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SNM
41ST ANNUAL MEETING

Critical Dates

<table>
<thead>
<tr>
<th>Item</th>
<th>Due Date</th>
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<tr>
<td>ABSTRACT FORMS</td>
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<td>Scientific Papers</td>
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<td>REGISTRATION FORM</td>
<td>5/6/94</td>
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<tr>
<td>HOUSING FORM</td>
<td>5/13/94</td>
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DON'T FORGET THE MID-WINTER MEETING IS IN SEATTLE, WASHINGTON

TITLE: Dedicated Instruments and Computer Processing Techniques for Cardiac and Brain Imaging

DATE: February 7-8, 1994

LOCATION: Westin Hotel, Seattle, WA

SPONSOR: The Computer and Instrumentation Council

THE SOCIETY OF NUCLEAR MEDICINE

MID-WINTER MEETING

Title: Dedicated Instruments and Computer Processing Techniques for Cardiac and Brain Imaging

Location: Westin Hotel, Seattle, WA

Date: Monday-Tuesday, February 7-8, 1994

Sponsor: The Computer and Instrumentation Council of The Society of Nuclear Medicine

All Pre-Registrations Must be Received by January 17, 1994

COMPUTER AND INSTRUMENTATION: DEDICATED INSTRUMENTS AND COMPUTER PROCESSING TECHNIQUES FOR CARDIAC AND BRAIN IMAGING

Westin Hotel, Seattle, WA • Monday, February 7–Tuesday, February 8, 1994

Please Enroll the Following (use copies for additional registrants):

<table>
<thead>
<tr>
<th>Item</th>
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<th>Before 12/17</th>
<th>On/After 12/17</th>
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<td>Students</td>
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Card Number

Expiration Date

Signature

Amount Enclosed (see above)

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Cardiolite fills in the gaps with the superior clarity of technetium

CARDIOLITE fills in information gaps to provide you with a complete clinical picture.

For identifying and localizing ischemia and infarction, CARDIOLITE provides you with much more. Through expanded uses, CARDIOLITE is the only single agent to provide perfusion and function information with gated wall motion or first pass.

CARDIOLITE fills in scheduling gaps, too. By uncoupling the time of injection from the time of imaging, patients can be stressed one after another, then imaged at any time up to 4 hours after injection, eliminating camera downtime.

Get superior information and throughput. Fill in the gaps with CARDIOLITE.

Cardiolite
Kit for the preparation of Technetium Tc99m Sestamibi

Fills in the gaps...with clarity that lasts

Please see next page for brief summary of prescribing information.
DESCRIPTION: Each 5mL vial contains sterile, non-pyrogenic, lyophilized mixture of: Tc-99m (Stannous) methylene diphosphonate (Sn(III) Diphosphonate) 2.5mg Sodium Citrate Dihydrate - 2.6mg L-Cysteine Hydrochloride Monohydrate - 1.0mg
Stannous Chloride - 0.025mg Sodium Chloride - 0.075mg Tin Chloride (Stannous and Sulfuric acid) maximum (SnCl2+H2SO4) - 0.006mg
Prior to lyophilization the pH is 5.3-5.8. The contents of the vial are lyophilized and stored under nitrogen.
This drug is administered by intravenous injection for diagnostic use after reconstitution with sterile, non-pyrogenic, 0.9% Sodium Chloride Injection. The pH of the reconstituted product is 5.5 (5.0-6.0). No bacteriostatic preservative is present.
The precise structure of the technetium complex is Tc99m(MIBI)3, where MIBI is 2-methoxy isobutyl isocyanate.

INDICATIONS AND USAGE: CARDIOLITE, Kit for the preparation of Technetium Tc99m Sestamibi is a myocardial perfusion agent that is useful in the evaluation of ischemic heart disease. CARDIOLITE, Kit for the preparation of Technetium Tc99m Sestamibi is useful in distinguishing normal from abnormally perfused myocardium and in the localization of the abnormality, in patients with suspected myocardial infarction, ischemic heart disease or coronary artery disease. Evaluation of ischemic heart disease or coronary artery disease is accomplished using rest and stress techniques.
CARDIOLITE, Kit for the preparation of Technetium Tc99m Sestamibi, is also useful in the evaluation of myocardial function using the first pass technique. Rest-exercise imaging with Tc99m Sestamibi in conjunction with other diagnostic information may be used to evaluate ischemic heart disease and its localization.
In clinical trials, the incidence of the complete wall, inferior-posterior wall and isolated apex, localization in the anterior or inferior-posterior wall in patients with suspected angina pectoris or coronary artery disease was shown. Disease localization isolated to the apex has not been established. Tc99m Sestamibi has not been studied or evaluated in other cardiac territories.
It is usually not possible to differentiate recent from old myocardial infarction or to differentiate recent myocardial infarction from ischemia.

