ASTRO Issues Guideline on Radiation Therapy for Patients with Locally Advanced NSCLC

The American Society for Radiation Oncology has issued a new guideline for use of "definitive and adjuvant" radiotherapy in patients with locally advanced non-small cell lung cancer (NSCLC).

The guideline, published in the May/June issue of *Practical Radiation Oncology* (***2015;5:141-148***), is also endorsed by the American Society of Clinical Oncology.

The authors—i.e., ASTRO's guideline panel—included 14 lung cancer oncologists in the U.S. and Canada, who reviewed 74 studies from English language publications within PubMed published from January 1, 1966 to March 15, 2013.

As part of their review, the panel focused on five questions, a news release notes:

- **The ideal external-beam dose fractionation for curative-intent treatment of locally advanced NSCLC with radiation therapy alone without chemotherapy:** The evidence cited in the guideline suggests that although use of radiation therapy alone was associated with improved overall survival when compared with just observation or use of chemotherapy alone, patients did have treatment-related side effects such as esophagitis and pneumonitis. Radiation therapy may be used alone as definitive radical treatment for patients with locally advanced NSCLC who are not eligible for combined modality therapy, and a minimum dose of 60 Gy is recommended to optimize clinical outcomes;
- **The ideal external-beam dose fractionation for curative-intent treatment of locally advanced NSCLC with chemotherapy:** The standard thoracic dose fractionation for patients treated with concurrent chemotherapy is 60 Gy, administered as 2 Gy once a day for six weeks. It has not been demonstrated that increasing the dose beyond 60 Gy with conventional fractionation is associated with any clinical benefits, including overall survival, the guideline states;
- **The ideal timing of external-beam radiation in relation to systemic chemotherapy for curative-intent:** The guideline recommends that when radiation therapy and chemotherapy are used to treat patients with locally advanced NSCLC, that radiation should ideally begin at the same time as chemotherapy—i.e., concurrent chemoradiation. For patients who cannot tolerate concurrent chemoradiation, the guideline recommends the use of sequential chemotherapy followed by radical radiation treatment;
- **The indications for adjuvant postoperative radiation for curative-intent treatment of patients with locally advanced NSCLC:** Although the use of postoperative radiation for completely resected locally advanced with N2 mediastinal disease is associated with improved local control but not improved overall survival, postoperative radiation is not commonly recommended for patients with N0 or N1 mediastinal disease. The guideline recommends that patients with microscopic or macroscopic residual primary and/or nodal disease should receive postoperative radiation to improve local control; and
- **The use of neoadjuvant radiation or chemoradiation prior to surgery is indicated for curative-intent treatment of locally advanced NSCLC:** The guideline notes that there is no Level I evidence recommending the routine use of preoperative neoadjuvant radiation therapy or chemoradiation for the management of locally advanced NSCLC. However, the guideline does provide information on ideal patient selection, operation type, and radiation dose for patients selected to receive radiation prior to surgery.

"Radiation therapy is a central component of treatment protocols for patients with locally advanced non-small cell lung cancer, with five-year survival rates of approximately 26 percent," said the Co-Chair of the guideline panel, George Rodrigues, MD, PhD, a radiation oncologist at London (Ontario) Health Sciences Centre. "This guideline summarizes more than 35 years of clinical trial evidence to provide the best evidence-based guidance on radiation therapy to improve outcomes for this challenging patient population."

The other Co-Chair of the panel was Gregory Videtic, MD, CM; and the other panel members were Hak Choy, MD; Jeffrey Bradley, MD; Kenneth E. Rosenzweig, MD, FASTRO; Jeffrey Bogart, MD; Walter J. Curran Jr., MD; Elizabeth Gore, MD; Corey Langer, MD; Alexander Louie, MD, MS, MSc; Stephen Lutz, MD, FASTRO; Mitchell Machtay, MD; Varun Puri, MD, MSCI; and Maria Werner-Wasik, MD, FASTRO.

Asked for his perspective, lung cancer specialist Ramaswamy Govindan, MD, Co-Director of the Section of Medical Oncology and Professor of Medicine in the Division of Oncology at Washington University School of Medicine and *OT*'s Clinical Advisory Editor for Oncology, said: "Patients with locally advanced non-small cell lung cancer have potentially curable disease, and ASTRO should be congratulated for developing this very important set of guidelines regarding the optimal use of radiotherapy in this subset of NSCLC."