

Submitted by:

Patrick W. Eiken, MD, Assistant Professor of Radiology, Mayo Clinic

Florian J. Fintelmann, MD, Assistant Professor of Radiology, Harvard Medical School

Robert D. Suh, MD, Clinical Professor, David Geffen School of Medicine at UCLA

Organization:

Society of Interventional Oncology

2001 K Street NW, 3rd Floor North, Washington, DC 20006

Phone: (202) 367-1164

Email: TGreene@sio-central.org

June 16, 2021

NCCN Guidelines Panel: Lung Cancer

On behalf of the Society of Interventional Oncology, we respectfully request the NCCN Non-Small Cell Lung Cancer (NSCLC) guideline panel review the enclosed data for updating the role of image-guided thermal ablation (IGTA) in the Clinical Practice Guidelines in Oncology (NCCN Guidelines) for NSCLC.

IGTA is inclusive of radiofrequency ablation, microwave ablation and cryoablation. IGTA is a form of “local therapy” or “local ablative therapy” and, generally, may be considered as a potential alternative to other local therapies, particularly for lung lesions < 3cm.

Specific Change 1: In “Discussion: Treatment Approaches”, add a section titled “Image-Guided Thermal Ablation” following MS-28 “Whole Brain RT and Stereotactic Radiosurgery” but preceding “Combined Modality Therapy.”

Rationale: Image-guided thermal ablation is increasingly being studied and used clinically in the treatment of lung cancer. Inclusion of IGTA and its appropriate application(s) would be useful to include as general guidelines under “Discussion: Treatment Approaches.”

Specific Change 2: On NSCL-2, for Stage IA Medically inoperable, delete footnote “m” and include “Image-guided thermal ablation” in the algorithm proper below “Definitive RT including stereotactic ablative radiotherapy”

Rationale: A continually growing volume of literature shows the long-term efficacy of IGTA for local control of primary and secondary malignancies of the lung. While the evidence for surgery or SABR may be more robust, use of IGTA may expand the pool of patients for whom local tumor control is possible. IGTA may be of particular value in patients with limited pulmonary reserve or for those who have reached the limits of tissue toxicity from radiation therapy.

The following articles are submitted in support of this proposed change:

Lencioni et al. Lancet Oncol 2008; 9:621-628.

Dupuy et al. Cancer 2015; 121:3491-3498.

Simon et al. Radiology 2007; 18:1264-1269.

Huang et al. Eur J Cardiothorac Surg 2010; 39:348-351.

Ambroggi et al. J Thorac Oncol 2011; 6:2044-2051.

Hiraki et al. J Thorac Cardiovasc Surg 2011; 142:24-30.

Palussiere et al. J Cardiovasc Surg 2018; 13:91.

Palussiere et al. Cardiovasc Interv Radiol 2015; 38:160-166.

Li et al. J Can Res Ther 2020;16:1007-1013.

Nance et al. Journal of Clinical Imaging Science 2021; 11:1-9.

Moore et al. J Vasc Interv Radiol 2015; 26:312-319.

Huang et al. Int J Surg 2018; 53:143-150.

Huang et al. Acad Radiol 2017; 24:1517-1525.

Chan et al. J Thorac Imaging 2011; 26:18-26.

Uhlig et al. Radiology 2018; 289:862-870.

Lam et al. J Vasc Interv Radiol 2018; 29:1211-1217.

Stone et al. J Thorac Oncol 2015; 10:1762-1769.

Horner-Rieber et al. Front Oncol 2017; 7:215.

Zhao et al. J Med Imaging and Rad Oncol 2020; 64:787-793.

Specific Change 3: On NSCL-15, Definitive therapy for local disease feasible → T1-3, N0, change “Surgical resection or SABR” to “Surgical resection, SABR or IGTA”.

Rationale: A continually growing volume of literature shows the long-term efficacy of IGTA for local control of primary and secondary malignancies of the lung. While the evidence for surgery or SABR may be more robust, use of IGTA may expand the pool



of patients for whom local control of the tumor is possible. IGTA may be of particular value in patients with limited pulmonary reserve or those who have reached the limits of tissue toxicity from radiation therapy.

In addition to the previously referenced articles, the following articles are submitted as further support of this proposed change:

Callstrom et al. JTO 2020; 15:1200-1209.

Schoellnast et al. Acta Radiol 2012; 53:893-899.

Li et al. AJR 2013; 201:1362-1367.

Gomez et al. Lancet Oncol 2016; 1672-168.

Iguchi et al. J Vasc Interv Radiol 2020; 31:1044-1051.

Specific Change 4: On NSCL-15, change footnote “hh” to read “Typically, RT (including SABR), IGTA, or surgical resection”.

Rationale: The low morbidity and mortality, lung parenchymal sparing and repeatability support IGTA as an ideal choice for local therapy in the treatment of pulmonary oligometastatic disease. IGTA offers equivalent treatment of oligometastatic disease outside the lung. Use of IGTA (especially when used in concert with surgery or SABR) may expand the pool of patients in whom a local consolidative therapy approach to limited metastatic disease is feasible. One would expect the survival benefit of a local consolidative approach to persist regardless of the specific tool used to achieve local control.

As “**specific change 3**” above.

In addition to the previously referenced articles, the following articles are submitted as further support of this proposed change:

Li et al. Thoracic Cancer 2019; 10:1628-1635.

Uhlrig et al. JAMA Open Network 2019; 2:e199702.

Halsey et al. J Vasc Interv Radiol 2020; 1-6.

Zeng et al. Front Oncology 2020 10:571684.

Li et al. Journal of Cancer 2021; 12:3057-3066.

Specific Change 5: On NSCL-17, for resectable recurrence, delete footnote “m” and add “IGTA” to the algorithm proper under “External-beam RT or SABR”.

Rationale: The low morbidity and mortality, lung parenchymal sparing and repeatability support IGTA as an ideal choice for local therapy in the treatment of pulmonary local (locoregional), symptomatic local disease, oligometastatic and advanced disease with residual local tumor before, during and after systemic therapy.

As “**specific changes 2, 3, 4**” above.

Specific Change 6: On NSCL-21, 22, 24 and 25, change each instance of “Consider definitive local therapy (eg, SABR or surgery) for limited lesions to “Consider definitive local therapy (eg, IGTA, SABR or surgery) for limited lesions.

Rationale: The low morbidity and mortality, lung parenchymal sparing and repeatability support IGTA as an ideal choice for local therapy in the treatment of pulmonary local (locoregional), symptomatic local disease, oligometastatic and advanced disease with residual local tumor before, during and after systemic therapy.

In addition to the previously referenced articles, the following articles are submitted as further support of this proposed change:

Gu et al. J International Med Res 2011; 39:1736-1743.

Li et al. Thoracic Cancer 2018; 9:1012-1017.

Yu et al. J Thorac Oncol 2013; 8:346-351.

Ni et al. Cardiovasc Intervent Radiol 2019; 42:693-699.

Li et al. Hindawi 2021; 6624429:1-10.

Sincerely,

Patrick W. Eiken, Florian J. Fintelmann, and Robert D. Suh