CONTRAINdications: None known.

WARNINGS: In studies in patients in whom cardiac disease is known or suspected, care should be taken to exclude other causes of chest pain. Radiopharmaceuticals are not to be used in patients with a history of allergy to the component drug.

STRESS: In patients with a known or suspected diagnosis of myocardial infarction, the test should be performed within 24 hours of the event.

PRECAUTIONS:

GENERAL

The contents of the vial are intended only for use in the preparation of Technetium Tc99m Sestamibi and are not to be administered directly to the patient without first undergoing the preparatory procedure.
Radioactive drugs must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patient consistent with proper patient management.
Contents of the kit before preparation are not radioactive. However, after the Sodium Pertechnetate Tc99m Injection is added, adequate shielding of the final preparation must be maintained.
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.
Technetium Tc99m labeling reactions involved depend on maintaining the stannous ion in the reduced state. Hence, Sodium Pertechnetate Tc99m Injection containing oxidant should not be used.
Technetium Tc99m Sestamibi should not be used more than six hours after preparation.
Radioactive drug handling is to be used only by physicians who are qualified by training and experience in the safe use and handling of radiocolloids and whose experience and training have been approved by the appropriate government agency authorized to license the use of radiocolloids.
Stress testing should be performed only under the supervision of a qualified physician and in a laboratory equipped with appropriate resuscitation and support apparatus.

Pregnancy Category C
Animal reproduction and teratogenesis studies have not been conducted with Technetium Tc99m Sestamibi. It is also not known whether Technetium Tc99m Sestamibi may cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. There have been no studies in pregnant women. Technetium Tc99m Sestamibi should be given to a pregnant woman only if clearly needed.

Nursing Mothers
Technetium Tc99m Sestamibi is excreted in human milk during lactation. It is not known whether Technetium Tc99m Sestamibi is excreted in human milk. Therefore, formula feedings should be substituted for breast feedings.

Pediatric Use
Safety and effectiveness in children below the age of 18 have not been established.

ADVERSE REACTIONS: During clinical trials, approximately 8% of patients experienced a transient metallic or bitter taste immediately after the injection of Technetium Tc99m Sestamibi. A few cases of transient headache, flushing and non-pitting rash have also been attributed to administration of the agent. Cases of angina, chest pain, and death have occurred (See WARNINGS and PRECAUTIONS).
The following adverse reactions have been rarely reported: skin and symptoms consistent with seizure occurring shortly after administration of the agent: transient arthritis in the wrist, joint and severe hyperparathyroidism, which was characterized by dyspepsia, hypotension, bradycardia, asthma and vomiting within two hours after a second injection of Technetium Tc99m Sestamibi.

DOSAGE AND ADMINISTRATION: The suggested dose range for I.V. administration in a single dose to be employed in the average patient (70Kg) is:

370-1110MBq (10-30mCi)
The dose administered should be the lowest required to provide an adequate study consistent with ALARA principles (see also PRECAUTIONS).

When used in the diagnosis of myocardial infarction, imaging should be completed within four hours after administration.
The patient dose should be measured by a suitable radioactivity calibration system immediately prior to patient administration. Radiochemical purity should be checked prior to patient administration.
Peristent drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit.
Store at 15-25°C before and after reconstitution.

RADIATION DOSIMETRY: The radiation doses to organs and tissues of an average patient (70Kg) per 1110MBq (30mCi) of Technetium Tc99m Sestamibi injected intravenously are shown in Table 4.

