On FDG PET Metabolic Imaging to Assess Myocardial Viability

TO THE NEWSLINE EDITOR: We read with interest Ruth Tesar’s commentary regarding the Health Care Financing Administration (HCFA) Town Hall Meeting on January 20–21, 1999 (J Nucl Med. 1999;40(3):10N). We were surprised to read that “discussion on other indications and aspects of PET were also welcomed.” Before this meeting, we contacted Dr. Burken and indicated our desire to present data regarding the usefulness of FDG cardiac PET imaging for the identification of myocardial viability in patients with coronary artery disease and impaired left ventricular function. We were informed that the organizers of this meeting were “actively discouraging” the presentation of data other than that related to the use of FDG for oncologic imaging purposes. We therefore had the impression that information regarding the usefulness of FDG cardiac PET imaging for clinical cardiology would not be well received.

In the United States, cardiovascular disease remains the leading cause of death and ranked first among all disease categories in numbers of discharges from shortstay hospitals in 1995. Nearly 800,000 of these hospital discharges were for the diagnosis of congestive heart failure. There are approximately 400,000 new cases of congestive heart failure in the United States each year, and the incidence of congestive heart failure approaches 10 per 1000 after age 65. Clearly there is a large patient population in this country who would benefit from FDG PET metabolic imaging for the assessment of myocardial viability.

At our institution, we have experienced a steadily increasing demand for cardiac FDG PET imaging services. Over the last 9 years, the number of cardiac FDG PET imaging studies increased 758%, from 73 in 1989 (the year we first started myocardial metabolic imaging) to 626 in 1998. In contrast, the number of cardiac 82Rb perfusion imaging studies increased 578%, from 164 in 1989 to 1112 in 1998. Although the usefulness of FDG PET metabolic imaging for identifying reversible dysfunctional myocardium has been known for more than a decade, HCFA still does not reimburse for this life-saving noninvasive imaging procedure. We believe that it is vital for the PET imaging community to support the use of FDG metabolic imaging for the assessment of myocardial viability, just as it has recently shown its solidarity for the use of this imaging procedure in oncology patients.

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Health effects from the Chernobyl accident, where the highest radiation doses were about 10 to 100 times higher than the highest doses at Hanford, are much easier to assess. Within 4–5 years after the incident, children who had the highest exposures developed thyroid cancer at 20–30 times the expected rate, according to Royal. “Thyroid cancer in children is almost unheard of, yet in areas near Chernobyl, it’s an epidemic,” he said. Brill adds that the children studied at Chernobyl were under 5 years of age or in utero at the time of the incident, which puts them in the group that is most susceptible to the effects of radiation. Many of the participants in the Hanford study were teenagers at the time of the iodine release, making them somewhat less susceptible than children or infants to radiation health risks.

The overall value of the Hanford study remains debatable, according to several of the radiation health effects researchers who spoke to Newsline. Many feel that politics, and not science, will continue to be the force that drives these studies. “Around every nuclear waste site in America, public pressure is put on the government to do epidemiological studies to see whether a correlation exists between radiation exposure and health effects,” said Brill. “The Hanford study cost tens of millions of dollars and was conducted in a scientifically sound manner, given all the uncertainties of reconstructing radiation doses from exposures that occurred 50 years. Yet, it basically tells us nothing new from a scientific standpoint, and I think it’s highly questionable whether a study could have been designed that would have shed any light on the Hanford issue.”

—Deborah Kotz

Newsline 25N