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WHEREAS, it is in the best interest of Nuclear Medicine Physicians to interpret studies performed with quality controlled radiopharmaceuticals, delivered when they need them;

WHEREAS, it would benefit all the aforementioned parties to utilize a unit dose service that is simple, safe, and efficient;

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- Visual monitoring of ECG and R-wave trigger.
- ONE YEAR WARRANTY

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Bone uptake superior to MDP

HDP shows unusually high adsorption to bone. In a clinical comparison, Osteoscan-HDP averaged 21% higher bone uptake than the MDP-based agent.1

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No bone agent clears the blood faster. Only 6% of Osteoscan-HDP remains in the blood two hours after injection.2 Osteoscan-HDP's rapid blood clearance contributes to the overall quality of the image and permits flexibility in scheduling patient scans from 1 to 4 hours post-injection.

Scan data:
The two scans above are of a 56-year-old female patient with breast cancer. Scan: abnormal activity in right ischial ramus. Instrument: General Electric MaxiCamera™ 535; total counts: 2000K; dose: 20.8 mCi; 5'5", 175 lb; dose-to-image time: 2.25 hours
Notice excellent bone delineation in this obese patient.

References:
Unexcelled image quality³

Osteoscan-HDP's high bone uptake and rapid blood clearance permit clear visualization of skeletal detail even in difficult-to-scan elderly patients.

High lesion sensitivity

HDP offers a high tumor-to-normal bone ratio. This results in high resolution scans capable of demonstrating subtle skeletal metastases and fractures with no sacrifice in overall image quality.

Scan data:
The two scans above are of a 79-year-old male patient with adenocarcinoma-prostate. Scan: multiple lesions. Instrument: Picker 4/15 Gamma Camera; information density: 3000; dose: 15 mCi; dose-to-image time: 3 hours IVP revealed mass in right kidney causing retention.
INDICATIONS AND USAGE
OSTEOSCAN-HDP (Tc99m Oxidronate Kit) is a diagnostic skeletal imaging agent used to demonstrate areas of altered osteogenesis.

CLINICAL PHARMACOLOGY
During the 24 hours following injection, Technetium Tc99m-labeled OSTEOSCAN-HDP is rapidly cleared from blood and other non-osseous tissues and accumulates in the skeleton with different blood levels. The blood levels are of greatest intensity approximately 50% of the injected dose. OSTEOSCAN-HDP exhibits its greatest affinity for areas of altered osteogenesis and actively metabolizing bone.

CONTRAINDICATIONS
None known.

WARNINGS
This class of compounds is known to complex cations such as calcium. Particular caution should be used with patients who have, or who may be predisposed to hypocalcemia (i.e., alkalosis).

PRECAUTIONS
General
Content of the vial are intended only for use in the preparation of Technetium Tc99m Oxidronate. The dose not be administered directly to the patient. Technetium Tc99m Oxidronate should be formulated within eight (8) hours prior to clinical use. The optimal imaging results are obtained one to three hours after administration.

Technetium Tc99m Oxidronate as well as other radioactive drugs, must be handled with care, and appropriate safety measures should be used to minimize radiation exposure to the patients consistent with proper patient management. Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the use and handling of radiocolloids and whose experience and training have been approved by the appropriate governmental agency. The dose is to be administered to the patients consistent with proper patient management. Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the use and handling of radiocolloids and whose experience and training have been approved by the appropriate governmental agency. To minimize radiation dose to the bladder, the patients should be encouraged to drink fluids and to void immediately before and after the injection and as often thereafter as possible for the next four to six hours.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No long-term animal studies have been performed to evaluate carcinogenic potential or whether Technetium Tc99m Oxidronate affects fertility in males and females.

Pregnancy — Category C
Animal reproduction studies have not been conducted with Technetium Tc99m Oxidronate. It is not yet known whether Technetium Tc99m Oxidronate can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Technetium Tc99m Oxidronate should be given to a pregnant woman only if clearly needed. Ideally, examinations using radiopharmaceuticals, especially those effective in nature, of a woman of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.

