In the evaluation of stroke

SPECTamine
Iofetamine HCl I 123 Injection

opens a window into the living brain

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Please see adjacent page for brief summary of prescribing information.
SPECTamine®
Iofetamine HCl I 123 Injection

A neurotransmitter analog crosses the intact blood-brain barrier
Concentrates in metabolically active brain cells—predominantly in the gray matter
Provides PET-like functional brain images at a fraction of the cost

Normal brain (top left) displays relatively symmetric SPECTamine uptake by metabolically active neurons.

SPECTamine study (bottom left) demonstrates bilaterally posterior cerebral artery infarction, confirming diagnosis.

For more information contact your Medi-Physics Territory Manager, Roche Professional Service Center or call 1-800-451-7732.

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SPECTamine®
Iofetamine HCI I 123 Injection

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

DIAGNOSTIC—FOR INTRAVENOUS USE

DESCRIPTION: SPECTamine® (ofetamine HCI I 123) Injection is supplied as a sterile, aqueous, isotonic sodium chloride solution for intravenous administration. Each milliliter of the solution contains 37 megabecquerels (1 millicurie) of iofetamine HCl I 123 at calibration time. 0.15 milligram iofetamine HCl, 0.017 millimole sodium phosphate, and 8.0 milligrams sodium chloride for isotonicity. The pH is adjusted to 4.5. 6.5 with sodium hydroxide or hydrochloric acid. SPECTamine® contains no bacteriostatic preservative and is packaged in single dose vials. The radiocolloid composition at calibration time is not less than 98.0 percent I 123, not more than 1.9 percent I 125, and not more than 0.1 percent all others (I 123 and I 125). The radiocolloid composition at 12-hour expiration time is not less than 96.3 percent I 123, not more than 3.5 percent I 125, and not more than 0.2 percent all others.

INDICATIONS AND USAGE: SPECTamine® (ofetamine I 123 Injection) is recommended for use as a lipiod-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 neurological deficit. The rates of agreement between absorbed 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.

WARNINGS: SPECTamine (Iofetamine HCl 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 primate (Macaca fascicularis) studies have shown marked eye uptake of iofetamine I 123. Localization has not been studied in the isolated human eye although in vivo images suggest the concentration of iofetamine I 123 is below the limit of detection. Individual human variations in pharmaceuticals 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 (12 hours after calibration time) stated on the label. Potassium Iodide Oral Solution should be administered before the examination to minimize thyroid uptake of Iodine 123.

The prescribed iofetamine 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 as possible) in order to minimize the fraction of radiation exposure due to relative increase of radiocolloid 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 clinical personnel. Care should also be taken to minimize radiation exposure to the patient consistent with proper patient management.

Radiofarmaceuticals 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 HCl 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.

Cardiomegaly, Mitral Valve Insufficiency
Some 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.

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

Nursing Mothers
Since Iodine I 123 is excreted in human milk, formula feeding should be substituted for breast feeding if the agent must be administered to the mother during lactation.

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

ADVERSE REACTIONS: In a clinical study in 93 patients with sudden onset of focal neurological deficit, e.g., cerebral infarction, 7 patients died within 2 to 55 days after administration. The deaths were considered to be a 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 painful 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, isotonic sodium chloride solution for intravenous injection. Each milliliter contains 37 megabecquerels (1 millicurie) of iofetamine HCl I 123 at calibration time. It is available in individual vials containing 111 megabecquerels (3 millicuries) of iofetamine HCl I 123 at calibration time in a volume of 3 ml.

SPECTamine® is supplied in individual lead shields with plastic outer container. Single use vials are packaged in individual lead shielded plastic outer containers.

