

[Hospital information]

1. Name of Hospital		2. Name	
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3. Please select the location of your hospital.

(0) Seoul/Gyeonggi/Gangwon Province (1) Hoseo/Honam/Jeju (2) Daegu/Gyeongbuk (3) Busan/Gyeongnam

4. Please select the type of your practice.

(0) University Hospital (1) Non-university hospital

5. How many board-certified radiation oncologists are assigned to your department? _____

6. Of those, how many radiation oncologists are specializing in treating lung cancer? _____

7. How many medical physicists are assigned to your department? _____

8. Do you perform Lung SABR (SBRT) in your department?

(0) Yes(→ Please answer below) (1) No(→ Terminated)

9. How many board-certified radiation oncologists prescribe Lung SABR (SBRT) in your department?

10. How long have you been performing Lung SABR (SBRT) in your department?

(0) Less than a year (1) 1~2 year(s) (2) 2~3 years (3) 3~4 years (4) 4~5 years (5) Over 5 years

11. How many cases involving Lung SABR (SBRT) were performed on average per year in your department?

(0) Less than 5 cases

(1) 5~10 cases

(2) 10~20 cases

(3) 20~30 cases

(4) Over 30 cases

[Personal information]

1. Name of Hospital		2. Name	
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3. Please select the location of your hospital.

Seoul/Gyeonggi/Gangwon Province Hoseo/Honam/Jeju Daegu/Gyeongbuk Busan/Gyeongnam

4. Please select the type of your practice.

University Hospital Non-university hospital

5. How long have you worked as a radiation oncologist after receiving board certification?

Less than 2 years 2~5 years 5~10 years Over 10 years

6. Do you perform Lung SABR (SBRT)?

Yes(→ Please answer below) No(→ Terminated)

7. How long have you been performing Lung SABR (SBRT)?

Less than a year 1~2 year(s) 2~3 years 3~4 years 4~5 years Over 5 years

8. How many cases of Lung SABR (SBRT) were performed on average per year?

- Less than 5 cases
- 5~10 cases
- 10~20 cases
- 20~30 cases
- Over 30 cases

※ Check all the items that are relevant. If the item(s) is not included, please write it down in the provided space.

9. Which machines do you use for Lung SABR (SBRT)? Please choose all that are applicable.

- CyberKnife Tomotherapy ElectaVMAT
- Varian-iX Varian-RapidArc Novalis
- Truebeam Proton Others (_____)

10. Which planning system do you use for Lung SABR (SBRT)? Please choose all that are applicable.

- Accuray Eclipse Pinnacle
- iPlan Others (_____)

11. Which planning method do you use for Lung SABR (SBRT)? Please choose all that are applicable.

- Static non-coplanar beams
- Static IMRT
- Rotational IMRT (VMAT or helical tomotherapy)
- CyberKnife (Robotic SBRT)
- Dynamic conformal arcs
- Protons
- Others (_____)

12. Which immobilization method do you use for Lung SABR (SBRT)? Please choose all that are applicable.

- Stereotactic body frame
- Vacuum lock system or alpha cradle (including BodyFix)
- Wingboard
- No immobilization
- Others (_____)

13. Which method do you use for the moving target management of Lung SABR (SBRT)? Please choose all that are applicable.

- Abdominal compression (abdominal plate, bodyFIX, or other methods)
- Respiratory gating
- Breath hold
- Continuous implanted fiducial tracking
- Real-time electromagnetic (EM) transponder tracking
- Others (_____)

14. Which technique do you use in Lung SABR (SBRT) simulation? Please choose all that are applicable.

- 4D CT
- Free breathing CT
- Free breathing CT+fluoroscopy
- Slow CT
- Inhalation and exhalation breath hold CT
- Others (_____)

15. Do you use fiducials for tumor tracking or gating?

- Yes No Partially

16. Do you use heterogeneity correction in Lung SABR (SBRT) planning?

- Yes No

17. How do you prescribe a dose when performing Lung SABR (SBRT)?

- By volume By point

18. Which technique do you use as image guidance for Lung SABR (SBRT) in every fraction? Please choose all that are applicable.