Table 4. Radiation Absorbed Doses from Tc99m Sestamibi

<table>
<thead>
<tr>
<th>Organ</th>
<th>mGy/MBq</th>
<th>mGy/MBq</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0 hour</td>
<td>4.0 hour</td>
</tr>
<tr>
<td></td>
<td>2.0hour</td>
<td>4.0hour</td>
</tr>
<tr>
<td></td>
<td>30mCi</td>
<td>1110MBq</td>
</tr>
<tr>
<td>Breasts</td>
<td>0.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Gallbladder Wall</td>
<td>2.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Small Intestine</td>
<td>3.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Upper Large Intestine Wall</td>
<td>5.4</td>
<td>55.4</td>
</tr>
<tr>
<td>Lower Large Intestine Wall</td>
<td>3.8</td>
<td>40.6</td>
</tr>
<tr>
<td>Stomach Wall</td>
<td>0.6</td>
<td>6.1</td>
</tr>
<tr>
<td>Heart Wall</td>
<td>0.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Kidneys</td>
<td>2.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Liver</td>
<td>0.6</td>
<td>5.8</td>
</tr>
<tr>
<td>Lungs</td>
<td>0.2</td>
<td>2.8</td>
</tr>
<tr>
<td>Bone Surfaces</td>
<td>0.7</td>
<td>6.8</td>
</tr>
<tr>
<td>Thyroid</td>
<td>0.7</td>
<td>7.0</td>
</tr>
<tr>
<td>Ovaries</td>
<td>1.5</td>
<td>15.5</td>
</tr>
<tr>
<td>Testes</td>
<td>0.3</td>
<td>3.4</td>
</tr>
<tr>
<td>Red Marrow</td>
<td>0.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Urinary Bladder Wall</td>
<td>2.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Total Body</td>
<td>0.5</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Radiopharmaceutical Internal Dose Information, July 1991, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831, (815) 576-3449.

HOW SUPPLIED: Du Pont Radiopharmaceutical’s CARDIOLITE, Kit for the Preparation of Technetium Tc99m Sestamibi, is supplied as a 5ml vial in kits of two (2), five (5) and thirty (30) vials, sterile and non-pyrogenic.

Prior to lyophilization the pH is between 5.3-5.9. The contents of the vials are lyophilized and stored under nitrogen. Store at 15-25°C before and after reconstitution. Technetium Tc99m Sestamibi contains no preservatives. No kits included in each 2ml kit are one (1) package insert, six (6) vial shield labels and six (6) radiation warning labels. Included in each 5ml kit are two (2) package inserts, six (6) vial shield labels and six (6) radiation warning labels. Included in each 30ml kit are one (1) package insert, thirty (30) vial shield labels and thirty (30) radiation warning labels.

The U.S. Nuclear Regulatory Commission has approved this reagent kit for distribution to persons licensed to use byproduct material pursuant to sections 35.11 and section 35.220 of title 10 CFR Part 35, to persons who hold an equivalent license issued by Agreement State, and, outside the United States, to persons authorized by the appropriate authority.

Marketed by Du Pont Radiopharmaceutical Division The J. T. Baker Merck Pharmaceutical Co. 331 Treble Cove Road Billerica, Massachusetts, USA 01862 For ordering Tel Toll Free: 800-225-1572 All other business: 800-362-2668 (For International call 617-350-9651)
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When pain is a moving target
New

METASTRON®
(STRONTIUM-89 CHLORIDE INJECTION)

Simultaneously targets all sites of metastatic bone pain.

LONG-TERM PALLIATION IN ONE CONVENIENT DOSE.

▼ One dose of Metastron provides pain relief for an average of up to 6 months.¹²

▼ As an adjunct to radiotherapy, 63.6% of patients receiving Metastron (10.8 mCi) had reduced pain at 6 months as compared to 35.0% of patients receiving placebo (n=42).³

▼ Preferentially incorporates into multiple sites of metastatic bone — the dose absorbed in metastatic lesions is approximately ten times that absorbed in normal bone marrow.⁴⁶
HIGHLY EFFECTIVE NON-NARCOTIC THERAPY.

▼ Metastron may reduce or eliminate the need for dose escalation of narcotic analgesics.²⁴

PALLIATION OF PAIN DEMONSTRATED IN THE MAJORITY OF PATIENTS AT THE RECOMMENDED DOSE.

Metastron overall response rate (% of patients).¹⁴,⁷

67%

Pain relief evaluations included diaries, records of medication taken, sleep patterns, bone scans, and Karnofsky index.

¹ Open-label study of 137 patients who received 111-148 MBq, 3.0-4.0 mCi of Metastron.
² Open-label study of 83 patients who received 150 MBq, -4 mCi or more of Metastron.
³ Double-blind, crossover study of 26 patients who received 150 MBq, -4 mCi of Metastron or placebo.

ADJUNCTIVELY DELAYS THE MEDIAN TIME TO PROGRESSION OF PAIN BY 7 MONTHS OVER RADIOTHERAPY ALONE.

