Mid-treatment imaging can be used to de-escalate therapy for oropharynx cancer, leading to fewer side effects

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A new phase II trial finds that PET scans obtained before and midway through treatment for p16-positive oropharynx cancer (OPC) can help

determine whether a patient can receive a lower dose of radiation therapy in the second half of their treatment course without compromising cancer control. Patients in the trial who received de-escalated therapy experienced fewer short-term side effects than those who received standard therapy. Findings from the study will be presented today at the 2022 Multidisciplinary Head and Neck Cancers Symposium.

The study focused on imaging using fluorodeoxyglucose (FDG) to detect responses to chemoradiation for p16+ oropharynx cancer. While FDG is the most commonly used radiotracer in clinical PET imaging, this trial is the first to report its use as a mid-treatment imaging marker to guide de-escalation for OPC.

Patients in this multi-institution trial had FDG-PET scans to determine their metabolic tumor volume before and midway through treatment. The current analysis reports findings for the first 59 patients accrued to the trial. Those who had tumors with lower metabolic activity before treatment and more than 50% reduction in metabolic tumor volume after two weeks of treatment were de-escalated—specifically, treatment stopped at a total dose of 54 Gy in 27 fractions, rather than the standard total dose of 70 Gy in 35 fractions. All patients received concurrent weekly carboplatin/paclitaxel chemotherapy.

"Advanced imaging helps physicians personalize therapy based on patients' individual tumor characteristics and response to treatment. By incorporating FDG-PET scans before and midway through treatment, we were able to adjust the radiation dose for about half of our patients and reduce their short-term side effects while still focusing on tumor control," said lead author Steven Allen, MD, Ph.D., a radiation oncology resident at the University of Michigan.

Half of the patients met de-escalation criteria and received the lower

radiation dose, resulting in approximately 25% less radiation exposure to the sensitive structures in the head and neck known to be associated with side effects during treatment. Patients in the de-escalated group had significantly less weight loss during treatment (6% vs. 11% from baseline, p