOICE).

For more information, contact the Membership Department at:

The Society of Nuclear Medicine

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New York, NY 10016-6760
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Contributions or gifts to The Society of Nuclear Medicine, Inc. are not deductible as charitable contributions for federal income tax purposes. Dues payments may be deductible by members as an ordinary and necessary business expense.
Chromatography of Technetium-99m Radiopharmaceuticals—A Practical Guide

By Philip J. Robbins

To provide up-to-date information about the most accurate procedures for ensuring quality control of radiopharmaceuticals, The Society of Nuclear Medicine has published Chromatography of Technetium-99m Radiopharmaceuticals—A Practical Guide.

This important manual offers readers a collection of miniaturized chromatographic methods for the rapid and precise determination of the radiochemical purity of commonly used Tc-99m radiopharmaceuticals.

Topics covered include the nature and source of impurities, principles and classic techniques of chromatography, methods for counting miniature chromatographic strips, and pitfalls of miniature methods and how to avoid them. Also contained herein is a listing of each radiopharmaceutical with the USP criteria for radiochemical purity, typical scans of impure products, and standards and interlaboratory comparisons for miniaturized systems.

Prepared to aid nuclear medicine personnel in implementing voluntary quality-assurance programs, the material may also be used as a training resource for individuals preparing for professional licensure and certification.

Ordering Information:
Add $2.50 postage and handling for each book ordered. Prepayment required in U.S. funds drawn on U.S. banks only. For payments made in U.S. dollars, but drawn on a foreign bank, add a bank processing fee of $4.50 for Canadian bank drafts and $40.00 for all other foreign bank drafts. Check or purchase order must accompany all orders. Make checks payable to: The Society of Nuclear Medicine. Prices are in U.S. dollars and are subject to change without notice.

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For Publication Order Form, Circle No. 176
The MIRD Primer for Absorbed Dose Calculations was prepared by the MIRD Committee to provide a fresh explanation of the MIRD schema with examples designed to illustrate applications.

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Part 2 amplifies this explanation with examples designed to illustrate applications beginning with relatively simple problems and working up to more complex ones.

Part 3 contains previously published MIRD absorbed dose estimates, now readily assembled in one book, that have been revised and edited for this publication.


The MIRD Primer also contains a substantive index, a detailed glossary and list of symbols, and for your handy reference calculation tables on the inside front and back covers; 128 pp.

This text is an invaluable reference tool for everyone who is involved in nuclear medicine research and practice!

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NEW TITLES

■ MIRD Primer for Absorbed Dose Calculations, edited by Robert Loewinger, Thomas F. Budinger, and Evelyn E. Watson.
The only publication that combines all the previously MIRD absorbed dose estimates in one volume, the MIRD Primer provides a fresh explanation of the MIRD schema, along with examples to illustrate applications. The Primer contains revised and updated MIRD dose estimate reports and a detailed explanation of the MIRD method. The MIRD Primer also contains a substantive index, a detailed glossary and list of symbols. 1988. 128 pp. Hardcover. $35 for members; $50 for non-members.

■ SPECT: A Primer, by Robert J. English, CNMT, and Susan E. Brown, CNMT.
Now in its fourth printing, the Primer on technologists' fundamentals of SPECT, is both an extension of any nuclear medicine technologists operating manual. It is regarded by many as one of the two handbooks on SPECT. 1986. 148 pp. Paper. $15 members; $17 non-members.

Designed as a basic text to acquaint practitioners and students with the possibilities and limitations of nuclear medicine in detecting and evaluating common disorders, this completely revised and updated edition is essential to all those who want an understanding of this rapidly evolving technology. 1988. 256 pp. Paper. $15; accredited instructors may purchase a minimum of 10 copies at $4 each.

■ The Scintillation Camera, edited by Guy Simmons, PhD.
Targeted to advanced technologists, physicians, and other scientists, this book provides, in a single volume, easily accessible state-of-the-art information on all aspects of the scintillation camera, from instrument selection and performance evaluation to operation monitoring in the clinical environment. The Scintillation Camera should be especially helpful to those teaching the principles of scintillation cameras. 1988. 160 pp. Paper. $30 members; $35 non-members.