Median time to requirement for additional radiotherapy at new pain site.⁸³

³ From a multicenter, double-blind study of 126 patients who received a single injection of either Metastron 400 MBq, 10.8 mCi or placebo with fractionated doses of local field radiotherapy (20-30 Gy).⁹

Metastron (10.8 mCi) +
RADIOTHERAPY

Placebo +
RADIOTHERAPY

5.8 MONTHS

³ From a multicenter, double-blind study of 126 patients who received a single injection of either Metastron 400 MBq, 10.8 mCi or placebo with fractionated doses of local field radiotherapy (20-30 Gy).⁹

67%

Generally well tolerated.

▼ A depression of white blood cell (20%) and platelet (30%) levels may occur in patients treated with Metastron — clinically significant toxicity is rare.²

AN IMPROVED QUALITY OF LIFE FOR PATIENTS.

▼ Metastron may improve patient quality of life, as measured by assessments of mood, mobility, appetite, sleep pattern, and analgesic consumption.¹³,⁵

▼ Proven in 7 years of clinical experience in more than 6000 patients worldwide.²

Please see following page for full prescribing information.

Introducing

METASTRON* (STRONTIUM-89 CHLORIDE INJECTION)

A new way to manage metastatic bone pain.
Introducing Metaastron
(Strontium-89 Chloride Injection)

Description: Metaastron is a sterile, non-pyrogenic, aqueous solution of Strontium-89 for intravenous administration. The solution contains no preservatives.

Each milliliter contains: Strontium-89 Chloride 10.9 - 22 mg
Water for injection q.s. to 1 ml
The radiocative concentration is 37 MBq/ml, 1 mCi/ml. The specific activity is 2.96 - 6.17 MBq/mg, 80-167 μCi/mg at calibration. The pH of the solution is 4.7 - 7.5.

Pharmacodynamic Properties: Strontium-89 decays by beta emission with a physical half-life of 50.5 days. The maximum beta energy is 1.460 MeV (100%). The maximum range of 5.9 from Strontium-89 in tissue is approximately 8 mm. Radioactive decay factors to be applied to the stated value for radioactive concentration at calibration, when calculating injection volumes at the time of administration, are given in Table 1.

Table 1: Decay of Strontium-89

<table>
<thead>
<tr>
<th>Day</th>
<th>Factor</th>
</tr>
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<tbody>
<tr>
<td>24</td>
<td>0.92</td>
</tr>
<tr>
<td>22</td>
<td>0.90</td>
</tr>
<tr>
<td>20</td>
<td>0.87</td>
</tr>
<tr>
<td>18</td>
<td>0.84</td>
</tr>
<tr>
<td>16</td>
<td>0.80</td>
</tr>
</tbody>
</table>

 foreseeable that the drug is secreted in human milk.

Pediatric Use: Safety and effectiveness in children below the age of 18 years have not been established.

Adverse Reactions: A single case of fatal septicaemia following leukopenia was reported during clinical trials. Most severe reactions of marrow toxicity could thus be managed by conventional methods.

A small number of patients have reported a transient increase in bone pain at 36 to 72 hours after injection. This is usually self-limiting and mild, and controllable with analgesics. A single patient reported chills and fever 12 hours after injection without long-term sequelae.

Dosage and Administration: The recommended dose of Metaastron is 148 MBq, 4 mCi, administered by intravenous injection. If the patient is known to have a bone turnover rate of less than 0.75, Metaastron may be administered at a lower dose. The patient may be made to undergo a suitable radioactivity calibration system immediately prior to administration.

Radiostabilization: The estimated radiation dose that would be delivered over time by the intravenous injection of 37 MBq of Strontium-89 to a normal healthy adult is given in Table 4. Data are taken from the ICRP publication "Radiation Dose to Patients from Radioisotopes of Strontium-89 and 90Y 1983" Vol. 13 No. 1-4 Page 179. Pergamon Press, 1988.

Table 4: Strontium-89 Dosimetry

<table>
<thead>
<tr>
<th>Organ/Stable Isotope</th>
<th>mGy/MBq</th>
<th>rad/mCi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone Surface</td>
<td>17.0</td>
<td>63.0</td>
</tr>
<tr>
<td>Bone Red Marrow</td>
<td>11.0</td>
<td>40.7</td>
</tr>
<tr>
<td>Bone Lower Extremity</td>
<td>4.3</td>
<td>17.4</td>
</tr>
<tr>
<td>Bone Other</td>
<td>1.3</td>
<td>4.8</td>
</tr>
</tbody>
</table>

When static osseous metabolites are present, significantly enhanced localisation of the radioisotope will occur with correspondingly higher doses to the metastasis compared with normal bones and other organs.