Nursing Mothers
Technetium Tc99m is excreted in human milk during lactation. Therefore formula feedings should be substituted for breast feeding.

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

ADVERSE REACTIONS
Although adverse reactions have not been reported that are specifically attributable to the use of Technetium Tc99m Oxidronate. Allergic dermatological manifestations (erythema) have been infrequently reported with similar agents.

DOSEAGE AND ADMINISTRATION
General Instructions
The recommended dose of Technetium Tc99m-labeled OSTEOSCAN-HDP is 15 mCi with a range of 10 to 20 mCi. The activity of each dose should be measured by a suitable radiation calibration system prior to administration. The dose should be given intravenously by slow injection. For optimal results imaging should be done 1-4 hours post-injection.

HWM SUPPLIED
OSTEOSCAN-HDP is supplied as a lyophilized powder packaged in vials. Each vial contains 3 mg oxonate sodium and 0.24 mg stannous chloride as active ingredients, and 0.84 mg gentisic acid as a stabilizer. Kits containing 5 or 30 vials are available. The NDC number for this product is NDC 37000-407-01. The drug can be stored at room temperature both prior to and following reconstitution with ADDITIVE-FREE sodium pertechnetate Tc99m.

For additional product information, call (513) 977-5547 or write: Procter & Gamble. Professional Services. P.O. Box 171. Cincinnati, OH 45201.
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Volume per vial: 0.05ml
Radiochemical purity: not less than 90%
Radionuclidic Purity and Identity at Calibration:
In-111 not less than 99.0%

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In 111 activity per vial: 3.0mCi
Specific Concentration: 2.0mCi/ml
Volume per vial: 1.5ml
Radiochemical purity: not less than 90%
pH: 1.0-3.0
Radionuclidic Purity and Identity at Calibration:
In-111: not less than 99.0%
In-114: not more than 0.1% (1µCi/mCi In 111)
Zn-65: not more than 0.1% (1µCi/mCi In 111)
Total chloride as sodium chloride: 0.7-0.9%

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Please see following page for brief summary of prescribing information.
Thallous Chloride TI 201

INDICATIONS AND USAGE: Thallous Chloride TI 201 may be useful in myocardial perfusion imaging for the diagnosis and localization of myocardial infarction. It may also be useful in conjunction with exercise stress testing as an adjunct in the diagnosis of ischemic heart disease (atherosclerotic coronary artery disease).

CONTRAINDICATIONS: None known.

WARNING: In studying patients in whom myocardial infarction or ischemia is known or suspected, care should be taken to assure continuous clinical monitoring and treatment in accordance with safe, accepted procedure. Exercise stress testing should be performed by experienced personnel and in a laboratory equipped with appropriate resuscitation and support apparatus.

PRECAUTIONS: Data are not available concerning the effect of marked alterations in blood glucose, insulin, or pH (such as is found in diabetes mellitus) on the quality of thallium TI 201 scans. Attention is directed to the fact that thallium is a potassium analog, and since the transport of potassium is affected by these factors, the possibility exists that the thallium may likewise be affected.

Thallous Chloride TI 201, as all radioactive materials, must be handled with care and used with appropriate safety measures to minimize external radiation exposure to clinical personnel. Care should also be taken to minimize radiation exposure to patients in a manner consistent with proper patient management.

Carcinogenesis, Mutagenesis, Impairment of Fertility. No long-term animal studies have been performed to evaluate carcinogenic potential or whether Thallous Chloride TI 201 affects fertility in males or females.

Pregnancy Category C. Animal reproductive studies have not been conducted with Thallous Chloride TI 201. It is also not known whether Thallous Chloride TI 201 can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Thallous Chloride TI 201 should be given to a pregnant woman only if clearly needed.

