Follow-up of early lung cancer

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Follow-up of early lung cancer

- Follow-up & discussion on imaging modalities
- Chronic complications & tackling them

Target population

- Not intended for patient on active treatment.
- Not intended for patients of diagnosed to have advanced lung cancer
- Follow-up imaging only if individual is fit for/willing for oncology treatment in case of recurrence.

Rational for imaging

- No clear evidence demonstrating a survival benefit for reimaging
- Rationale is to detect :

  Recurrent disease (additional time for planning of t/t)

  A second primary lung cancer

  Other smoking-related malignancy

- Intervention can increase survival, offer curative retreatment, and/or improve quality of life

Modality & frequency

- **Patients should undergo surveillance imaging for recurrence every 6 months for 2 years.**(Type: Informal consensus; Evidence quality: Low; Strength of recommendation: Moderate).

- **Patients should undergo surveillance imaging for detection of new primary lung cancers annually after the first 2 years.** (Type: Evidence based; Evidence quality: Intermediate; Strength of recommendation: Moderate).

Modality & frequency

SCLC – LS follow-up : (Not much data is available in this setting)

- Clinical evaluation at 3-month intervals with careful assessment of signs and symptoms of recurrence is preferable and should guide the need for symptom-directed imaging.

- The postulated utility of surveillance in SCLC includes :

early recurrence detection for potential clinical trial

participation, patient reassurance, and screening for new NSCLC primaries that are not uncommon in this patient population.

Modality & frequency

- Recent data from a prospective randomized trial suggest that routine CT imaging does not improve survival

- The IFCT-0302 trial (ClinicalTrials.gov identifier: NCT00198341), presented but not yet published, randomly assigned . 1,700 patients with resected stage I-III NSCLC to clinical examination plus CXR every 6 months for 2 years then annually up to year 5 or clinical examination, CXR, and thoracoabdominal CT scan plus bronchoscopy (optional for adenocarcinomas) at the same intervals (68% stage I, 14% stage II, and 18% stage III). After a median follow-up of 8.7 years, no survival benefit was identified with CT versus CXR (HR, 0.92; 95% CI, 0.8 to 1.7).

- Full publication of this trial is awaited

- This is the first randomized trial of follow-up in resected NSCLC and may help identify a more evidence-informed approach to surveillance.

Modality & frequency

- **Clinicians should use a diagnostic chest CT that includes the adrenals, with contrast (preferred) or without contrast when conducting surveillance for recurrence during the first 2 years post treatment** (Type: Informal consensus; Evidence quality: Low; Strength of recommendation: Moderate).

- **Clinicians should use a low-dose screening chest CT when conducting surveillance for new lung primaries after the first 2 years post treatment** (Type: Evidence based; Evidence quality: Low; Strength of recommendation: Moderate).

- **Clinicians should not use FDG-PET/CT as a surveillance tool** (Type: Informal consensus; Evidence quality: Low; Strength of recommendation: Moderate).

Modality & frequency

- After 2 years, goal for surveillance switches from detection of recurrence to detecting of new primary.

- CECT yields greater accuracy and reduced inter-reader variability in the detection of enlarged hilar lymph nodes in comparison with unenhanced CT, recognition of mediastinal lymph nodes is unaffected.

Modality & frequency

- One study of 92 resected patients compared 18F-FDG PET/CT with standard CT, bone scintigraphy, and brain MRI at 6-month intervals post resection. No improvement in sensitivity or specificity.

- Radiation exposure with FDG-PET/CT may be as high as **32 mSv**, compared with **3-7 mSv** with diagnostic chest CT imaging. Comparatively, a low-dose screening CT is typically **2 mSv.**

- **Cost** of PET CECT > diagnostic CT scan : low dose CT scan

- Issues about positive predictive value & negative predictive value.

Modality & frequency

- Surveillance imaging may be omitted in patients who are clinically unsuitable for or unwilling to accept further treatment.

- Age should not preclude surveillance imaging.

- **Consideration of overall health status, chronic medical conditions, and patient preferences is recommended; for example, due to clinical unsuitability, patient preferences and values** (Type: Informal consensus; Evidence quality:Low; Strength of recommendation: Weak).

Modality & frequency

- **Clinicians should not use circulating biomarkers as a surveillance strategy for detection of recurrence in patients who have undergone curative-intent treatment of stage I-III NSCLC or SCLC.**

- **CEA :** Post t/t increase in follow-up in stage 1 was found to be associated with poor prognosis in some studies. However no data for survival improvement and higher rates of false positivity due to COPD & smoking.

