

^{177}Lu -PRLT, the combination of the 2 agents resulted in an excellent response (Fig. 6), with no severe xerostomia or renal/hepatic toxicity and no worsening of preexisting anemia/pancytopenia. These preliminary results highlight the opportunity and potential for combining these and other agents to enhance and refine treatment.

Lutetium is not the sole focus of exploratory methods in combining treatments. Bailey et al. from Royal North Shore Hospital (Sydney and St. Leonards, Australia) and Clarity Pharmaceuticals (Eveleigh and Sydney, Australia) reported on “A novel theranostic trial design using $^{64}\text{Cu}/^{67}\text{Cu}$ with fully 3D pretreatment dosimetry” [204]. Individuals with somatostatin receptor-positive meningiomas received ^{64}Cu -MeCOSar-octreotate followed by 5–6 GBq of ^{67}Cu -MeCOSar-octreotate. No significant adverse events were observed, and estimated doses projected from ^{64}Cu PET to ^{67}Cu SPECT were predictive for liver and red marrow (blood-derived for ^{67}Cu). The researchers showed excellent comparability of biodistribution between the SARTATE-conjugated agents (Fig. 7). They concluded that ^{67}Cu -octreotate appears to be a safe alternative theranostic agent for individuals with somatostatin-expressing tumors, adding that “the long half-life of the

companion diagnostic imaging radionuclide (^{64}Cu) permits pretherapeutic estimates of dosimetry in a number of organs. . . .” They noted the potential utility in pediatric patients, for whom no reliable dose scaling for age and size is available.

Summary

This has been a terrific meeting, with many exciting presentations and posters. Nuclear medicine is becoming much more prominent and gaining more recognition for diagnostic and therapeutic progress in the global oncology community. We have a growing number of multicenter and multinational trials providing the type of evidence that will support and accelerate future research and clinical acceptance. This progress will rely on our continued engagement with oncologists and surgeons, as well as patient advocacy groups. I encourage you all to continue with your research and to particularly think about health care outcomes, including economic analyses. The pivotal role of nuclear medicine in exploring cancer biology and developing more effective therapies is clear, and we should all be encouraged as we see the associated innovations applied to the benefit of patients worldwide.

NEWS BRIEFS

NCRP Reports Medical Radiation Doses Decreasing

The National Council on Radiation Protection and Measurements (NCRP) issued on November 18 a new report showing a 15%–20% reduction in diagnostic and interventional medical radiation doses to the U.S. population from 2006 to 2016. Except for CT scans, most medical imaging doses are stable or decreasing. This finding is a contrast to the dramatic rise documented in a 2009 NCRP report that showed a 6-fold increase from the early 1980s to 2006. NCRP Report No. 184, entitled “Medical Radiation Exposure of Patients in the United States,” is a 10-year update to the 2009 NCRP report.

“Our report demonstrates that medical radiation doses in the United States are on the decline, which is a positive shift from a decade ago when doses were increasing significantly,” said Fred Mettler, MD, MPH, chair of the NCRP report and professor emeritus and clinical professor in the Department of Radiology and Nuclear Medicine at the University of New Mexico School of Medicine (Albuquerque). “In the report, we pay particular attention to medical procedures that contribute the largest share of dose and provide information on average doses that patients may experience from a specific examination.” NCRP Report No. 184 indicates that CT scans made up 63% of collective dose

from medical imaging procedures in 2016, compared to 50% in 2006. Although the number of CT scans increased by 20% over that decade, the overall dose per person for CT procedures was essentially unchanged. For a number of other modalities, the report shows the average radiation dose per person has decreased. The report discusses technology advances that have yielded hardware improvements and protocols leading to higher quality images at lower doses. Efforts by imaging and other organizations have also increased awareness and understanding of medical radiation doses, dose optimization, and reduction in dose.

National Council on Radiation Protection and Measurements