The radiation dose hazard in handling Strontium-89 chloride injection during dosing and transporting is similar to that from phosphorus-32. The beta emission has a range in water of about 8 mm (max) and in glass of about 3 mm, but the bremsstrahlung radiation may augment the contact dose.

Measured values of the dose on the surface of the unwrapped vial are about 65 mrad/min/μCi. It is recommended that the vial be kept inside its transportation shield whenever possible.

How Supplied: Metaastron is supplied in a 15 ml vial containing 148 MBq, 4 mCi. The vial is shipped in a transportation shield with approximately 3 mm lead thickness, package insert, and two therapeutic warning labels.

The vial and its contents should be stored in its transportation container at room temperature (15-25°C 59-77°F). The calibration date for radioactivity content and expiration date are quoted on the vial label. The expiration date will be 36 days after calibration. Stability studies have shown many do not change in any of the product characteristics monitored during routine product quality control over the period from manufacture to expiration.

The radiopharmaceutical is licensed by the Illinois Department of Nuclear Safety for distribution to products licensed pursuant to 20 Illinois Adm Code 330.280 (a) and Part 335 Subpart 7.335.0101 or under equivalent licenses of the USNRC or an Agreement State.

THIS PRODUCT INFORMATION ISSUED JUNE, 1983

Manufactured by:
Amerham International plc
Amerham, England

Medi-Phys, Inc.
2623 S. Clearbrook Drive
Arlington Heights, Illinois 60005

References:
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It’ll change your point of view.
No matter how you look at it, VERTEX turns conventional wisdom concerning gamma cameras completely on its head.

In the race to stay ahead of the demands in nuclear imaging today, VERTEX leads the way.

It's the only gamma camera in existence that robotically aligns two large-field-of-view detector heads precisely into position at 90 or 180 degrees. Optimized for all of today's nuclear medicine procedures, VERTEX alone doubles throughput for both cardiac SPECT and total body imaging.

Designed for maximum efficiency, it also reduces non-imaging time with unique, labor-saving features - including the industry's only fully automated collimator exchange. So whether you're considering your current patient mix or anticipating future imaging requirements, you're always one step ahead with VERTEX.

Fast and Accurate.

VERTEX speeds through studies with state-of-the-art software and robotic controls that minimize operator intervention.

One-step preprogrammed entries activate imaging protocols that can be customized for your specific site requirements. Laser body contouring accurately defines patient outlines to shorten set-up time and insure outstanding image quality. And VERTEX collimators are exchanged automatically, easily accessing a full range of energy levels - including fan beam.

Powered by Sun™ SPARC® technology, ADAC's PEGASYS™ workstation accelerates processing with icon-driven menus in a user-friendly windowing environment. Supported by a complete library of continuously updated software, it's easy to see why PEGASYS is the most popular workstation in nuclear medicine today, with over 1200 installations worldwide.

Flexible for the Future.

As the world's most versatile gamma camera - capable of performing every procedure from planar to total body and SPECT - VERTEX is uniquely positioned to accommodate both short- and long-term changes in procedure mix. And in today's volatile healthcare environment, remaining flexible makes good economic sense.

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Computers in Nuclear Medicine: A Practical Approach
Kai Lee, PhD
This illustrated guide explains both how computers work and how processing techniques obtain diagnostic information from radionuclide images. Coverage includes:
- Hardware components in nuclear medicine computer systems. Principles behind common image processing techniques.
- How nuclear cardiology and SPECT highlight the interaction of hardware and software in nuclear medicine.
$30 members
$45 nonmembers. 1992

Clinical Computers in Nuclear Medicine
Katherine Rowell, MS, CNMT, Editor
A companion text to Computers in Nuclear Medicine, this survey traces the evolution of nuclear medicine computer technology. Featured chapters describe how nuclear medicine study protocols have been radically altered through the use of computers; the revolutionary impact of computers on quality assurance; and the development of software and hardware for the gamma camera. An essential guide for staff operating computers in clinical settings.
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AccuSync models 5L, 6L and 1L are CSA and ETL (UL544) approved

<table>
<thead>
<tr>
<th>Model</th>
<th>Strip Chart</th>
<th>CRT Monitor</th>
<th>HR/R-R Int</th>
<th>Trigger</th>
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<tr>
<td>5L</td>
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<td>6L</td>
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</table>

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The rule of thumb in stress perfusion imaging

