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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: Include a section "Principles of Image-Guided Thermal Ablation Therapy" to follow the existing "Principles of Radiation Therapy" section.
Rationale: Image-guided thermal ablation is increasingly being studied and used clinically in the treatment of lung cancer. A summary of IGTA and its appropriate application(s) would be useful to include as general guidelines.

Specific Change 2: In "Discussion: Treatment Approaches", add a section titled "Image-Guided Thermal Ablation" following MS-27 "Whole Brain RT and Stereotactic Radiosurgery"
Rationale: As above for Specific Change 1.

Specific Change 3: On NSCL-2, for Stage IA Medically inoperable, delete footnote "n" and include "Image-guided thermal ablation" in the algorithm proper below "Definitive RT including stereotactic ablative radiotherapy"
Rationale: A growing volume of literature shows the 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.
Ambrogi et al. J Thorac Oncol 2011; 6:2044-2051.
Hiraki et al. J Thorac Cardiovasc Surg 2011; 142:24-30.
Palussiere et al. Cardiovasc Interv Radiol 2015; 38:160-166.
Palussiere et al. J Cardiovasc Surg 2018; 13:91.
Moore et al. J Vasc Interv Radiol 2015; 26:312-319.
Huang et al. Int J Surg 2018; 53:143-150.
Chan et al. J Thorac Imaging 2011; 26:18-26.
Stone et al. J Thorac Oncol 2015; 10:1762-1769.
Horner-Rieber et al. Front Oncol 2017; 7:215.

Specific Change 4: On NSCL-10, Multiple lung cancers (N0-1), Definitive therapy for local disease feasible → Definitive local therapy possible, swap the positions of "Radiation" and "Ablation" and change "Ablation" to "Image-guided thermal ablation" or "IGTA".
Rationale: In the setting of multiple lung cancers, preservation of lung parenchyma and feasibility of repeat treatments are paramount considerations, as repeat treatments are expectedly necessary over time. Both lung parenchymal sparing and repeatability are strengths of IGTA relative to radiation.

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

Kodama et al. Cardiovasc Intervent Radiol 2012; 35:563-569.
Ridge et al. J Vasc Interv Radiol 2014; 25(7):989-96.
Kodama et al. J Vasc Interv Radiol 2014; 25:333-339.
Iguchi et al. Cardiovasc Intervent Radiol 2015; 38:409-15.
Stone et al. J Thorac Oncol 2015; 10:1762-1769.
Horner-Rieber et al. Front Oncol 2017; 7:215.

Specific Change 5: On NSCL-14, Definitive therapy for local disease feasible → T1-3, N0, change "Surgical resection or SABR" to "Surgical resection, SABR or IGTA".
Rationale: A growing volume of literature shows the 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:
Li et al. AJR 2013; 201:1362-1367.
Schoellnast et al. Acta Radiol 2012; 53:893-899.
Gomez et al. Lancet Oncol 2016; 1672-1682.

Specific Change 6: On NSCL-14, change footnote "dd" 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 5***" above.

Specific Change 7: On NSCL-16, for resectable recurrence, delete footnote "n" 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.

In addition to the previously referenced articles, the following articles are submitted as further support of this proposed change:
Lanuti et al. Ann Thorac Surg 2012; 93:921-928.
Li et al. AJR 2013; 201:1362-1367.
Schoellnast et al. Acta Radiol 2012; 53:893-899.
Gomez et al. Lancet Oncol 2016; 1672-1682.

Specific Change 8: On NSCL-19, 20, 22 and 23, 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.
Yu et al. J Thorac Oncol 2013; 8:346-351.
Li et al. Thoracic Cancer 2018; 9:1012-1017.
Ni et al. Cardiovasc Intervent Radiol 2019; 42:693-699.

Sincerely,

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