- Conebeam/megavoltage CT/CT on rails before treatment
- At least one Conebeam/megavoltage CT/CT on rails during treatment
- Conebeam/megavoltage CT/CT on rails during and after treatment
- Orthogonal KV image pairing
- Electronic portal imaging
- No image guidance
- Others (_____)

19. Do you use fluoroscopy before every fraction of Lung SABR (SBRT) to check the movement of the diaphragm or tumor?

- Yes No Partially

20. In cases of fractionated Lung SABR (SBRT), do you perform treatment everyday?

- Yes No Partially

21. Do you check for quality assurance in every patient who receives Lung SABR (SBRT)?

(0) Yes (1) No (1) Partially

22. After SABR (SBRT), when do you perform the first follow-up imaging?

(0) within 4 weeks

(1) 4~7 weeks

(2) 7~10 weeks

(3) 11~16 weeks

(4) 17~24 weeks

(5) after 25 weeks

(6) no imaging

23. For the first follow-up imaging, what imaging modality do you use? Please choose all that are applicable.

(0) CT

(1) PET/CT

(2) Both CT and PET/CT

(3) no imaging

(4) others (_____)

Questionnaire study for Lung SBRT

The following questions tackle several controversial issues. Please answer the questions below based on your knowledge/experience.

1. Sometimes among clinically (on imaging) T1-2 NSCLC patients, pathological confirmation before SABR cannot be performed due to technical difficulty, or the patient's refusal to undergo further treatment. In such cases, which strategy do you prefer among the options below? Please choose all that are applicable.

- 1) No pathological confirmation (refer to CT or PET/CT)
- 2) Strongly recommend pathological confirmation, and perform SABR after the confirmation
- 3) Decide after follow-up imaging
- 4) Others (_____)

2. Which strategy would you recommend to patients whose regional lymph node enlargements have been detected (in CT and/or PET) and are considered as reactive nodes before SABR?

- 1) Close follow-up with imaging after SABR
- 2) Decide after pathological confirmation (with EBUS or EUS, etc.)
- 3) Do not perform SABR
- 4) Others (_____)

3. The following is a question on SABR-limiting pulmonary functions that you will be applying in your decision on whether to proceed with SABR or not. ()

- 1) Do not perform SABR under FEV1 (___L or___%) or DLCO (___%)
- 2) I think there is no limit in pulmonary function when proceeding with SABR.
- 3) Refer to the patient's general condition rather than pulmonary function value
- 4) Others (_____)

4. Have you encountered CCRT with SABR in NSCLC? ()

- 1) Yes (if any, what was the indication?: _____)
- 2) No

5. What is the main policy of your institution toward medically inoperable or high risk T1-2N0M0 NSCLC?

()

- 1) Close observation until the patient is symptomatic, and perform palliative treatment
- 2) Radiation therapy

3) Chemotherapy

4) Sublobar resection: wedge resection or segmentectomy

5) CCRT

6) Others (_____)

6. How do you foresee the effects of SABR on T1-2N0 NSCLC in the future? ()

1) It will decrease. 2) It will maintain the current level. 3) It will increase. 4) I have no idea.

7. In case you select hypofractionated RT instead of SABR in the treatment of T1-2N0 NSCLC, please describe your prescribed dose schedule.

(Total dose Gy/ fx/ weeks)

The followings are the cases of early NSCLC patients. Please choose the most recommended treatment based on the given image and patient information. Please feel free to write down your answer if none among the choices are available.

< Case 1 >



A 75-year-old male was diagnosed with stage I NSCLC (adenocarcinoma). His performance status was good (ECOG 1), size of the tumor was 1.6 cm and located 2.2 cm from the closest chest wall. Lobectomy was unavailable due to poor lung function.

1. Which treatment would you recommend to the patient? ()

1) Close observation until the patient is symptomatic, and perform palliative treatment

2) Radiation therapy

3) Chemotherapy

4) Sublobar resection

5) CCRT

6) Others (_____)

2. If you would recommend radiotherapy, how much would be the dosage and in what fractions would you prescribe them?

(Total dose Gy/ fx/ weeks)

3. If the patient is just the same as the case mentioned above except that the tumor is located within 1 cm from the chest wall, which treatment would you recommend to the patient?

1) Close observation until the patient is symptomatic, and perform palliative treatment