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Educate your patients with SNM's Patient Information Pamphlets

A Patient's Guide to Nuclear Medicine

Well illustrated, this 16-page pamphlet explains what nuclear medicine is, how the procedures are performed, and how they can help in the early detection of disease.

Divided into 3 sections, the guide opens with a general overview of nuclear medicine. A question-and-answer section follows, addressing such topics as safety, the benefits of nuclear medicine procedures, pre- and post-instructions, and testing of pregnant women and children. The third section explains some of the more commonly performed procedures such as bone, liver, lung, heart, and thyroid uptake scans.

16 pp; 5½ x 8½; in 2 colors;
25¢ per pamphlet; minimum order: 100 copies

Guidelines for Patients Receiving Radioiodine Treatment

Prepared in collaboration with the U.S. Nuclear Regulatory Commission, this 8-page pamphlet answers patients' questions about home care after receiving radioiodine treatment for thyroid conditions.

Easy-to-read language outlines important precautions patients can follow to help reduce radiation exposure to others. It also contains a checklist that physicians can review with their patients to determine which guidelines are appropriate for them and how they should be followed.

8 pp; 5½ x 8½; in 2 colors;
30¢ per pamphlet; minimum order: 25 copies

Healthcare professionals in private practice, hospitals, and clinics will find that these pamphlets provide a brief, attractive, and inexpensive way to educate patients and their families about the importance and safety of nuclear medicine procedures.

TO ORDER: Single copies are available for review at $1.50 each. All prices include postage and handling. Prepayment required in U.S. funds drawn on U.S. banks only. Make checks payable to: The Society of Nuclear Medicine. Prices are in U.S. dollars and subject to change without notice.

THE SOCIETY OF NUCLEAR MEDICINE
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Each description of the products below was condensed from information supplied by the manufacturer. The reviews are published as a service to the professionals working in the field of nuclear medicine and their inclusion herein does not in any way imply an endorsement by the Editorial Board of The Journal of Nuclear Medicine or by The Society of Nuclear Medicine.

New Products

New Features to X-Ray Bone Densitometer

Hologic, Inc., introduces a series of major enhancements for its award winning QDR-1000® X-Ray Bone Densitometer. QDR® is an advanced dual-energy x-ray technology for precise assessment of bone density. QDR® technology provides high precision, fast scanning time, and high image resolution. QDR® also eliminates the requirement to use a radioactive isotope source, while maintaining a low patient dose equivalent to only 1/10 of a typical chest x-ray. It employs a low dose x-ray source in lieu of radioactive isotopes for rapid precise diagnosis and management of osteoporosis and related bone disorders. The new capabilities include: (A) A highly automated protocol for comprehensive assessment of femur scans. This new QDR-1000® software acquires scans of the proximal femur in only 5-6 min and can achieve repeatability (precision) values of better than 1.0% CV in patients. (B) On-line normal range curves. This software enhancement facilitates the interpretation of studies and allows customized user-defined values to be programmed for the individual physician's practice. (C) An internal quality control procedure. This unique software feature automates the analysis and plotting of trend data to assure high short-term and long-term instrument precision. (D) Optical disk storage. This optional hardware system provides 0.8 gigabytes of storage on removable disk cartridges providing write-protected archiving for more than 3,500 patient scans.

Hologic, Inc., 200 Prospect St., Waltham, MA 02154. (617) 893-5100.

Circle Reader Service No. 102

Portable Survey Meters

Victoreen, Inc., has introduced two portable GM survey meters designed to meet the needs of industrial radiography applications. Model 400/400R has an operating range from 0-1000 mR/h in three switch-selectable ranges. Model 410-410R offers extended measurement capability to 10,000 mR/h, normally available only on ion chamber devices. The latest additions to Victoreen's line of radiation detection instrumentation, Models 400 and 410 maximize safety and convenience without sacrificing accuracy or performance. Battery operation, handheld size, and rugged, watertight construction assure reliable performance in the field. Semilog readout provides accurate readings from 10% fullscale to 100% full-scale on all ranges. The convenient belt clip, coupled with a built-in audible alarm, provides hands-free monitoring of potentially hazardous locations. The R version of each model offers the added convenience of an audible chirp to alert the user of existing potentially hazardous conditions. Victoreen, Inc., 6000 Cochran Rd., Cleveland, OH 44139-3395. (216) 248-9300. FAX (216) 248-9301.