Ideally, examinations using radiopharmaceuticals, especially those electively in nature, of a woman of childbearing age should be performed during the first few (approximately 10) days following the onset of menses.

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 below the age of 16 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 radionuclides and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionuclides.

The expiration date for Thallous Chloride TI 201 is a maximum of five days post-calibration.

ADVERSE REACTIONS: A single adverse reaction to the administration of Thallous Chloride TI 201 has been reported consisting of hypotension accompanied by pruritus and a diffuse rash which responded to antihistamines and steroids within one hour.

DOSE AND ADMINISTRATION: The recommended adult (70kg) dose of Thallous Chloride TI 201 is 1–5 mL. Thallous Chloride TI 201 is intended for intravenous administration only.

For patients undergoing testing thallium studies, imaging is optimally begun within 10–20 minutes after injection. Several investigators have reported improved myocardial-to-background ratios when patients are injected in the fasting state, in an upright posture, or after briefly ambulating.

Best results with thallium imaging performed in conjunction with exercise stress testing appear to be obtained if the thallium is administered when the patient reaches maximum stress and when the stress is continued for 30 seconds to one minute after injection. Imaging should begin within ten minutes post-injection since target-to-background ratio is optimum by that time. Several investigators have reported significant decreases in the target-to-background ratios of lesions attributable to transient ischemia by two hours after the completion of stress testing.

The patient dose should be measured by a suitable radioactivity calibration system immediately prior to administration.

HOW SUPPLIED: Thallous Chloride TI 201 for intravenous administration is supplied as a sterile, non-pyrogenic solution containing at calibration time, 1milCi of Thallous Chloride, 1mg/ml sodium chloride, and 1mg/ml of benzyl alcohol. The pH is adjusted to between 5–7 with hydrochloric acid and/or sodium hydroxide solution. Vials are available in the following quantities of radioactivity: 2–2.2.4 and 6.8 millicuries of Thallous Chloride TI 201.

The contents of the vial are radioactive. Adequate shielding and handling precautions must be maintained.

Catalog Number NRP-427 September 1981

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1 (Revised) A revised schema for calculating the absorbed dose from biologically distributed radionuclides ($5.25)
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SUPPLEMENTS
3 Includes the original pamphlet #5: "Estimates of absorbed fractions for monoenergetic photon sources uniformly distributed in various organs of a heterogeneous phantom." ($1.50)
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"...SERIAL MYOCARDIAL IMAGES MUST BE OBTAINED in order to derive maximal information from the test."1

After performing technetium Tc 99m pyrophosphate myocardial scintigraphy on more than 3,000 patients, a group of clinicians has reported that "Our rewarding experience utilizing this particular imaging technique has been almost certainly the result of our utilization of serial myocardial imaging..."1

The accuracy of serial myocardial imaging as an adjunct in the diagnosis of acute myocardial infarction is well-established. In another recent study, researchers2 have found less than 4% false negative scintigrams when imaging is performed during optimal timing postinfarction and serial 99mTc-PYP myocardial imaging is performed. Other groups have reported 5%-10% false negative results, but this is often without the benefit of serial myocardial imaging.2

For a reprint of the papers cited here plus more information about Technescan PYP, just call your Mallinckrodt sales representative or call 800-325-8181 toll free. (In Missouri, 314-895-2405 collect.)

For brief summary see opposite page.
**TechnetScan® PYP**

**Technetium Tc 99m Pyrophosphate Kit**

**BRIEF SUMMARY**

**CLINICAL PHARMACOLOGY**

When injected intravenously TechnetScan PYP Tc 99m has a specific affinity for areas of altered osteogenesis. It is also concentrated in the injured myocardium, primarily in areas of irreversibly damaged myocardial cells.

