

Evidence Discussion Small Cell Lung Cancer (ONC-7.1 through ONC-7.4)

Suspected Diagnosis and Initial Staging

For patients with suspected lung cancer and an abnormal chest x-ray or a high suspicion for lung cancer with symptoms of lung cancer, a CT chest is indicated, with or without contrast. If a PET/CT is performed in the workup of a pulmonary nodule and is positive, it qualifies as the initial staging PET. The radiotracer supported for PET/CT for lung cancer is 18-FDG (NCI 2024, Megyesfalvi 2023). While some small cell lung cancer (SCLC) has a neuroendocrine component, the sensitivity, specificity and predictive value of dotatate PET/CT are uncertain at this time and dotatate PET is considered investigational (NCI 2024, Megyesfalvi 2023). Lesions 31mm or greater are considered masses rather than nodules, and should be biopsied rather than re-imaged with PET/CT (MacMahon 2017).

SCLC has widespread distant metastatic potential, with 2/3 of patients having metastatic disease at diagnosis and 10-15% including central nervous system disease (NCI 2024, Megyesfalvi 2023). Diagnostic, contrasted CTs of chest, abdomen and pelvis as well as MRI brain with and without contrast are supported (Ganti 2024). If PET has been completed in the pulmonary nodule workup, a repeat PET/CT is generally not supported. If a PET/CT was done prior to diagnosis and conventional imaging clearly shows extensive stage disease, a PET/CT does not change management. However, if a PET/CT was not done prior to diagnosis, a PET/CT is supported to confirm limited stage disease prior to treatment, as FDG PET/CT changes stage versus conventional imaging in up to 25% of patients(NCI 2024, Megyesfalvi 2023). Bony metastatic disease is not unusual in SCLC; thus, evaluation for bony metastatic disease is supported (NCI 2024, Ganti 2024).

Restaging

Conventional imaging with contrasted CT chest, abdomen and pelvis is supported every 2 cycles of chemotherapy and at the end of chemoradiation. MRI brain with and without contrast is supported when there is measurable CNS disease being treated with systemic therapy. If prophylactic cranial irradiation (PCI) is planned, an MRI brain is supported at end of initial treatment as some patients will harbor asymptomatic brain metastases and will require different management (Ganti 2024, Gaebe 2024), and PCI would expose the patient to radiation doses and neurotoxicity without benefit. CT chest, abdomen and pelvis as well as MRI brain and bone scan are supported if recurrence is suspected. Further literature is emerging to determine the role of FDG PET-CT for treatment response and suspected recurrence; eviCore guidelines do not routinely support PET/CT for treatment response or suspected recurrence of SCLC, but provide

flexibility on a case by case basis, particularly for patients with bony metastatic disease (Quartuccio 2019 and 2021, NCI 2024, Ganti 2024).

Surveillance

Surveillance with CT contrasted chest, abdomen and pelvis is supported. MRI chest is less sensitive than CT chest and usually not supported as a substitution for lung cancer, and CT abdomen/pelvis are favored by ACR over MRI for this indication as well (ACR 2024). Follow up is supported more frequently in the first two years post treatment, as that is when recurrence is most common (NCI 2024, Ganti 2024, Megyesfalvi 2023). The surveillance timeframe is determined by the initial extent of disease. For those with limited stage disease, eviCore guidelines support the above CT imaging every 3 months for 1 year, every 6 months for 2 years, and then annually. For those with extensive stage disease, imaging with above CTs is supported every 2 months for 1 year, every 4 months for two years, and then every 6 months for 1 year. This is within the wide timeframe recommended by the NCCN, determined with support from other data (Ganti 2024, Carter 2014, Kalemkenian 2011). Up to 30% of patients develop metastatic disease to the brain. Screening for brain metastases is supported to allow early treatment of brain metastases prior to potentially impairing neurologic symptoms. MRI is preferred over CT for its increased sensitivity and specificity, at an interval of every 4 months for 1 year then every 6 months indefinitely (Ganti 2024, NCI 2024, Gaebe 2024). PET-CT is not supported for surveillance due to excessive radiation exposure, false positive incidental findings, and financial toxicity, in accordance with ACR appropriateness criteria, ASCO, and NCCN (ACR 2024, ASCO 2024, Ganti 2024).

References:

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