Nuclear Meds Set Off Sensors Up to 3 Months

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CHICAGO — Patients given radiopharmaceuticals for diagnostic or therapeutic nuclear medicine procedures can trigger radiation detectors up to 3 months after the procedure, Lionel S. Zuckier, M.D., said at the annual meeting of the Radiological Society of North America.

These patients should be given appropriate documentation, said Dr. Zuckier, director of nuclear medicine and positron emission tomography at the University Hospital, Newark, N.J.

"Many patients have been picked up and detained … and now we expect it to be a more common occurrence with the increasing number of extremely sensitive portable radiation detectors being distributed to local, state, and federal emergency responders," he said.

Physicians should counsel patients about informed consent and advise them to carry letters of clarification to make any interactions with law enforcement personnel easier, he said.

Carrying such documentation is consistent with guidelines issued by both the Society of Nuclear Medicine and the U.S. Nuclear Regulatory Commission.

"This letter should include a contact name and number so that the information can be verified at any time. Our department has a 24-hour number that can be called," said Dr. Zuckier, also a professor of radiology at the University of Medicine and Dentistry of New Jersey, Newark.

According to Dr. Zuckier, there were 18 million nuclear medicine procedures performed in 2002 in the United States.

With 10,000 portable Homeland Security radiation detectors in use, there is great potential for patients to be inconvenienced at airports or other security points.

His study, which he presented at the meeting, examined the strength of five radiation detection devices currently in use by the U.S. Homeland Security Department.

Therapeutic radiopharmaceuticals, such as iodine, used in the treatment of thyroid disorders, can be detected in the body and therefore have the potential to trigger radiation detectors up to 3 months after the procedure.

Patients who undergo cardiac exams with thallium can trigger alarms for up to 30 days, and patients who undergo bone and thyroid scans have detectable radiation levels for up to 3 days.

Patients undergoing PET scans with ^{18}fluorodeoxyglucose are at risk for triggering radiation detectors for less than 24 hours post procedure, he said.

"These detectors are extremely sensitive and can pick up dose rates as small as 1 or 2 microrads per hour. Our study suggests guidelines as to how long [a patient's] documentation should be retained," Dr. Zuckier said. ■