In myocardial perfusion imaging, the quality of information is directly related to the level of exercise, as measured by the percentage of maximal predicted heart rate achieved by the patient at the time of tracer injection. This is because myocardial oxygen demand is mainly determined by the heart rate. When oxygen demand is increased by exercise, the disparity in coronary blood flow caused by the presence of significant CAD produces perfusion defects, which allow for lesion detection. This provides valuable physiological information for CAD diagnosis.\(^1\)

A rule of thumb governs the exercise stress test. Patients are asked to exercise to 85% of their maximal predicted heart rate. This rule has been determined from a review of exercise ECG studies where diagnostic information has been considered inconclusive at heart rates below 85% of the maximal predicted heart rate.\(^2\)

When to bend it

However, not all patients will achieve 85% of their maximal predicted heart rate. Some may reach diagnostic endpoints in testing. Others will have physical limitations or may be on beta blockers that prevent them from achieving the optimal level.

To maximize diagnostic certainty and avoid the risk of false-negative test results, suboptimal stress should be avoided.

Pharmacologic stress: The measure of success in imaging after suboptimal exercise

In images taken after patients have failed to reach 85% of their maximal predicted heart rate, defects may go undetected.\(^3\) \(^4\) I.V. Persantine\(^\text{R}\) (dipyridamole USP) can help salvage potentially nondiagnostic perfusion studies where patients have achieved suboptimal exercise levels. This form of pharmacologic stress, administered when the patient's heart rate has returned to baseline, allows for reliable results and may result in a higher yield of useful imaging information.\(^5\)

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---

* Serious adverse reactions associated with the administration of I.V. Persantine have included fatal and nonfatal myocardial infarction, ventricular fibrillation, symptomatic ventricular tachycardia, transient cerebral ischemia, and bronchospasm. Severe adverse events have occurred infrequently (0.3%) in a study of 3311 patients. Patients with a history of unstable angina may be at a greater risk for severe myocardial ischemia. Patients with a history of asthma may be at a greater risk for bronchospasm.

Persantine\(^\text{R}\) is a registered trademark of Boehringer Ingelheim International GmbH. I.V. Persantine\(^\text{R}\) is manufactured and distributed by Du Pont Pharma under license from Boehringer Ingelheim Pharmaceuticals, Inc.

Please see brief summary of prescribing information on reverse for contraindications, warnings, and adverse reactions.

**References:**

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I.V. PERSANTINE® (dipyridamole USP) Injection 5mg/ml

Brief Summary of Prescribing Information

CONTRAINDICATIONS Hypersensitivity to dipyridamole.

WARNINGS Serious adverse reactions associated with the administration of intravenous PERSANTINE® (dipyridamole USP) have included fatal and non-fatal myocardial infarction, ventricular fibrillation, symptomatic ventricular tachycardia, transient cerebral ischemia, and bronchospasm.

In a study of 3571 patients given intravenous PERSANTINE as an adjunct to thallium myocardial perfusion imaging, two types of serious adverse events were reported: (1) four cases of myocardial infarction (0.1%), two fatal (0.05%); and two non-

fatal (0.05%); and (2) six cases of severe bronchospasm (0.2%). Although the incidence of these serious adverse events was small (0.3%, 10 of 3571), the potential clinical information to be gained through use of intravenous PERSANTINE thallium imaging must be weighed against the risk to the patient.

Patients with a history of unstable angina may be at a greater risk for severe myocardial ischemia. Patients with a history of asthma may be at a greater risk for bronchospasm during IV Persantine use.

When thallium myocardial perfusion imaging is performed with intravenous PERSANTINE, parenteral amphotericin B should be readily available for relieving adverse events such as bronchospasm or chest pain. Vital signs should be monitored during, and for 10-15 minutes following, the intravenous infusion of PERSANTINE and an electrocardiographic tracing should be obtained using at least one lead.

Severe chest pain or bronchospasm occurs, parenteral amphotericin B may be administered by slow intravenous injection (50-100 mg over 30-60 seconds) in doses ranging from 50 to 200 mg. In the case of severe hypotension, the patient should be placed in a supine position with the head tilted down if necessary, before administration of parenteral amphotericin B. If 250 mg of amphotericin B does not relieve chest pain symptoms within a few minutes, sublingual nitroglycerin may be administered. If chest pain continues despite use of amphotericin B and nitroglycerin, the possibility of myocardial infarction should be considered. If the clinical condition of a patient with an adverse event permits a one minute delay in the administration of parenteral amphotericin B, thallium-201 may be injected and allowed to circulate for one minute before the injection of amphotericin B. This will allow initial thallium perfusion imaging to be performed before reversal of the pharmacologic effects of PERSANTINE on the coronary circulation.

