2.1 General Dosage

Technetium Tc99m Sestamibi has been rarely associated with acute severe allergic reactions. Most cases of severe allergic reactions have been associated with the use of iodine-containing contrast media. In studies in which patients were challenged with iodinated contrast material, 2% of patients reacted with allergic reactions and 0.2% with anaphylaxis.

2.2 Radiation Dosimetry

For Myocardial Imaging: The suggested dose range for I.V. administration of MIRALUMA® for the preparation of Technetium Tc99m Sestamibi for Injection is expressed as a percentage of activity that may be present in the opposite breast. Therefore, mammography should be carefully considered to determine the extent of the breast abnormality.

2.4 Determination of the Estimated Radiation Absorbed Dose

The estimated radiation absorbed dose is provided in Table 1.1. The values are calculated on the basis of the patient's body weight and height and assuming the patient to be at the average distance of 1 meter from the source. The values are presented for different organs and tissues, including the urinary bladder, liver, spleen, and bone marrow.

Table 1.1: Estimated Radiation Absorbed Dose

<table>
<thead>
<tr>
<th>Organ</th>
<th>Estimated Radiation Absorbed Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary Bladder</td>
<td>2.0 µCi</td>
</tr>
<tr>
<td>Liver</td>
<td>3.5 µCi</td>
</tr>
<tr>
<td>Spleen</td>
<td>2.0 µCi</td>
</tr>
<tr>
<td>Bone Marrow</td>
<td>3.0 µCi</td>
</tr>
<tr>
<td>Bone</td>
<td>3.0 µCi</td>
</tr>
</tbody>
</table>

The estimated radiation absorbed dose is calculated using the following equation:

\[ \text{Estimated Radiation Absorbed Dose} = \frac{\text{Activity} \times \text{Distance}}{\text{Weight} \times \text{Height}} \]

Where:
- Activity is the amount of radiopharmaceutical administered to the patient (in MBq or mCi).
- Distance is the distance between the patient and the radiation source (in cm).
- Weight is the patient's weight (in kg).
- Height is the patient's height (in cm).

3.2.1 General Precautions

The radiation absorbed dose is calculated using the equation above. The values presented in Table 1.1 are based on the assumption that the patient is at the average distance of 1 meter from the radiation source.

4. INSTRUCTIONS FOR PREPARATION

4.1 General Procedure

The preparation of the Technetium Tc99m Sestamibi for Injection is performed as follows:

- Obtain a Baker-Flex Aluminum Oxide coated, plastic TLC plate, #1 B-F, pre-cut, pre-dried plate from the desiccator just prior to use.

4.2 Preparing the Vials

- Use a sterile shielded syringe, aseptically obtain additive-free, sterile, radiocolloid-free Technetium Tc99m for injection (20-30 µCi).
- Place the vial in the thermal cycler radiation shield.
- Aseptically add Technetium Tc99m Sestamibi solution (20-30 µCi) side by side on top of the vial in the thermal cycler radiation shield.
- Using proper shielding, the vial contents should be visually inspected. Use only the solution that is clear.
- Remove the solution containing the Technetium Tc99m Sestamibi from the vial.
- Store the solution containing the Technetium Tc99m Sestamibi for Injection at 15° to 30°C (59° to 86°F) for up to 4 hours.

4.3 Radiographic Imaging

- To report SUSPECTED ADVERSE REACTIONS, contact Lantheus Medical Imaging, Inc. at 1-800-522-4111, Kit for the Preparation of Technetium Tc99m Sestamibi for Injection.

4.4 Adverse Reactions

- Pain, vomiting, and severe hypersensitivity characterized by dyspnea, hypotension, angioedema, urticaria, and symptoms consistent with seizure occurring shortly after administration of the drug. The radiation absorbed dose is a measure of the radiation energy absorbed by an organ or tissue, expressed as energy absorbed per unit mass. It is calculated using the equation:

\[ \text{Estimated Radiation Absorbed Dose} = \frac{\text{Activity} \times \text{Distance}}{\text{Weight} \times \text{Height}} \]

5. WARNINGS AND PRECAUTIONS

5.1 Warnings

In studies of patients referred for cancer therapy to be treated with Technetium Tc99m Sestamibi, the following contraindications have been reported:

- Allergic reactions to iodine or any other contrast media.
- Severe cardiovascular disease.
- Known or suspected hypersensitivity to Technetium Tc99m Sestamibi.

6. CONTRAINDICATIONS

6.1 Pregnancy Category C

Technetium Tc99m Sestamibi should be given to a pregnant woman only if clearly needed.

6.1.1 Radiation Exposures

Radiographic images may be obtained with the use of Technetium Tc99m Sestamibi. Images of organs and tissues are receiving the same radiation exposure as the patient. In some patients the allergic symptoms developed on the second day after administration of Technetium Tc99m Sestamibi. Radiographic images should be avoided after administration of Technetium Tc99m Sestamibi.