One to two hours after intravenous injection of TechnetScan PYP Tc 99m, an estimated 40 to 50 percent of the injected dose has been taken up by the skeleton and approximately 0.1 to 0.2 percent per gram by acutely infarcted myocardium. Within a period of one hour, 10 to 11 percent remains in the vascular system, declining to approximately 2 to 3 percent twenty-four hours post-injection. The average urinary excretion was observed to be about 40 percent of the administered dose after 24 hours.

TechnetScan PYP also has an affinity for red blood cells. When administered 30 minutes prior to the intravenous administration of sodium per-technetate Tc 99m approximately 76 percent of the injected activity remains in the blood pool providing excellent images of the cardiac chambers.

**INDICATIONS AND USAGE**

TechnetScan PYP Tc 99m is a skeletal imaging agent used to demonstrate areas of altered osteogenesis, and a cardiac imaging agent used as an adjunct in the diagnosis of acute myocardial infarction.

As an adjunct in the diagnosis of confirmed myocardial infarction (ECG and serum enzymes positive), the incidence of false negative images has been found to be 6 percent. False negative images can also occur too early or too late in the resolution phase. In a limited study involving 22 patients, it was found that the ECG was positive and serum enzymes questionable or negative, but in whom the final diagnosis of acute myocardial infarction was made, the incidence of false negative images was 23 percent. The incidence of false positive images has been found to be 7 to 9 percent. False positive images have also been reported following coronary by-pass graft surgery, in unstable angina pectoris, old myocardial infarcts and in cardiac contusions.

TechnetScan PYP is a blood pool imaging agent which may be used for gated cardiac blood pool imaging. When administered intravenously 30 minutes prior to the intravenous administration of sodium pertechnetate Tc 99m approximately 76 percent of the injected activity remains in the blood pool.

**CONTRAINDICATIONS**

None.

**WARNINGS**

This radiopharmaceutical should not be administered to patients who are pregnant or lactating unless the information to be gained outweighs the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing capability should be performed during the first 2 weeks (approximately 10 days) following the onset of menses.

Warning: Preliminary reports indicate impairment of brain scans using pertechnetate Tc 99m which have beenpreceded by bone scan. The impairment may result in false positives or false negatives. It is recommended, where feasible, that brain scans precede bone imaging procedures.

Radiopharmaceuticals should be used only by physicians who are qualified by specific training in the safe use and handling of radionuclides produced by nuclear reactor or particle accelerator and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

The TechnetScan PYP Kit must be maintained at refrigeration temperature until use.

The contents of the TechnetScan PYP reaction vial are intended for use in the preparation of Technetium Tc 99m Pyrophosphate Injection. TechnetScan PYP may also be reconstituted with sterile pyrogen-free normal saline containing no preservatives and injected intravenously prior to the administration of sodium pertechnetate Tc 99m.

Sodium pertechnetate Tc 99m solutions containing an oxidizing agent are not suitable for use with the TechnetScan PYP Kit.

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

TechnetScan PYP Tc 99m should not be used more than six hours after preparation.

**PRECAUTIONS**

As in the use of any other radioactive material, care should be taken to ensure minimum radiation exposure to the patient, consistent with proper patient management, and to insure minimum radiation exposure to occupational workers.

Bone Imaging

Both prior to and following TechnetScan PYP Tc 99m administration, patients should be encouraged to drink fluids. Patients should void as often as possible after the TechnetScan PYP Tc 99m injection to minimize background interference from accumulation in the bladder and unnecessary exposure to radiation.

Cardiac Imaging

Patient’s cardiac condition should be stable before beginning the cardiac imaging procedure.

If not contraindicated by the cardiac status, patients should be encouraged to ingest fluids and to void frequently in order to reduce unnecessary radiation exposure.

Interference from chest wall lesions such as breast tumors and healing rib fractures may be minimized by employing the three recommended projections.

**Blood Pool Imaging**

TechnetScan PYP should be injected by direct venipuncture. Heparinized catheter systems should be avoided.

**ADVERSE REACTIONS**

None.