PRECAUTIONS See WARNINGS.

Drug Interactions Oral maintenance theophylline may abolish the coronary vasodilating effect of intravenous PERSANTINE® (dipyridamole USP) administration. This could lead to a false negative thallium imaging result.

Cardiogenic, Myocardial, Impairment of Fertility In studies in which dipyridamole was administered in the feed at doses of up to 75 mg/kg/day (9.4 times the maximum recommended daily human oral dose) in mice (up to 128 weeks in males and up to 142 weeks in females) and rats (up to 111 weeks in males and females), there was no evidence of drug related cardiogenic. Malignancy tests of dipyridamole with bacterial and mammalian cell systems were negative. There was no evidence of impaired fertility when dipyridamole was administered to male and female rats at oral doses up to 500 mg/kg/day (63 times the maximum recommended daily human oral dose). A significant reduction in number of corpora lutea with consequent reduction in implantations and live fetuses was, however, observed at 1250 mg/kg/day.

*Calculation based on assumed body weight of 50 kg.

**Pharmacology** Dipyridamole is excreted in human milk.

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

ADVERSE REACTIONS Adverse reaction information concerning Intravenous PERSANTINE® (dipyridamole USP) is derived from a study of 3911 patients in which intravenous PERSANTINE was used as an adjunct to thallium myocardial perfusion imaging and from spontaneous reports of adverse reactions and the published literature.

Serious adverse events (fatal and non-fatal myocardial infarction, severe ventricular arrhythmias, and serious CNS abnormalities) are described previously (see WARNINGS).

In the study of 3911 patients, the most frequent adverse reactions were: chest pain/angina pectoris (19.7%), electrocardiographic changes (most commonly ST-T changes) (15.9%), headache (12.2%), and dizziness (11.8%). Adverse reactions occurring in greater than 1% of the patients in the study are shown in the following table.

Incidence (%) of Drug-Related Adverse Events

<table>
<thead>
<tr>
<th>Event</th>
<th>Incidence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest Pain/Anxiety</td>
<td>19.7</td>
</tr>
<tr>
<td>Headache</td>
<td>12.2</td>
</tr>
<tr>
<td>Dizziness</td>
<td>11.8</td>
</tr>
<tr>
<td>Electrocardiographic Abnormalities/ST-T Changes</td>
<td>7.5</td>
</tr>
<tr>
<td>Electrocardiographic Abnormalities/Extrasystoles</td>
<td>5.2</td>
</tr>
<tr>
<td>Hypertension</td>
<td>4.6</td>
</tr>
<tr>
<td>Nausea</td>
<td>4.6</td>
</tr>
<tr>
<td>Flushing</td>
<td>3.4</td>
</tr>
<tr>
<td>Electrocardiographic Abnormalities/Tachycardia</td>
<td>3.2</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>2.6</td>
</tr>
<tr>
<td>Pain Unspecified</td>
<td>2.6</td>
</tr>
<tr>
<td>Blood Pressure Lability</td>
<td>1.6</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.5</td>
</tr>
<tr>
<td>Tachycardia</td>
<td>1.3</td>
</tr>
<tr>
<td>Fatigue</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Less common adverse reactions occurring in 1% or less of the patients within the study included:

Cardiovascular System: Electrocardiographic abnormalities unspecified (0.8%), arrhythmia unspecified (0.6%), palpitation (0.3%), ventricular tachycardia (0.2% see WARNINGS), bradycardia (0.2%), myocardial infarction (0.1% see WARNINGS), AV block (0.1%), syncope (0.1%), orthostatic hypotension (0.1%), atrial fibrillation (0.1%), supraventricular tachycardia (0.1%), ventricular arrhythmia unspecified (0.03% see WARNINGS), heart block unspecified (0.03%), cardiomypathy (0.03%), edema (0.03%).

Central and Peripheral Nervous System: Hypotension (0.5%), hypertonia (0.3%), nervousness/anxiety (0.2%), tremor (0.1%), abnormal coordination (0.03%), somnolence (0.03%), dysphonia (0.03%), migraine (0.03%), vertigo (0.03%).

Gastrointestinal System: Dyspepsia (1.0%), dry mouth (0.8%), abdominal pain (0.7%), flatulence (0.6%), vomiting (0.4%), eructation (0.1%), dysphagia (0.03%), tenesmus (0.03%), appetite increased (0.03%).