This product information issued August 1985

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The 1990 Scientific Program Committee and Scientific Exhibits Subcommittee solicit the submission of abstracts from members and nonmembers of The Society of Nuclear Medicine for the 37th Annual Meeting in Washington, DC. Abstracts accepted for the program will be published in a special supplement to the June issue of the Journal of Nuclear Medicine. Original contributions on a variety of topics related to nuclear medicine will be considered, including:

- INSTRUMENTATION AND DATA ANALYSIS
- RADIOASSAY
- RADIONUCLIDE CHEMISTRY
- DOSIMETRY/RADIOBIOLOGY
- NUCLEAR MAGNETIC RESONANCE
- CLINICAL SCIENCE APPLICATIONS
  - Bone/Joint
  - Cardiovascular (clinical and basic)
  - Endocrine
  - Gastroenterology
  - Neurology (clinical and basic)
  - Oncology (non-antibody)
  - Immunology (antibody)

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

Deadline for receipt of abstracts for Scientific Papers is Thursday, January 11, 1990.

Deadline for receipt of abstracts for Scientific Exhibits is Thursday, January 18, 1990.

The official abstract form may be obtained from the October, 1989 issue of JNM or by calling or writing:

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The 1990 Scientific Program Committee solicits the submission of abstracts from members and nonmembers of The Society of Nuclear Medicine for the 37th Annual Meeting in Washington, DC. 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 AND DATA ANALYSIS
- Radiation assay
- Radiopharmaceutical chemistry
- Dosimetry/radiobiology
- Nuclear magnetic resonance

CLINICAL SCIENCE APPLICATIONS
- Bone/joint
- Cardiovascular (clinical and basic)
- Endocrine
- Gastroenterology
- Neurology (clinical and basic)
- Oncology (non-antibody)
- Immunology (antibody)
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- Hematology/Infectious Disease

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

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

Deadline for Works-in-Progress is Friday, April 6, 1990

The official abstract form for Works-in-Progress may be obtained from the October 1989 issue of JNM or by calling or writing:

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FIRST IMPRESSIONS?

Editor-elect H. William Strauss, MD, is interested in receiving unusual images of traditional scan subjects-or-scans of non-traditional subjects, for a new addition to the Journal entitled “First Impressions,” which will be seen in the Journal on a monthly basis beginning in January of 1990.

Akin to Dr. Henry Wagner’s “Image of the Year,” these images need not be related to the submission of manuscripts to the Journal. Rather they should be interesting in and of themselves. Submit your images, along with a completed form (included below), to:

FIRST IMPRESSIONS—THE JOURNAL OF NUCLEAR MEDICINE,
Room 5406, MGH-East, Building 149, 13th Street, Charlestown, MA 02129

Institution: _______________________________  Tracer: _______________________________
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This new publication from the MIRD committee compiles decay schemes and output tables for 242 radionuclides.

Detailed information on the intensities and energies of radiations and the mean energy emitted per nuclear transition in the decay of radionuclides in this publication provides the data needed for:

- The calculation of absorbed dose
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The 1990 Nuclear Imaging Surveys

Joint cooperative surveys of the
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Transmission Imaging Simulator – Series A
Gated Blood Pool Imaging – Tachycardia

The 1990 transmission gated blood pool cardiac imaging simulator mimics an LAO view of the right ventricles which cycle through systole and diastole in the manner of a beating heart. These cardiac cycles allow the subscriber to evaluate the imaging system’s accuracy in processing cardiac functional data. Computer analysis of the data also yields the following parameters: ejection fraction, heart rate, regional wall motion, regional ejection fraction, Fourier phase and amplitude, ejection rate, and filling rate. Participants are provided with a purchase option and a rental option. A rental option agreement will be sent to participants upon receipt of the order.

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Shipping date: April 23

For a comprehensive catalog containing descriptions of the more than 80 CAP Surveys for 1990, call 1-800-323-4040

MALLINCKRODT FELLOWSHIP AWARD

Mallinckrodt, Inc. has announced an Annual Fellowship of $30,000 for a physician fellow active in nuclear medicine research and/or development.

The award is to further a research and/or development project and applicants are asked to submit their curriculum vitae, a detailed account of their research project including prior accomplishments on the project, and future plans. This information, along with at least two letters supporting the application, should be forwarded to:

William J. MacIntyre, PhD
The Society of Nuclear Medicine
136 Madison Avenue
New York, NY 10016-6760

The recipient will be announced at the Annual Meeting of the Society of Nuclear Medicine in Washington, DC.

Deadline for this year’s award is January 19, 1990
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.