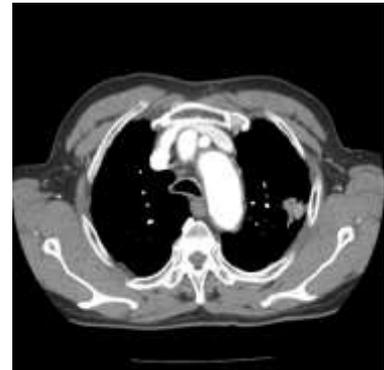
2) Radiation therapy

3) Chemotherapy

4) Sublobar resection

5) CCRT

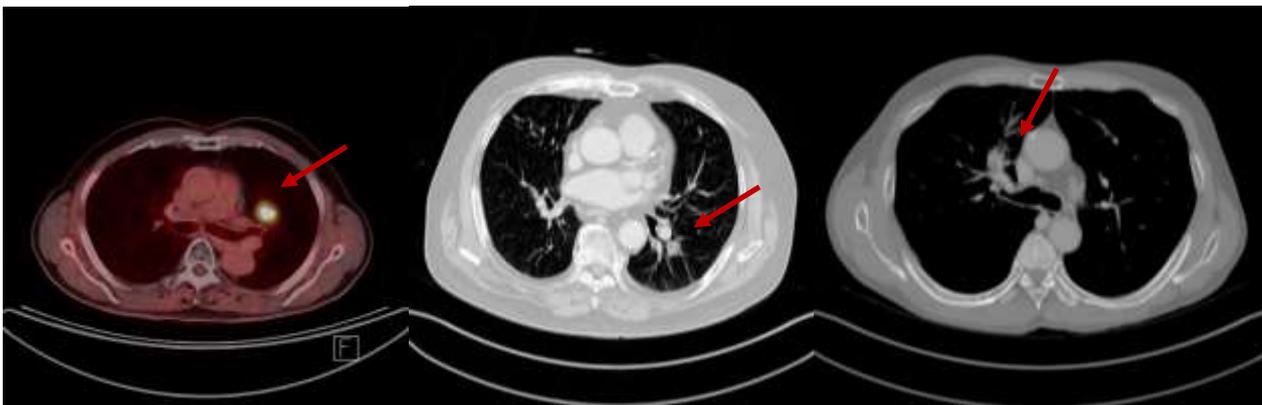
6) Others (_____)



4. If you would recommend radiotherapy, how much would be the dosage and in what fractions would you prescribe them?

(Total dose Gy/ fx/ weeks)

5. Which treatment would you recommend to the patient if the tumor is located within 2 cm from the main bronchus or major vessel, as seen in the CT or PET below (baseline conditions are same as the first case)? ()



1) Close observation until the patient is symptomatic, and perform palliative treatment

2) Radiation therapy

3) Chemotherapy

4) Sublobar resection

5) CCRT

6) Others (_____)

6. If you would recommend radiotherapy, how much would be the dosage and in what fractions would you prescribe them?

(Total dose Gy/ fx/ weeks)

7. If the patient is aged 80 or older with ECOG2, which treatment would you recommend to the patient?

- 1) Close observation until the patient is symptomatic, and perform palliative treatment
- 2) Radiation therapy
- 3) Chemotherapy
- 4) Sublobar resection
- 5) CCRT
- 6) Others (_____)

<Case 2>



A 75-year-old male was diagnosed with stage I NSCLC, cT2N0M0 (adenocarcinoma). His performance status was good (ECOG 1), and size of the tumor was 4.5 cm. Lobectomy was unavailable due to poor lung function. He had no comorbidity, except poor lung function.

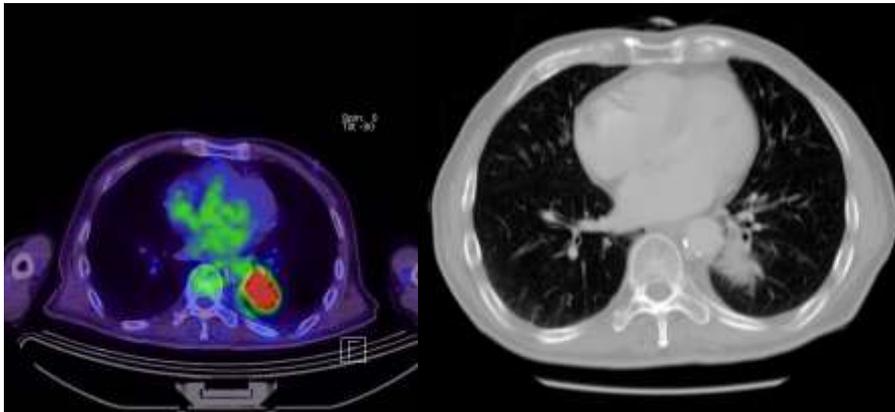
1. Which treatment would you recommend to the patient? ()

- 1) Close observation until the patient is symptomatic, and perform palliative treatment
- 2) Radiation therapy
- 3) Chemotherapy
- 4) Sublobar resection
- 5) CCRT
- 6) Others (_____)

2. If you would recommend radiotherapy, how much would be the dosage and in what fractions would you prescribe them?

(Total dose Gy/ fx/ weeks)

3. If the patient has the same condition as above except that the tumor is located within 2 cm from the main bronchus or major vessel as seen in the images below, which treatment would you recommend to the patient? ()



- 1) Close observation until the patient is symptomatic, and perform palliative treatment
- 2) Radiation therapy
- 3) Chemotherapy
- 4) Sublobar resection
- 5) CCRT
- 6) Others (_____)

4. If you would recommend radiotherapy, how much would be the dosage and in what fractions would you prescribe them?

(Total dose Gy/ fx/ weeks)