Respiratory System: Pharyngitis (0.3%), bronchospasm (0.2% see WARNINGS), hyperventilation (0.1%), rhinits (0.1%), coughing (0.03%), pleural pain (0.03%).

Other: Myalgia (0.9%), back pain (0.6%), injection site reaction unspecified (0.4%), phlebitis (0.4%), edema (0.3%), malaise (0.3%), arthralgia (0.3%), injection site pain (0.1%), lacrimation (0.1%), lightheadedness (0.1%), vision abnormalities unspecified (0.1%), dysmenorrhea (0.1%), thirst (0.03%), dyspnea (0.03%), ataxia (0.03%), eye pain (0.03%), nasal pain (0.03%), periapical pain (0.03%), breast pain (0.03%), intermittent claudication (0.03%), leg cramping (0.03%).

OVERDOSAGE No cases of overdose in humans have been reported. It is unlikely that overdose will occur because of the nature of use (i.e., single intravenous administration in controlled settings). See WARNINGS.

Cautions: Federal law prohibits dispensing without prescription.

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Section of Nuclear Medicine

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Viro Glove
A new cream called Viro Glove that keeps hands sterilized has been introduced by Knight Industries, Inc. When correctly applied to the skin, Viro Glove forms a protective antiseptic barrier that kills the pathogen AIDS HIV-1 as well as other common bacterial, fungal and viral disease-producing agents on contact for up to 6 hr. Viro Glove is somewhat similar in feel and scent to regular hand creams and is the first nontoxic product of its kind that has achieved 100% sterile hands for up to 4 hr in laboratory tests. The cream is moisture-activated, waterproof, and oil-and salt-resistant. Health care professionals working in at-risk environments can apply the cream to their skin for added protection while on the job. Viro Glove has also been shown to kill sexually transmitted diseases such as gonorrhea and herpes, the highly contagious virus infection influenza as well as ARC (AIDS-related complex), staphylococcus, streptococcus, pseudomonas, trichophyton, mentagrophytes and candida albicans. Knight Industries, Inc., 750 East Sample Rd., Pompano Beach, FL 33064. (305) 942-8708.

Pinnacle XP
Medasys, Inc. has introduced the new Pinnacle XP, a computer workstation designed especially for the tight budget constricitions of many nuclear medicine departments. Its turn-key style operation makes it simple to use yet takes advantage of the extensive Pinnacle software library. Single keystroke commands invoke specific organ protocols that prompt the user through entire acquisition and processing procedures. Dedicated keys on the XP perform specific functions such as changing color tables with a single keystroke, opening and closing acquisition and processing tasks and accessing working or DOS programs. The XP includes a whole family of integrated processors, each dedicated to optimally performing key tasks and processes while using the latest high-speed technology. The host processor operates at 33 MHz with 8 Mbytes of programmable memory and 64 Kbytes of hardware cache memory and provides the main processing environment and capability of the system but calls on other processor modules to perform specialized tasks. Medasys, Inc., 4651 Platt Lane, Ann Arbor, MI 48108. 1-800-331-1958.

Radioactive Decontamination Kit
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Tubing Sample Card
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The Society of Nuclear Medicine
SNM Awards Committee
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The Neuroimaging and Drug Action Section, Addiction Research Center, National Institute on Drug Abuse (NIDA) of the National Institutes of Health (NIH) has opportunities in the area of medical image processing. Research associates under the Intramural Research Training Award (IRTA) and/or research associates under the Postdoctoral Research Associateship Program conducted by the National Research Council (NRC). The research involves developing new modalities for analysis of medical images (PET and MRI) including image registration techniques and statistical analysis of change distributions. The applicant will work with an established PET team using components of the NIH Multimodality Image Processing System (MRIPS) to implement analysis algorithms. A Ph.D. in Physics or Electrical Engineering, with a strong background in computerized image processing is required. To qualify for the position, the applicant may have no more than five years relevant postdoctoral experience. Salary is commensurate with experience. Opportunities at NIH are open to all citizens of the United States and to foreign nationals who hold an immigrant (Permanent Resident) Visa. The environment is smoke-free and drug-free. To apply, send a curriculum vitae, summary of research interests, publication list, and names of four scientists who can provide reference of scientific work to:

Dr. Edythe D. London, Ph.D. National Institutes of Health NIDA Addiction Research Center P.O. Box 5180 Baltimore, MD 21224

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