**Nuclear Medicine Imaging Workstation**

In a move to improve patient throughput and data management, ADAC Laboratories will be introducing an advanced nuclear medicine imaging workstation called Pegasys. This new system incorporates ADAC's new image display system using RISC technology, true-color motion display, and real-time interpolation. The system is hosted by a SUN workstation which uses the multitasking UNIX operating system. Pegasys features many characteristics that are unprecedented in the nuclear medicine industry. These include: single button operation through extensive use of templates; windows/icons which simplify access to clinical protocols; custom display formats; highest resolution display in nuclear medicine (152 x 900); flexible open architecture leverages SUN technology; networking with lifetime database and no need for a file server; advanced hardware. When interfaced with GENESYS, ADAC's premium gamma camera, the result is an uncompromising nuclear medicine imaging system. ADAC Laboratories, 540 Alder Dr., Milpitas, CA 95035. (408) 945-2990.

Circle Reader Service No. 101

**Bullseye QRP Program**

GE Medical Systems announces the availability of the Bullseye QRP quantitative thallium program, which identifies and scores myocardial areas that have "reversed" or "improved" between stress and delay profiles. The program is an updated version of Emory University's Bullseye Program, designed to enhance the interpretation of thallium myocardial tomograms. Using the short axis slices from stress and delayed myocardial perfusion studies, the original Bullseye Program compared initial, delay, and washout distributions with gender-matched normal profiles. Standard deviations greater than 2.5 are considered abnormal and displayed as "blackened" pixels on a two-dimensional polar representation. The new Bullseye QRP enhances this representation by indentifying initial stress defects that reverse themselves. Defect improvements more than 1.5 s.d. from reversibility normal profiles are automatically "whitened" and displayed in a plot.

This plot helps differentiate whether a stress defect begins to normalize after 4 hrs or stays relatively unchanged. The Bullseye QRP also scores the extent and severity for each stress defect. The scores are presented for all eight regions of the myocardium, as well as the apex and base. In addition, the Bullseye QRP Program includes quality control review displays which enable the operator to change the center or radius without reprocessing. Also, a new motion correction protocol corrects for patient motion in the axial direction during acquisition. General Electric Company, PO Box 414, Milwaukee, WI 53201. Attn: Tim Riesterer. (414) 544-3721.

Circle Reader Service No. 102

**Digital Thermal Printer**

Eastman Kodak Company announces a digital printer that produces photographic-quality 11 x 11 or 8½ x 11 inch full-color prints or transparencies in 3 to 4 minutes depending on print size. The Kodak XL 7700 digital continuous-tone printer sets new standards of quality, resolution, and image stability for hard copies from computer output. The printer will be available in seven configurations, including a basic unit for black-and-white prints or transparencies. These images will have a resolution of 2048 x 2048 picture elements. Other options include choices in computer interface and hardware cabinetry to allow maximum flexibility for the user. The Kodak XL 7700 digital continuous-tone printer can be configured either as a desktop unit or rack-mount. It includes either a 4- or 12-megabyte image buffer for black-and-white or full color printing. Picture information is downloaded to the printer from the user's PC, workstation, or network. The new printer uses patented continuous-tone technology to produce prints from computer images. Applications include computer design, medical diagnostic imaging, aerial mapping, and remote sensing. Eastman Kodak Company, 343 State St., Rochester, NY 14650. Attn. Michael D. Sullivan. (716) 724-4816.

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Nuclear Medicine Technologist. Position available in our beautiful new 725 bed VA Medical Center, Minneapolis, Minnesota. Work with ultramodern, state-of-the-art SPECT systems and an integrated computer network. Applicants must be registered or registry eligible. Salary commensurate with experience. For a chance of a lifetime, A. experience the natural beauty of the Twin Cities with their many lakes and parks. Contact: Robert Davies, VA Medical Center, Personnel Service (10A), 10 Veterans Drive, Minneapolis, MN 55417. (612) 725-2060 EOE.

Nuclear Medicine Technologists. Full time position for individual to perform all aspects of Nuclear Medicine Imaging including SPECT, Radiopharmacy and Instrumentation. Requires AA Degree and 1 yr. exp. as NMT. We offer competitive salary and flexible benefits. Benefits and fitness program offered onsite. Send resume to: Employment Manager, The Francis Scott Key Medical Center, 4940 Eastern Ave., Baltimore, MD 21224. A Johns Hopkins Health System member institution. EOE M/F/H/V.

