ATTACHMENT

University of Cincinnati
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September 26, 1990

Mr. Roy J. Caniano
Nuclear Regulatory Commision
Region 3
799 Roosevelt Road
Glenn Ellyn, Illinois 60137

Dear Mr. Caniano:

I spoke on September 25 to Dr. Jackowski and his chief technologist Jim Brant at the West Shore Hospital, phone 616-723-3501, Manistee, Michigan. I was told that on September 22 an x-ray technologist, who had received three weeks of on-the-job training in Nuclear Medicine from Mr. Brant last January and February, 1990, and who had done perhaps three cases total since that time, had been involved in a misadministration.

The actions of the x-ray technologist are not well documented although she recorded in the dose book that fact that 1 ml of Tc-99m-disofenin was given intravenously, containing 80 mCi of activity. The chief technologist had been notified that she was doing the study and decided to come to the hospital even though the x-ray technologist indicated that she was having no problems. Shortly after she administered the dose, he found that there were approximately 2 ml remaining in the disofenin vial. The dose calibrator measurement of this was 275 mCi. Thus, he estimates 135 mCi given to the patient, although, the x-ray technologist noted 80 mCi given in the dose book.

The chief technologist believes that the x-ray technologist eluted the generator improperly, and she definitely did not look for molybdenum contamination. There is a lab protocol book and a dose chart of the appropriate range of radiopharmaceutical, which the technologist also ignored.

The patient is a deeply jaundiced woman dying of pancreatic carcinoma. Based on the dosimetry for disofenin provided by New England Nuclear, North Billerica, Massachusetts and modified by R. K. Wu et al in the Journal of

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Nuclear Medicine 1984;25:905-912, in an article entitled "Tc-99m HIDA Dosimetry In Patients With Various Hepatic Disorders" the dosimetry for this patient should be as follows based on 135 mCi administered dose:

Organ	Dose (rads)
Upper large intestine	20 rads
Lower large intesting	13 rads
Kidneys	8.5 rads
Bladder	28 rads
Ovaries	5 rads
Liver	5.3 rads
Gallbladder wall	2.7 rads
Red marrow	4 rads

As can be seen from this dosimetry, no biological effects should be expected from the misadministration. The patient apparently did not have nurses in close proximity for long periods of time since she is on supportive care only at this point. No actions were taken to remove radioactivity from the patient's bowel on the day of misadministration.

It is clear that an inadequately trained technologist, who had had little experience since her three weeks of on-the-job education eight months ago, did not understand basic concepts of Nuclear Medicine, including the use of the generator, dose calibrator or the appropriate dose for the procedure. Dr. Jacowski tells me that she will no longer do Nuclear Medicine. I would urge that all technologists who handle radioactive material be required to meet minimum standards as recommended by the Society of Nuclear Medicine. The delegation of on-call authority to poorly trained technologists cannot be condoned.

Sincerely,

Edward B. Silberstein, M.D.
Professor of Radiology and Medicine

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