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**NUCLEAR MEDICINE REVIEW SYLLABUS**

Peter T. Kirchner, Ed. This well-indexed volume is a comprehensive review of the major scientific and clinical advances that have taken place in nuclear medicine since the early 1970s. The chapters include Radiopharmacology, Instrumentation, Radiation Effects and Radiation Protection, Cardiovascular, Central Nervous System, Endocrinology, Gastroenterology, Genito-Urinary System, Hematology-Oncology, Pulmonary, Radioassay, and the Skeletal System. ($30.00 + $2.50 postage and handling.)

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NRC Establishes Panel to Advise on Three Mile Island Clean-Up
Henry N. Wagner, Jr., Physician Member
In late March 1979, the NRC established a panel to advise on the Three Mile Island nuclear powerplant.

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Low-Level Waste Law Should Ease for Nuclear Medicine
Low-level waste is a term used to describe radioactive waste that is not classified as high-level waste.

Nuclear Medicine Residents: A Vanishing Breed?
Dennis D. Patton, MD
Chairman, Academic Council, SNM

EPA Considers Guides on Occupational Exposure to Federal Workers
Representatives of SNM and ACNP will attend four EPA public hearings in April and May to present testimony concerning the EPA's current regulations on occupational exposure to radionuclides.

Guides to Misadministration Report
The Nuclear Regulatory Commission (NRC) has published a report on misadministration of radioactive materials.

Kuhl Receives Jung Foundation Prize for Medical Psychiatry
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NUCLEAR MEDICINE TECHNOLOGIST

Progressive and growth oriented south Jersey acute care general hospital has an opening for a Nuclear Medicine Technologist, registered or registry eligible.

Our expanding department provides a broad scope of nuclear medicine activities including full range of in vivo and in vitro procedures, general nuclear imaging and active nuclear cardiology program.

We offer competitive salary and full benefit package, including dental.

Enjoy living in historic Mt. Holly area. We are only a half hour drive from Philadelphia and 45 minutes from the New Jersey shore resorts. Please send resume or call:

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BURLINGTON COUNTY MEMORIAL HOSPITAL
175 Madison Avenue, Mt. Holly, NJ 08060

FACULTY POSITION
RADIOPHARMACEUTICS/PHARMACOKINETICS

Applications are invited for a tenure track appointment as Assistant or Associate Professor of Radiopharmaceutics in an active undergraduate and graduate program. Candidates should possess a Ph.D. in the pharmaceutical sciences with research emphasis and experience in radiopharmaceutics and/or pharmacokinetics. Responsibilities include undergraduate teaching in physical pharmacy and participation in graduate courses in the candidate’s area of interest. The development of independent or collaborative research activities within our vigorous radiopharmaceutical science program is encouraged. Supervision of graduate students in the Biomedical Sciences Doctoral Program is expected. The level of appointment and salary will depend on qualifications and experience.

Send curriculum vitae and list of references to Gerald E. Schumacher, Dean, Northeastern University, College of Pharmacy and Allied Health Professions, 206 Mugar, 360 Huntington Ave., Boston, MA 02115.

Northeastern University is an equal opportunity/affirmative action employer.
ST. VINCENT’S MEDICAL CENTER
School of Nuclear Medicine Technology

The St. Vincent’s Medical Center School of Nuclear Medicine is accepting applications for the next class, which will begin in July 1982.

Registered radiologic technologists or registry-eligible technologists are welcome to apply to the 12-month program. Excellent didactic and clinical training is provided in newly constructed medical center, equipped with excellent instrumentation and performing a wide range of diagnostic testing including a very active cardiac service.

DEADLINE: March 1, 1982.

Approved for V.A. benefits, For additional information write or call: Mary E. Campbell, C.N.M.T., Educational Coordinator, School of Nuclear Medicine Technology, St. Vincent’s Medical Center, 2800 Main St., Bridgeport, CT. Tel: (203)576-5083.