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Nuclear Medicine Technologist. Opportunities exist in progressive Nuclear Medicine Department in a 335-bed acute care facility. Request NMT/CT certification. B.S. degree in nuclear medicine preferred. Excellent salary and benefits package. Please submit resume to: Pat Turner, Recruitment Coordinator, Mercy Hospital Medical Center, 5th & University, Des Moines, IA 50314. (515) 247-3300.

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Nuclear Medicine Technologist. Staff position to cover in a busy, 400-bed regional referral acute care facility affiliated with East Carolina University School of Medicine. PCMH offers a competitive salary, excellent benefits package and ideal working conditions in a beautiful, coastal locale. Excellent benefit package. Please send resume to: Personnel Director, Medical Center, P.O. Box 6024, Greenville, NC 27834.
NUCLEAR MEDICINE TECHNOLOGIST. Scripps Memorial Hospital, the leaders in quality care and caring in San Diego, has an opening for a Lead Nuclear Medicine Technologist at its expanding Escondido location. We have state-of-the-art equipment and offer a competitive compensation package and an excellent climate. For more information please call 1-800-228-1324, Scripps Memorial Hospital, Personnel Dept. 9888 Genesee Avenue, Post Office Box 28, La Jolla, California, 92038-0028.

NUCLEAR MEDICINE TECHNOLOGIST. St. Luke's Episcopal Hospital a 949 bed private not-for-profit hospital located in the dynamic Texas Medical Center, Houston, Texas has need for self motivated staff technologists. Qualified applicants should be registered or registry-eligible in Nuclear Medicine Technology by ARRT or NMTCB. We offer an excellent benefits and salary package. Send resume to St. Luke's Episcopal Hospital, Employment Office, PO Box 20269, Houston, TX 77225-0269, Attn: Jesse Smith. For more information, call collect: (713) 791-2237. SBE/M/F/V.

NUCLEAR MEDICINE TECHNOLOGISTS. St. Mary's Health Center has immediate full-time positions available for dynamic Nuclear Medicine Technologists. The qualified candidates should be registered with the NMTCB or be registry eligible. Experience should include 1-2 years clinical imaging including SPECT. This is an excellent opportunity to practice your skills in a "state-of-the-art" nuclear medicine department. Excellent salary and benefit package. Please contact: Human Resources, St. Mary's Health Center, 6420 Clayton Rd., St. Louis, MO. 63117. (314) 768-8062. SBE.

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For Free Consultation and Information Contact:
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Volume 30 * Number 11 * November 1989

45A
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For consideration, please send resume to: Christine Juscik, Human Resources Manager, St. Mary Medical Center, 540 Tyler Street, Gary, IN 46402 (219) 881-8151

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**Feature on Residency Position Openings**

The January issue of *JNM* will provide a listing of residency positions open in 1990. This feature is sponsored by the Academic Council as a service to individuals looking for open residency positions and programs with positions to fill. Any residency program wishing to list a 1990 position should contact:

Elysa Katz
The Society of Nuclear Medicine
136 Madison Avenue
New York, NY 10016-6760
Phone: (212) 889-0717
FAX: (212) 545-0221

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**FACULTY POSITION**

**ASSOCIATE CLINICAL DIRECTOR**

Faculty position for associate clinical director of nuclear medicine and nuclear cardiology. Emory University Hospital is currently seeking an individual with prior experience in academic nuclear medicine and ABNM or ABR-SCNR certification. Contact Naomi Alazraki, MD or Andrew Taylor, MD for more information (404) 727-4843. Curriculum Vitae may be directed to:

**Division of Nuclear Medicine**
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DESCRIPTION: Each kit contains sterile, pyrogen-free, nonradioactive ingredients necessary to produce Technetium Tc 99m Pentetate Injection for diagnostic use by intravenous injection.

