SBRT has emerged as the standard of care for medically inoperable early stage NSCLC. SBRT has been rapidly adopted by radiation oncology centers around the United States. A variety of planning and immobilization techniques, fractionation schemes, and surveillance strategies have emerged. As SBRT depends upon precise target localization and a steep dose gradient, technical aspects of treatment are of particular relevance.

The aim of the present study was to assess specific patterns of care across the United States, with a focus on planning strategies, motion management, dose and fractionation, and post-treatment surveillance.

Materials and Methods

A customized, web-based patterns-of-care survey was emailed to 136 academic and 768 community radiation oncologists. Survey recipients included all academic thoracic radiation oncologists practicing in the United States identified from department websites. Community practitioners were randomly selected from the ASTRO directory. Survey recipients included physicians in all 50 states and Puerto Rico.

The survey included 18 multiple choice questions and 2 clinical scenarios. Questions assessed:
- Practice demographics and SBRT case volume
- Immobilization, motion management, & planning
- Fractionation & localization
- Post-treatment surveillance

Results

A total of 117 surveys were evaluable among 46 (39%) academic physicians, 58 (50%) community physicians, and 13 (11%) hybrid/other, for a response rate of 13%.

Survey respondents practice in thirty-six different states and in the District of Columbia.

14% practiced for <2 years and 49% for ≥10 years. 18% performed fewer than 5 SBRT cases per year, while 28% performed more than 30 cases per year.

Conclusions

Considerable variation exists in the delivery of thoracic SBRT.

Our findings highlight the need for continual evaluation and refinement of the SBRT process. Ongoing and future prospective trials should better delineate optimal fractionation schemes and post-treatment surveillance approaches.