- **Cf-DNA :** study by Abbosh et al, detection of cfDNA was predictive of relapse in 93% of the cases (n = 24), while Chaudhuri et al were able to demonstrate that the detection of cfDNA could predict disease progression in 72% of patients (n = 32). Importantly, in both studies, the identification of plasma cfDNA preceded radiographic detection by an average of 2 and 5 months, respectively.
- However, the detection of recurrence 2-5 months before standard imaging modalities may not enhance overall survival

Modality & frequency

- **For patients with stage I-III NSCLC, clinicians should not use brain MRI for routine surveillance for recurrence in patients who have undergone curative-intent treatment** (Type: Informal consensus; Evidence quality: Low; Strength of recommendation: Moderate).

- **In patients who have undergone curative-intent treatment of stage I-III SCLC and did not receive PCI, clinicians should offer brain MRI every 3 months for the first year and every 6 months for the second year for surveillance. The same schedule may be offered for patients who did receive PCI.** (Type: Informal consensus; Evidence quality: Low; Strength of recommendation: Weak).

Chronic complications & late effects

Chronic complications & late effects

- Sequele of surgery, radiation, chemotherapy & immunotherapy.
- Psy-socio-economical aspects of treatment & follow-up

Symptoms

- 80 % difficulty with a physical symptom
- Clinically significant in approximately 30 %

Symptoms

- **Fatigue:** most common postsurgical symptoms reported by lung cancer survivors (up to 90 percent in some studies) & is linked to depression, anxiety, chronic pain, psychological distress, dyspnea, and sleep disturbances

- **Dyspnea** prevalence ranges from 55 to 87 percent in all stages of lung cancer.

- **Chronic pain** has also been reported in approximately 50 percent of lung cancer survivors, specifically after a thoracotomy, 50% report inadequate pain control, and nearly 40 percent of long-term lung cancer survivors report chronic pain symptoms

Symptoms

- Chemotherapy-induced **peripheral neuropathy** is a common treatment side effect and can cause severe pain and changes in heart rate and blood pressure.
- Long term chances of **metabolic syndrome.**
- **Lobectomies and bilobectomies** have been associated with significant declines in sleep, mental function, sexual activity, and overall health-related quality of life, even years postresection

Symptoms

- **Psychological distress** :Up to 80 percent of lung cancer survivors
- Three times more common than observed among survivors of other types of cancers.
- Symptoms of generalized fear; specific fear of recurrence, sadness, worry, or uncertainty; stress, including relationship stress; poor sleep quality; lack of concentration; depression; anxiety; suicidal ideations; and survivor's guilt
- Clinicians treating survivors of lung cancer might consider routine screening for **depression (PHQ-9), anxiety (GAD), and/or psychological distress (Distress Thermometer)**

Symptoms

- **Cognitive impairment** — More than one-half of cancer survivors report cognitive difficulties, which are believed to be the result of various treatments, and can persist for decades, significantly impacting quality of life

- Subjective difficulties with attention, concentration, and short-term memory.

Symptoms

- **Sexual dysfunction** — More than 60 percent of cancer survivors report having long-term sexual dysfunction; however, fewer than 25 percent seek help !

- Shortness of breath, fatigue, and emotional distress have been indicated as contributing factors

- Report problems with sexual desire, erectile function, orgasm, frequency of sexual activity, body image, and communication about sex.

Addressing risk behaviours

Persistent tobacco use:

- More likely to develop secondary cancers and have higher rates of cancer- and noncancer-related mortality
- After surgical resection with curative intent, second tumors are 2.3 times more common and recurrent tumors are 1.9 times more common in patients who continue to smoke.
- Overall mortality in smokers is 2.9 times higher
- Drug metabolism affected & Quality of life compared

Other issues

- **Diet** : There is limited research on the role of diet in the care of lung cancer survivors.
- **Weight** : Limited evidence suggests higher baseline weight and weight gain during treatment are correlated with improved outcomes in lung cancer.
- **Physical activity :** Long-term lung cancer survivors who report more physical activity reported significantly better quality of life in all five measured domains (mental, physical, emotional, social, spiritual), less difficulty with symptom control, and decreased pain severity compared with those who were not physically active

Other issues

Vaccination :

- Often overlooked.
- Might decrease mortality & morbidity specifically to respiratory predominant disease liver COVID 19, pneumococcal & influneza vaccination.
- Decreased incidence of immunorecognition in these patients.

Other issues

- Challenges to family life
- Challenges to care giver
- Challenges in coordination of care

Take home(clinic) messages !

Follow-up post treatment of early lung cancer patients :

- ✓ Routine MRI brain scans (except in case of SCLC), cfDNA & PET CT scan is **not** recommended.
- ✓ Aggressive imaging & follow-up is **yet to show any benefit in terms of survival**
- ✓ QOL, symptomic care, rehabilitation & vaccination **should not be overlooked** in overzealous pursuit to investigate recurrence.