

XXX Nuclear Cardiology Lab

Pregnancy and Breast Feeding Policy

Purpose:

To identify possible pregnant and breast feeding patients and address issues relating to the administration of radioactive material.

Policy:

The pregnant or potentially pregnant patient is not to have nuclear medicine procedures performed unless it is absolutely essential for a diagnosis or treatment. If the patient is pregnant, the patient will be referred to the hospital for the procedure and counseling. Scans on pregnant patients will not be performed at the Medical Imaging Institute.

Patients who are breast feeding a child are not to have nuclear medicine procedures performed unless the benefit of the diagnostic information or the therapeutic measure fully outweighs the possible risk of the radiation received from the procedure. If the nuclear medicine procedure is performed on a patient who is nursing a child, the patient must be counseled before administration of the radiopharmaceutical and must agree to discontinue breast feeding during the time specified.

Procedure:

1. Signs are posted within the camera, stress and DXA room and waiting areas that state: "If you are pregnant or breast feeding, please notify the technologist."
2. The technologist must ask all female patients age 12 or old if they are or may be pregnant and if they are breast feeding an infant/child.
3. Pregnancy:
If the patient is neither post-menopausal nor surgically sterile or their last menstrual period began more than 10 days ago, the technologist must consult the Authorized User before administering the radiopharmaceutical dose. The procedure should be postponed until pregnancy status can be verified by testing performed or requested by the referring physician.
4. If the patient is breast feeding:
 - a. Notify the Authorized User, Radiation Safety Officer, Big Kahuna or Health Physicist before the radiopharmaceutical is administered.
 - b. The referring physician may be contacted and questioned whether scanning procedures are still indicated.
 - c. If it is decided by the above that the nuclear medicine procedure is necessary, the patient must agree to discontinue breast feeding for the period of time prescribed by the Authorized User, Radiation Safety Officer, or Health Physicist. (See Table: Recommended Breast Feeding Interruption Times)
 - d. Written instructions regarding the length of time to discontinue nursing must be signed by the patient before the dose is administered and documented in the patients chart.

- e. The patient will be given a copy of the completed “Instructions for Breast Feeding Patients” form.

Recommended Breast Feeding Interruption Times

Radiopharmaceutical	Procedure	Dose	Recommended Breast Feeding Interruption Times
^{99m} Tc Labeled RBCs	MUGA	30 mCi	9 hours
	Hemangioma	20 mCi	6 hours ¹
^{99m} Tc Tetrofosmin/MIBI	Myocardial Perfusion Studies	40 mCi	3 hours ²
^{99m} Tc Pertechnetate	Cardiac Shunt	20 mCi	24 hours ¹
²⁰¹ Tl	Myocardial Perfusion Studies	3 mCi	2 weeks ¹
All others consult radiopharmacy and manufacturers dose sheet			

¹US Nuclear Regulatory Commission, Regulatory Guide 8.39, “Release of Patient’s Administered Radioactive Materials,” April 1997

²US Nuclear Regulatory Commission NUREG-1492, “Regulatory Analysis of Criteria for the Release of Patients Administered Radioactive Materials,” February 1997

DETERMINATION OF FETAL DOSE

It is the policy of XXX Laboratory to not perform a diagnostic procedure on any patient that is pregnant. If all guidelines in this manual are followed, this should not occur.

In the event that an exposure does occur, XXX Laboratory will provide the most accurate data available to the parent concerning fetal dosing. The difficulty in determining the fetal dose is widely known throughout the Nuclear community.

The following is a table that was published in a Health Physics journal and is believed to be the most accurate at this time. *Reference: Russell et al. Health Physics. 73(5); Radiation Absorbed Dose to the Embryo/Fetus from Radiopharmaceuticals. Pgs 756-769, November 1997, www.doseinfo-radar.com, “It is very important to remember that these dose estimates depend directly on the residence times assumed for each radiopharmaceutical. Any changes in the biokinetic models assumed will cause a change in the dose estimates calculated.”*

The table has been adjusted for the doses used at XXX Laboratory. For example, each exposure was divided to the mCi and then multiplied by the radiopharmaceutical dose used at XXX Laboratory. Rest Tc-Mibi per table was 1.7 rads for a 30 mCi dose at the early stage. To adjust the dose, we used the following formula:

$$(1.7 / 30) \text{ rads/mCi} \times 12 \text{ mCi dose for XXX Laboratory.}$$

Radio Pharm	Activity	Early (rad)	3 mo (rad)	6 mo (rad)	9 mo (rad)
Tc Mibi	12	0.68	0.52	0.368	0.236
Tc Mibi	38	0.52	0.4	0.304	0.192
TI201	4	1.413	0.853	0.693	0.4

If the mother has any known conditions that would cause an increased retention of the radiotracer, this should be taken into consideration of determining the dose of exposure (i.e. renal failure, dehydration, etc.).

SAMPLE

Written: _____	Date: _____
Revised: _____	Date: _____
Reviewed: _____	Date: _____
_____	Date: _____

XXXXX Nuclear Cardiology Lab

Pregnancy and/or Breast-Feeding Verification

Must be completed by all female patients.

Patient Name: _____

Birth Date: _____

1. Are you (check appropriate box):

Post-menopausal

Pre-menopausal, surgically sterile (e.g. hysterectomy, tubal ligation, etc.)

Pre-menopausal, not surgically sterile.

If so, are you or do you think you may be pregnant?

Yes

No

Date of your last menstrual period: _____

2. Have you ever had a mastectomy? Yes No

Right

Left

Implant

Prosthesis

3. Are you currently breast-feeding: Yes No

Patient Signature: _____

Date: _____

XXXX Nuclear Cardiology Lab

Instructions for Breast-Feeding Patients

Patient Name: _____

Date: _____

Your physician has referred you the XXXXX for the following procedure:

During this procedure, you will be given a small amount of radioactive material: _____

You have also indicated that you are currently breast-feeding an infant/child. Please follow the instruction indicated below relating to breast-feeding after the administration of the radioactive material.

Interrupt breast-feeding for a period of _____.

Small quantities of the radioactive material you will be given will be present in your breast milk following the examination. Although failure to interrupt your breast-feeding will not produce any noticeable adverse effects in you infant/child, it is prudent to avoid the unnecessary radiation exposure to our infant/child during the interruption time recommended above. You may continue breast-feeding your infant/child after the interruption recommended above. At that time; your child will not receive any significant radiation exposure as a result of continuing breast-feeding.

No interruption of breast-feeding is necessary. Although you are being administered a radioactive material, the radiation exposure to your infant/child will not be significant, even if breast-feeding is continued.

Patient Signature: _____

Date: _____

Witness Signature: _____

Date: _____