Each 10 ml reaction vial contains, in lyophilized form and under nitrogen atmosphere, 5 mg of Pentetate Pentasodium, and 0.17 mg (minimum) stannous chloride (maximum stannous and stannic chloride 0.275 mg). The pH is adjusted to 4.0 to 7.5 with hydrochloric acid and sodium hydroxide prior to lyophilization. The addition of sterile, pyrogen-free and oxidant-free Sodium Pentetate/Technetium Tc 99m Injection produces Technetium Tc 99m Pentetate Injection, which contains no bacteriostatic preservative.

The chemical names for Technetium Tc 99m Pentetate Injection are: 1. Technetium (I) - Tc, [N, H-bis (2- bis (carboxymethyl) amino) ethyl] glycinate (5-)- sodium; and 2. Sodium [N, H-bis (2- bis (carboxymethyl) amino) ethyl] glycinate (5--)- technetate (I) - Tc.

INDICATIONS AND USAGE: Technetium Tc 99m Pentetate Injection may be used to perform renal imaging to assess renal perfusion, and to estimate glomerular filtration rate.

CONTRAINDICATIONS: None known.

WARNING: None

PRECAUTIONS: General

The contents of this kit are not radioactive. However, after Sodium Pentetate/Technetium Tc 99m Injection is added, adequate shielding of the final preparation must be maintained.

The contents of the reaction vial are intended only for use in the preparation of Technetium Tc 99m Pentetate Injection and are NOT to be directly administered to the patient.

The image quality may be adversely affected by impaired renal function.

Literature reports indicate that the target to non-target ratio for intracranial lesions may take several hours to develop fully, and the possibility of missing certain lesions when imaging is restricted to the early period after injection should be borne in mind.

To maximize radiation dose to the bladder, the patient should be encouraged to increase his fluid intake, and to void when the examination is completed and as often thereafter as possible for the next 4-6 hours.

Technetium Tc 99m Pentetate Injection should be formulated within six (6) hours prior to clinical use for brain and kidney imaging, and for assessing renal perfusion. For optimal results this time should be minimized. Intervals longer than one hour should be the exception.

Technetium Tc 99m Pentetate Injection for use in estimating glomerular filtration rate should be formulated within one (1) hour prior to clinical use.

The components of the kit are supplied sterile and pyrogen-free. Aseptic procedures normally employed in making additions and withdrawals from sterile, pyrogen-freecontainers should be used during the addition of the perchlorate solution and the withdrawal of doses for patient administration.

The Technetium Tc 99m labeling reactions involved in preparing the agent depend on maintaining the stannous ion in the reduced state. Any oxidant present in the sodium pentetate/technetium Tc 99m supply may thus adversely affect the quality of the radiopharmaceutical. Hence, sodium pentetate/technetium Tc 99m containing oxidants should not be employed.

Technetium Tc 99m Pentetate Injection as well as other radioactive drugs must be handled with care and appropriate safety measures should be used to minimize external radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to patients consistent with proper patient management.

Radiopharmacists should be used only by physicians who are qualified by training and experience in the safe use and handling of radioactive and whose experience and training have been approved by the appropriate government agency authorized to license the use of radioactive materials.

High background counts, poor images and erroneous clearance results have been observed with the use of vials exceeding expiration time, owing to inadequate labeling. The vials should not be used after the expiration date shown on the label.

Carcinogenesis, Mutagenesis, Impairment of Fertility

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

Pregnancy Category C

Animal reproduction and teratogenicity studies have not been conducted with Technetium Tc 99m Pentetate Injection. It is not known whether Technetium Tc 99m Pentetate 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 Pentetate Injection should be given to a pregnant woman only if clearly needed. Ileal, excretic, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first two (approximate 10) days following the onset of menses.

Nursing Mothers

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

Pediatric Use

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Pyrogenic and allergic reactions to preparations of Technetium Tc 99m Pentetate Injection have been reported in the literature.

HOW SUPPLIED: 10 VIALS KIT CONTENTS

1. 10 Dose Vials and 10 Sealed Vials for Kit Preparation

20 PRESSURE SENSITIVE LABELS for final preparation of Technetium Tc 99m Pentetate Injection.

PACKAGING INSERT

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Please see brief summary of prescribing information at right.