INTERNATIONAL OPPORTUNITIES
IN CYCLOTRON OPERATIONS

THE KING FAISAL SPECIALIST HOSPITAL AND RESEARCH CENTRE
THE CANCER THERAPY INSTITUTE
RIYADH, SAUDI ARABIA

Managed by the Hospital Corporation of America group, this modern regional acute-care specialty and referral center is expanding its services and research capabilities. At this time qualified personnel are being sought to bring the newly constructed CANCER THERAPY INSTITUTE on-line, which will ultimately employ a staff of approximately 135 personnel in radiation therapy/patient treatment, applied clinical research, and manufacture of radiopharmaceuticals.

Positions immediately available include:
Chief Cyclotron Operator—B.S. degree, 7 plus years experience in cyclotron operations, at least one year of experience in medical cyclotrons. (Married status contract available.)
Cyclotron Operator I—B.S. degree in Engineering or Physics, 5 years experience, at least 2 of those in a comparable position on a cyclotron. A strong background in electronics and mechanical ability is a must. (Married status contract available.)
Cyclotron Tech—A.S. is electronic field with 5 plus years experience as a scientific technician. (Married status contract available.)

Benefits for a two-year contract include: exceptional compensation, free transportation, 30-day annual paid vacation, free furnished housing, educational tuition for eligible dependents, bonus pay and leave, and more.

If you wish to become a member of this multinational Health Care team, we would like to hear from you. Please call, toll free, (800)251-2561 or indicate the position in which you are interested by sending your resume and salary history to: Steven H. Ludlam, Sr., International Representative, Hospital Corporation of America, International Division, P.O. Box 550, Nashville, TN 37202. An Equal Opportunity Employer.

HCA
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44A
THE JOURNAL OF NUCLEAR MEDICINE
The Society of Nuclear Medicine Announces A NEW PUBLICATION

This volume, sponsored by the Computer and Instrumentation Councils, contains 25 papers and is divided into five sections covering important areas of computer software development in nuclear medicine, such as functional mapping and imaging of organ systems and the cardiac system.

Other important aspects of computer development and use—background subtraction, computed tomography, and image display techniques—are also included, making this attractive and comprehensive book indispensable to a wide audience of physicians, medical research scientists, and computer specialists.

Functional Mapping of Organ Systems and other computer topics

Edited by Peter D. Esser, Ph.D.

Also of related interest are two other titles sponsored by the Computer Council: Nuclear Cardiology: Selected Computer Aspects ($12.50) and Single Photon Emission Computed Tomography and Other Selected Computer Topics ($18.00 member; $27.00 non-member).

ORDER FUNCTIONAL MAPPING NOW!

$19.00 for SNM members; $28.00 for non-members; plus $2.50 postage and handling for each book ordered. Prepayment required. Order from: Book Order Department. Society of Nuclear Medicine, 475 Park Avenue South, New York, New York 10016.

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Volume 23, Number 4
Who was the second man to break the 4-minute mile?

Until Roger Bannister broke the 4-minute mile, very few runners seriously considered the possibility. Yet, less than 2 months after Bannister proved it could be done, the record was broken again.

Who was the second man to break that mark?
Or the second company to provide thallium-201 for routine use?

There’s an important difference between being second to break a track record and being second to bring a new product to the medical profession: The second sub-4-minute miler ran just as hard, and as far and as fast as Bannister. The second company to introduce a radiopharmaceutical has a lot easier course to run than the first.

Being first with a new isotope costs a great deal more than being second. Being first means putting money up front for clinical research, facilities and staff—with no guarantee of any return on investment. And, as any princess can testify, one must kiss a lot of frogs to find a single prince!