Circle Reader Service No. 101

PET Planning Guide

Scanditronix, Inc., a major supplier of positron emission tomography systems, has recently published the first comprehensive guide for planning a PET center. Called The PET Book: A Planning Compendium, the guide is an educational resource for persons who are planning a PET center; those who are assessing the potential value of PET to their institution; and anyone interested in learning more about PET. The guide contains three volumes which are provided in a hard-shell case. Volume I includes sections on "Concepts of Positron Emission Tomography," which is an overview of applications and history, and "Practical PET Imaging," a discussion of the PET procedure. Volume II contains "Tracer Characteristics," "Production of Tracers," "Camera Function," and "Camera Specifications." Sections on "Planning a PET Center" and "Safety" comprise Volume III. The PET Book: A Planning Compendium, is the first resource of its type. It is "must reading" for anyone who is or may be involved in PET. Scanditronix, Inc., 106 Western Ave., Essex, MA 01929. (508) 764-6994.

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MPI MAA Kit

Kit for the Preparation of Technetium Tc 99m Albumin Aggregated Injection

- May be used in adults and children as an adjunct in the evaluation of pulmonary perfusion
- Lyophilized product offers excellent stability
- No refrigeration required during shipping
- Up to 100 mCi per reaction vial
- Color-coded packaging and labeling for easy identification
- Color-coded flip-top seal for convenient one-handed opening

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For complete prescribing information consult package insert, a brief summary of which follows:

DIAGNOSTIC - FOR INTRAVENOUS USE

DESCRIPTION: The kit consists of 10 multidose reaction vials which contain the sterile, non-pyrogenic, non-radioactive ingredients necessary to produce Technetium Tc 99m Albumin Aggregated Injection for diagnostic use by intravenous injection.

Each 10 ml reaction vial contains 2.5 mg of Albumin Aggregated. 5.0 mg of Albumin Human, 0.6 mg (minimum) Stannous chloride (maximum stannous chloride 0.1 mg) and 1.7 mg of sodium chloride. The contents are in a lyophilized form under an atmosphere of nitrogen. Sodium hydroxide or hydrochloric acid, if added, is used for pH adjustment. No bacteriostatic preservative is present.

The Albumin Human was non-reactive when tested for hepatitis B surface antigen (HBsAg) by radioimmunoassay. The aggregated particles are formed by denaturation of Albumin Human in a heating and aggregation process. Each vial contains 4 to 8 million particles. By light microscopy more than 95% of the particles are between 10 and 70 micrometers, while the typical average size is 30 to 40 micrometers, none is greater than 150 micrometers. Technetium Tc 99m Albumin Aggregated Injection for intravenous use is in its final dosage form when sterile isotonic sodium perchlorate solution is added to each vial. No less than 90% of the percentate Tc 99m added to a reaction vial is bound to aggregated material at the time of preparation and remains bound throughout the 6 hour lifetime of the preparation.

INDICATIONS AND USAGE: Technetium Tc 99m Albumin Aggregated Injection is a long imaging agent which may be used as an adjunct in the evaluation of pulmonary perfusion in adults and children.

CONTRAINDICATIONS: Technetium Tc 99m Albumin Aggregated Injection should not be administered to patients with severe pulmonary hypertension. The use of Technetium Tc 99m Albumin Aggregated Injection is contraindicated in patients with a history of hypersensitivity reactions to products containing human serum albumin.

WARNINGS: Although adverse reactions specifically attributable to Technetium Tc 99m Albumin Aggregated have not been noted, the literature contains reports of deaths occurring after the administration of Albumin Aggregated to patients with pre-existing severe pulmonary hypertension. Instances of hemodynamic or idiosyncratic reactions to preparations of Technetium Tc 99m Albumin Aggregated have been reported (see Warnings).

