ASTRO recently convened the top meeting in the radiation oncology field, with more than 11,000 attendees from around the world. Seven research groups in OHSU’s Department of Radiation Medicine presented findings at the meeting in Boston:

**Optimizing radiation therapy for patients with liver cancer**
Highly conformal radiation therapy appears to be a safe and effective treatment option for hepatocellular carcinoma patients with advanced liver dysfunction, according to data presented by Nima Nabavizadeh, M.D., an assistant professor, Department of Radiation Medicine. Stereotactic body radiation therapy was associated with superior local control compared with accelerated hypofractionated radiotherapy. “Further prospective studies are warranted in this poor performing population,” the team concluded.

**Synergistic effects of a vitamin E analog**
The vitamin E analog alpha-tocopheryloxyacetic acid synergized with radiation therapy to improve tumor control more than each individual therapy in a study using a mouse model of breast cancer presented by Joshua Walker, M.D., Ph.D., a resident in the Department of Radiation Medicine. The combination resulted in complete and durable tumor regression in 29 percent of animals treated, an effect not observed with either therapy alone. The researchers proposed a potential mechanism based on the stimulation of type I interferons by alpha-tocopheryloxyacetic acid, which when fed to tumor-bearing mice stimulates proliferation of both CD4 and CD8 T cells and significantly reduced metastatic burden.
Inflammation at play in cognitive symptoms
A proinflammatory environment in the brain may mediate the cognitive changes, such as difficulty concentrating, memory impairment and increased anxiety, that develop after cancer treatment. Research presented by Gwendolyn McGinnis, a medical student and researcher in the Departments of Behavioral Neuroscience and Radiation Medicine, is pursuing this hypothesis. The project uses anti-CTLA4 checkpoint inhibitor immunotherapy preceding precision CT-guided peripheral RT to model clinical treatment in mice.

Predicting survival in patients with spine metastasis
A stratification schema under development at OHSU may help physicians identify cancer patients with spine metastasis who are most likely to benefit from complex treatments including combined modality therapy and stereotactic body radiation therapy. Charlotte Dai Kubicky, M.D., Ph.D., an associate professor in the Department of Radiation Medicine, presented data from 284 patients who have undergone surgery or radiation for spine metastasis from 2002 to 2013.

Eye-sparing treatment for uveal melanoma
Uveal melanoma is the most common primary intraocular malignancy in adults. Eye sparing treatment with brachytherapy yields excellent local control but often results in significant vision loss. Radiation medicine resident Christina Binder, M.D., Ph.D., and colleagues examined how radiation doses to eye structures varied with the size of the brachytherapy plaque used to treat the cancer.

Better shared decision-making
While cancer clinicians are often confident that they practice shared decision making, they may be neglecting a key part: carefully eliciting patient preferences and values. That’s one of the findings of Sara Golden, M.P.H., health services research manager at the VA Portland Health Care System, and colleagues who interviewed radiation oncologists, cancer surgeons and other clinicians from five Portland-area medical centers.

Radiation oncology curriculum development
Medical students felt more comfortable with their specialty decision and better prepared to begin radiation oncology residency after participating in a standardized radiation oncology curriculum. Daniel Golden, M.D., a recent visiting scholar in the Department of Radiation Medicine, reported the results from a medical student radiation oncology clerkship implemented at select academic medical center from 2013-2015.
Citations:


Alpha-Tocopheryloxyacetic Acid (aTEA) Immunomodulation Synergizes with Radiation Therapy to Treat Primary and Metastatic Murine Mammary Carcinoma by Joshua Walker, Diego Barragan, Melissa Kasiewicz, and William Redmond

Effects of Combined Immune and Radiation Cancer Therapy on Inflammatory Environment in the Brain of a Mouse Model by G.J. McGinnis, D. Friedman, K.H. Young, C.R. Thomas Jr., M. Gough, J. Raber

Predicting Survival of Patients With Spine Metastasis Using the Recursive Partitioning Analysis (RPA) by A. Walker, S. Mongoue-Tchkote, C. Dai Kubicky

Plaque Size and Dose in I-125 Eye Plaque Brachytherapy by C. Binder, R.J. Crilly, S. Brown, A. Skalet, and A.Y. Hung

Information Matters: A Prospective, Qualitative Study of Clinicians Caring for Patients With Early-Stage Non-Small Cell Lung Cancer by Sara Golden, Christopher Slatore and Charles Thomas Jr.