^{223}Ra Primary Standard Revision

On January 12 the U.S. Nuclear Regulatory Commission (NRC) released an information notice relative to a revision to the National Institute of Standards and Technology (NIST) standard for ^{223}Ra and the resulting impact on dose calibration for medical use of ^{223}Ra-dichloride (Xofigo; Bayer HealthCare, Berlin, Germany). After approval by the U.S. Food and Drug Administration in May 2013, Bayer began commercial distribution of Xofigo in the United States and provided customers with a ^{223}Ra standard syringe and an appropriate dial setting for dose calibrators based on NIST data published in 2010. According to the NRC notice, NIST was made aware in 2013 of studies performed by the National Physical Laboratory (NPL) in the United Kingdom identifying an ~10% difference between activities obtained using several primary methods and those obtained with the calibration factors published by NIST. As a result, NIST performed additional testing and confirmed that activity readings were lower than expected. On March 11, 2015, NIST published information on a revised primary standard for ^{223}Ra with a numerical increase of 10.5% for the new primary standard. This change was only to the numerical value of the quantity of ^{223}Ra; the actual amount of ^{223}Ra in the primary standard did not change.

In a letter dated March 18, 2015, Bayer notified customers of the NIST standardization change and future labeling and calibration impacts, noting that the company would provide customers with a new NIST-traceable ^{223}Ra standard syringe and dose calibration dial setting based on the NIST revised primary standard. Bayer also stated that numerical values listed on the package label would be increased by ~10%. Manufacturing and product documentation would be updated and labeled as 1,100 kBq/mL (previously 1,000 kBq/mL) and 6.6 MBq/vial (previously 6.0 MBq/vial).

NRC licensees are typically authorized for the possession and medical use of ^{223}Ra-chloride in the millicurie range. Xofigo doses are administered in the microcurie range; therefore, NRC indicated that it does not anticipate the need to update licenses as a result of the new primary NIST standard. Bayer emphasized that the revised NIST standard for ^{223}Ra does not change the actual amount of ^{223}Ra-dichloride being administered to patients, nor will it affect the safety and efficacy of the agent.

The entire NRC notice is available at: www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2016/.

U.S. Nuclear Regulatory Commission

U.S. MPI and Radiation Dose

Findings on radiation dose in myocardial perfusion imaging (MPI) in the United States, compiled by an international team assembled by the International Atomic Energy Agency (IAEA) and published online on December 28 ahead of print in *JAMA Internal Medicine*, were the focus of recent media attention and public concern. As part of the IAEA Nuclear Cardiology Protocols Study, data were collected from 308 nuclear cardiology sites in 65 countries, including 50 U.S. sites in 22 states. Each site in the study contributed data on consecutive series of patients undergoing MPI during a 1-wk period in 2013. The final study included 7,911 patients, with 1,902 from the United States. Collected data included patient demographics, estimated effective radiation dose per patient, and 8 best practices defined as affecting radiation dose. For this article, U.S. and non-U.S. practices and doses were compared. U.S. patients undergoing MPI were, on average, older than non-U.S. patients, with a higher proportion of women. U.S. patients were 7.6 times more likely to undergo SPECT MPI using a 1-d protocol and 6.7 times more likely to undergo PET. Although U.S. laboratories performed well in international comparisons by avoiding the use of thallium agents, best practice adherence in the U.S. was diminished by comparatively higher radiation doses. The median radiation dose in U.S. laboratories was 3.5–24.5 mSv, with only 7 of 50 (14.0%) sites achieving the target median dose of ≤9 mSv, compared with 84 of 258 (32.6%) non-U.S. sites. The result was a "20% higher radiation dose to the typical patient undergoing MPI in a U.S. laboratory compared with a patient in a non-U.S. laboratory." The authors cited comparative performance statistics on U.S./non-U.S. practices, such as weight-based dosing (16.0%/31.0%), "judicious" ^{99m}Tc use (56.0%/91.1%), and implementation of stress-only protocols in some patients (18.0%/32.6%), as contributing to the dose disparities. They also cited the significantly more frequent U.S. use of MPI (2,500 studies/100,000 population) when compared with statistics from other countries (Canada, Australia, Japan, and the United Kingdom at 1,200, 364, 315, and 120 MPI studies, respectively, per 100,000 population).

JAMA Internal Medicine

SNMMI-TS Leadership Academy

The Technologist Society of SNMMI (SNMMI-TS) announced on January 12 the names of nuclear medicine technologists and students from across the United States chosen to participate in the society's 2016 Leadership Academy. The academy is a 2-day course, fully funded by the SNMMI-TS, that was held January 27 and 28 during the SNMMI Mid-Winter Meeting in Orlando, FL. Individuals chosen for this opportunity to increase leadership skills and network with peers included: Loukisha L. Collins, CNMT; Jason J. Colloton, CNMT, RT(N); Kimberlie F. Franks, CNMT, RT(R); Krystle W. Glasgow, MIS, NMAA, CNMT; Kimberly Kerry Jackson, CNMT; Sara Johnson, MED, CNMT; Amber C. Lindars, CNMT, CPhT; Samantha Palensky, CNMT; Joshua J. Reynolds, MBA, CNMT, RT(N)(CT)(MR); Jessica M. Rodgers, CNMT, RT(N); Melinda Walker, CNMT; Morgan R. Stefan; Sarah Pigmon; Yasmeen Mansour; Richard A. Mandis; Juan Madrid; and Rhevon Lewis.

SNMMI-TS