6.1.2 Magnesium Oxide

The use of magnesium oxide may be limited in certain patient populations. Patients with a history of magnesium oxide intolerance or who have experienced adverse reactions to magnesium oxide should be considered for alternative imaging agents.

7. PATIENT COUNSELING INFORMATION

Patients should be counseled that Technetium Tc99m Sestamibi is a myocardial perfusion agent that is indicated for detecting coronary artery disease by imaging myocardial ischemia (non-reversible) and myocardial viability (reversible). In patients with known or suspected cardiac disease, care should be taken to ensure that the patient's medical history and findings are consistent with the administration of the agent.

8. CLINICAL STUDIES

8.1 Pregnancy Category C

9. ADVERSE REACTIONS

Adverse reactions are rare and generally consist of mild to moderate symptoms. However, severe reactions may occur, including anaphylactic reactions. These reactions may be life-threatening and require immediate medical attention.

10. OVERDOSAGE

In the event of an overdose, supportive and symptomatic care should be provided. The patient should be monitored closely for signs of toxicity, and appropriate medical intervention should be initiated as necessary.

11. CLINICAL PHARMACOLOGY

11.1 General Precautions

The estimated radiation absorbed dose is calculated using the equation above. The values presented in Table 1.1 are based on the assumption that the patient is at the average distance of 1 meter from the radiation source.

12. CLINICAL PHARMACOLOGY

12.1 General

The estimated radiation absorbed dose is calculated using the equation above. The values presented in Table 1.1 are based on the assumption that the patient is at the average distance of 1 meter from the radiation source.

13. MENISCAL RADIOLABELING

13.1 General

The estimated radiation absorbed dose is calculated using the equation above. The values presented in Table 1.1 are based on the assumption that the patient is at the average distance of 1 meter from the radiation source.

14. WARNINGS AND PRECAUTIONS

14.1 Radiation Exposures

Radiographic images may be obtained with the use of Technetium Tc99m Sestamibi. Images of organs and tissues are receiving the same radiation exposure as the patient. In some patients the allergic symptoms developed on the second day after administration of Technetium Tc99m Sestamibi. Radiographic images should be avoided after administration of Technetium Tc99m Sestamibi.

14.1.1 Magnesium Oxide

The use of magnesium oxide may be limited in certain patient populations. Patients with a history of magnesium oxide intolerance or who have experienced adverse reactions to magnesium oxide should be considered for alternative imaging agents.

15. PATIENT COUNSELING INFORMATION

Patients should be counseled that Technetium Tc99m Sestamibi is a myocardial perfusion agent that is indicated for detecting coronary artery disease by imaging myocardial ischemia (non-reversible) and myocardial viability (reversible). In patients with known or suspected cardiac disease, care should be taken to ensure that the patient's medical history and findings are consistent with the administration of the agent.
The trial is designed by administration of intravenous diagnostic for use so no risk of exposure to ionizing radiation. The injection of the reconstituted product contains 5.5 - 6.0 mCi (200 - 220 MBq). No bacteriologic procedures could be demonstrated in the study.

A year per retrospective case history study of pediatric cardiac patients who completed CARDIOLITE®, myocardial perfusion imaging and who had coronary angiography, with the diagnosis of myocardial ischemia, was done in all cases. Clinically meaningful measurements of specificity, sensitivity or other diagnostic performance parameters could be demonstrated in this study.

In a separate retrospective subset analysis of 250 patients with dense breast parenchyma in whom mammography or breast ultrasound was inconclusive, the high prevalence of adverse events and review of vital signs and laboratory parameters could be demonstrated in this study.

The radiation dose to the ovaries (1.5 rads/30 mCi at rest, 1.2 rads/30 mCi at exercise) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability. (See Section 2.)

The radiation dose in both infants and children younger than 18 years of age were similar to those in adults. Adverse events were evaluated in 803 pediatric patients from the three clinical studies described above. The frequency and type of the adverse events were similar to those observed in the studies of CARDIOLITE® in adults. Two of the 803 had a serious adverse event which was considered to be a CARDIOLITE® monitor-related non-malignant, and one patient had an adverse event following administration.

In a separate retrospective subset analysis of 250 patients with dense breast parenchyma in whom mammography or breast ultrasound was inconclusive, the high prevalence of adverse events and review of vital signs and laboratory parameters could be demonstrated in this study.

In the present study, Tc-99m MIBI was evaluated for potential in a biopsy of the left ventricular myocardium was observed to be a potent agent in the study. Cu(MIBI) did not show genotoxic effects in the in vivo mouse micronucleus test. Cu(MIBI) did not show genotoxic effects in the in vitro mouse micronucleus test. Cu(MIBI) did not show genotoxic effects in the in vitro human lymphocyte assay. Cu(MIBI) did not show genotoxic effects in the in vitro human lymphocyte assay.

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