Joint NCI/SNMMI Workshop on Targeted Radionuclide Therapy

On October 24 and 25, the National Cancer Institute (NCI) and SNMMI hosted for the second time a joint Workshop on Targeted Radionuclide Therapy on the National Institutes of Health (NIH) campus in Bethesda, MD. As with the first workshop, held in March 2013, the purpose of this collaborative meeting was to stimulate discussion on the current and potential applications of targeted radionuclide therapy in hematologic and solid cancers. The October workshop, led by Frederic Fahey, DSc (Harvard Medical School; Boston, MA), and Katherine Zukotynski, MD (University of Toronto; Canada), focused on lessons learned from prior experiences, the most promising approaches moving forward, and challenges inherent in bringing these innovative therapies to the clinic. The schedule included didactic lectures, panel discussions, and break-out sessions followed by a summary of progress and a discussion of future directions. The workshop brought together individuals from multiple scientific disciplines and included representatives from NCI and other government agencies, industry, and the academic community.

After opening remarks by Fahey and Zukotynski, the first session on October 24 focused on “Lessons Learned.” The session was chaired by Richard Wahl, MD (Johns Hopkins University; Baltimore, MD), and Ruby F. Meredith, MD, PhD (University of Alabama at Birmingham). Presenters included Cathy S. Cutler, PhD (University of Missouri; Columbia), on the “Radiochemistry Perspective”; Lee Allen, MD, PhD, and Rick Satitpunwaycha, PharmD (Spectrum Pharmaceuticals; Irvine, CA), on “Industry Perspective”; Janis O’Malley, MD (University of Alabama at Birmingham), on “Nuclear Medicine: Lymphoma”; Richard Baum, MD (Zentralklinik Bad Berka; Germany), on “Peptide Receptor Radionuclide Therapy of Neuroendocrine Tumors”; and Fatima Karzai, MD (NCI; Bethesda, MD), on “Oncology: Prostate Cancer.”

The second session of the morning, chaired by Ekaterina Dadachova, PhD (Albert Einstein College of Medicine; Bronx, NY), and Michael R. Zalutsky, PhD (Duke University Medical Center; Durham, NC), focused on “Opportunities.” Presenters included Janice M. Reichert, PhD (Reichert Biotechnology Consulting LLC; Boston, MA), on “Targets and Targeting Agents”; Martin Brechbiel, PhD (NCI; Bethesda, MD), on “Radiochemistry”; and Barry Wessels, PhD (University Hospitals of Cleveland; OH), on “Treatment Planning.” Steven Larson, MD (Memorial Sloan–Kettering Cancer Center; New York, NY), delivered a lunchtime keynote address on the “Nuclear Medicine Physician’s Perspective.”

Afternoon sessions, including a roundtable and topic-specific breakout discussions, identified and summarized “Hurdles and Incentives.” The first session was chaired by Aimal Khan Ahmed, MBBS (Bayer HealthCare US; Washington, DC), and Zukotynski. Presenters included Paula M. Jacobs, PhD (NCI; Bethesda, MD), on “Regulatory Affairs”; David M. Goldenberg, MD, ScD (Immunomedics Inc.; Morris Plains, NJ), on “Industry Perspective”; and Sally Schwarz, MS, RPh, BCNP (Washington University Medical School; St. Louis, MO), on “Radiopharmaceutical Issues.” A roundtable discussion, chaired by Ulli Köster, PhD (Institut Laue-Langevin; Grenoble, France), and John Valliant, PhD (Centre for Probe Development and Commercialization; Hamilton, Canada), included panelists Ahmed; Jehanne Gillo, PhD (U.S. Department of Energy; Germantown, MD); Cees Van Echteld, PhD (ABX-CRO; Dresden, Germany); Deepa Narayanan, MS (NCI Small Business Innovation Research; Rockville, MD); and Greg Evans, PhD (also from NCI Small Business Innovation Research).

Breakout sessions followed, focusing on breast cancer, lymphoma/leukemia, lung cancer/neuroendocrine cancer, and prostate cancer.

Day 2 of the workshop included summary reports from the breakout sessions in a session chaired by Suresh Srivastava, PhD (Brookhaven National Laboratory; Upton, NY), and Chaitanya Divgi, MD (Columbia University; New York, NY). These summary reports were delivered by Stanley Lipkowitz, MD, PhD (NCI; Bethesda, MD), on breast cancer; Jeffrey Norenborg, PharmD, PhD (University of New Mexico Health Sciences Center; Albuquerque), on lymphoma/leukemia; Shukin Malik, MD (NCI; Bethesda, MD), on lung cancer/neuroendocrine cancer; and Eric M. Rohren, MD, PhD (MD Anderson Cancer Center; Houston, TX), on prostate cancer.

Hossein Javdak, MD, PhD, MPH, MBA (University of Southern California; Los Angeles), reprised his role from the 2013 workshop and presented an overall review of highlights and potential future directions. Among the areas highlighted were needs for: (1) a balanced and unbiased approach to objectively assess optimal integration of targeted radionuclide therapy in the therapeutic algorithms of cancer care; (2) research into the utility of targeted radionuclide therapy as a solo therapy and in combination with medical/radiation therapies; and (3) practical clinical implementation of targeted radionuclide therapy with buy-in from the medical and larger communities. A full report on the workshop proceedings will be published in 2015.