One can only wonder which—if any—of the companies who are traditionally second, third or fourth with products that NEN pioneered would have been first to commit its resources without a guarantee of success. After the leader does it first, the followers make it look easy.
Technetium 99m

Kit for the Preparation of Technetium Tc 99m Sulfur Colloid Injection

For versatile R.E.S. imaging

- Can be prepared with up to 400 millicuries per vial.
- Only one five minute boil is needed.
- Can be rapidly cooled.
- Conveniently ordered from any of MPI's five facilities.
- May be combined with other kits to reduce your cost.

TECHNETIUM 99m TSC KIT FOR THE PREPARATION OF TECHNETIUM Tc 99m SULFUR COLLOID INJECTION

For complete prescribing information consult package insert. A summary of which follows:

INDICATIONS AND USAGE: Technetium Tc 99m Sulfur Colloid Injection is used as an agent for imaging areas of functioning reticuloendothelial cells in the liver, spleen, and bone marrow.

CONTRAINDICATIONS: None known.

WARNINGS: The contents of the two syringes, one syringe containing the sodium thiosulfate solution and the second syringe containing the appropriate buffer solution, are intended only for use in the preparation of the Technetium Tc 99m Sulfur Colloid Injection and are not to be directly administered to the patient. The contents of the kit are not radioactive. However, after the Sodium Pertechnetate Tc 99m is added, adequate shielding of the final preparation must be maintained.

PRECAUTIONS: The components of the kit are sterile and pyrogen-free. It is essential that the user follows the directions carefully and adheres to strict aseptic procedures during preparation of the colloid.

The stability of the colloidal preparation may be decreased in the presence of polyvalent cations, thus resulting in the agglomeration of the individual colloidal particles. These larger particles are likely to be trapped by the pulmonary capillary bed following intravenous injection.

It is recommended that Sodium Pertechnetate Tc 99m solutions containing more than 10 micrograms ml of aluminum ion not be used for formulation of the Technetium Tc 99m Sulfur Colloid Injection. The Sodium Pertechnetate Tc 99m solution must also be free of any traces of oxidizing agents such as peroxides and hypobromites.

Technetium Tc 99m Sulfur Colloid Injection is physically unstable and as such the particles will settle with time. Failure to agitate the vial adequately before use may result in non-uniform distribution of radioactivity.

It is also recommended that because of the increasing probability of agglomeration with aging, a batch of Technetium Tc 99m Sulfur Colloid Injection not be used after six hours from the time of formulation.

The preparation contains no bacteriostatic preservative.

Pregnancy Category C. Animal reproduction studies have not been conducted with Technetium Tc 99m Sulfur Colloid. It is also not known whether Technetium Tc 99m Sulfur Colloid can cause fetal harm when administered to a pregnant woman or if it affects reproductive capacity. Technetium Tc 99m Sulfur Colloid should be given to a pregnant woman only if clearly needed.

Ideally, examinations using radiopharmaceuticals, especially those elective in nature, of a woman of childbearing potential should be performed during the first few days following menopause, when fertility is in its lowest state.

It is not known whether this drug is excreted in human milk. As a general rule, nursing should not be undertaken while a patient is on a drug since many drugs are excreted in human milk.

Safety and effectiveness in children have not been established.

Technetium Tc 99m Sulfur Colloid 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, particularly with proper patient management.

ADVERSE REACTIONS: Hypersensitivity reactions, including anaphylaxis, have been reported in patients receiving sulfur colloid preparations.

One death and several cases of lung and soft tissue uptake other than RES have been reported in the association with the use of Technetium Tc 99m Sulfur Colloid Injection.

HOW SUPPLIED: The TECHNETIUM 99m SULFUR COLLOID KIT is supplied as a sterile pyrogen-free kit consisting of five vials, each containing 0.5 ml of hydrochloric acid in water, free of any known labeled (A), each containing 6.9 mg sodium thiosulfate anhydrous in 3 ml aqueous solution, five sterile syringes (labelled B, C), each containing 5.3 mg gelatin in 2 ml aqueous buffer solution containing 17 mg sodium acetate anhydride.

STORAGE: Store finished drug at room temperature.