PRECAUTIONS:

General

The contents of the kit before preparation are not radioactive. However, after the sodium percentate Tc 99m is added, adequate shielding of the final preparation must be maintained.

In patients with right to left heart shunts, additional risk may exist due to the copious use of Albumin Aggregated into the systemic circulation. The safety of this agent in such patients has not been established.

Hypersensitivity reactions are possible whenever protein-containing materials such as percutaneously labeled Albumin Aggregated are used in man. Epinephrine, antihistamines, and corticosteroids should be available for immediate use.

The intravenous administration of any particulate materials such as Albumin Aggregated may cause a temporary small mechanical impediment to blood flow. While this effect is probably physiologically insignificant in most patients, the administration of Albumin Aggregated is possibly hazardous in adults with pulmonary and other states of severely impaired pulmonary blood flow.

The components of the kit are sterile and non-pyrogenic. It is essential to follow directions carefully and to adhere to strict aseptic procedures during preparation.

Care of the vials is intended only for use in the preparation of Technetium Tc 99m Albumin Aggregated Injection and are not to be administered directly to the patient.

The Technetium Tc 99m labeling reactions involved depend on maintaining the stannous ion in the reduced state. Hence, sodium percentate Tc 99m containing sodium should not be employed.

The preparation contains no bacteriostatic preservative. Technetium Tc 99m Albumin Aggregated Injection should be stored at 2-8°C and discarded 6 hours after reinstitution.

Technetium Tc 99m Albumin Aggregated Injection is physically stable and consequently the particles settle with time. Failure to aseptically reinstitute may result in non-enormous distribution of radioactive particles. If blood is drawn into the syringe, unnecessary delay prior to injection may result in clot formation in situ.

Do not re-use if clumping of the contents is observed.

Technetium Tc 99m Albumin Aggregated, as well as other radioactive drugs must be handled with care. Once sodium percentate Tc 99m is added to the vial, appropriate safety measures must be utilized to minimize radiation exposure to clinical personnel. Care must also be taken to minimize the radiation exposure to patients in a manner consistent with proper patient management.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radiocolloids and whose training and experience have been approved by the appropriate governmental agencies to ensure the use of radiocolloids.

Carcinogenesis, Mutagenesis, Impairment of Fertility

No long-term studies have been performed to evaluate carcinogenic potential or whether Technetium Tc 99m Albumin Aggregated Injection affects fertility in males or females.

Pregnancy Category C

Animal reproduction and teratogenicity studies have not been conducted with Technetium Tc 99m Albumin Aggregated Injection. It is also not known whether Technetium Tc 99m Albumin Aggregated Injection can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. There have been no studies in pregnant women. Technetium Tc 99m Albumin Aggregated Injection should be given to a pregnant woman only if clearly needed.

Laboratory examinations using radiopharmaceuticals, especially those-elective in nature, of a woman of childbearing capability, should be performed during the first few (approximately 120 days) following the onset of menstruation.

Nursing Mothers

Technetium Tc 99m is excreted in human milk during lactation. Therefore, formula feedings should be substituted for breast feedings.

Pediatric Use

The lowest possible number of particles should be used in right-to-left shunting in neonates, and in severe pulmonary disease.

ADVERSE REACTIONS: The literature contains reports of deaths occurring after the administration of Albumin Aggregated to patients with pre-existing severe pulmonary hypertension. Instances of hemodynamic or idiosyncratic reactions to preparations of Technetium Tc 99m Albumin Aggregated have been reported (see Warnings).

HOW SUPPLIED:

MPI MAA Kit

Kit for the Preparation of Technetium Tc 99m Albumin Aggregated Injection

Each kit contains 10 reaction vials, each vial containing lyophilized form, sterile and non-pyrogenic:

- Albumin Aggregated
- Albumin Human
- Stannous Chloride (minimum)
- Sodium Percentate Tc 99m
- Sodium Chloride

HCO or NaOH has been used for pH adjustment. The vials are sealed under an atmosphere of nitrogen.

Two sets of radiation warning symbols and a package insert are supplied in each carton.

Circle Reader Service No. 30

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