Stereotactic Body Radiotherapy for Early Stage Non-Small Cell Lung Cancer in Patients 80 Years and Older: A Multi-Center Analysis


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Background & Purpose

• Stereotactic body radiotherapy (SBRT) is the standard of care for medically inoperable early-stage non-small cell lung cancer (NSCLC)
  • Local control rates ≥ 90%

• Adoption of SBRT is rising and with an aging oncologic population, the treatment of patients ≥80 years old will be more common
  • Evolving literature, with varying definitions of elderly, about the utility of lung SBRT in older patients with early-stage NSCLC

• The current study was designed to investigate the efficacy, safety and survival of patients 80 years and older treated with definitive lung SBRT across a multi-site academic practice
Methods

• Retrospective chart and radiation therapy plan review from 2009 to 2015 for patients with early-stage NSCLC
  • Patients treated across four sites
    • Emory University Hospital, Emory University Hospital Midtown, Grady Memorial Hospital, St. Joseph’s Medical Center
  • Inclusion criteria
    • 80+ years old at diagnosis
    • Complete radiation planning records
  • Of 300+ charts reviewed across all ages, 58 patients met entry criteria
Results

• Median follow up time of 19.9 months (6.9 - 64.9 months)

• Median age at time of SBRT was 84.9 years (80.1 – 95.2 years)

• Safety (grading based on Common Terminology Criteria for Adverse Events)
  • No grade 4/5 toxicities
  • Grade 3 radiation pneumonitis: 6.9%
  • Grade 3 chest wall pain: 3.4%
  • Grade 3 esophagitis: 1.7%
Results (cont.)

Kaplan Meier 2Y Estimates (95% CI)

- Local Control: 84.5% (65.3, 93.5%)
- Regional Control: 71.7% (54.1, 83.5%)
- Metastatic Control: 85.1% (68.5, 93.4%)
- Cause-Specific Survival: 72.6% (52.1, 85.4%)
- Overall Survival: 56.4% (37.6, 71.6%)
Results (cont.)

2Y Cause-Specific Survival
- KPS < 75: 67.2% (40.0%, 84.2%)
- KPS ≥ 75: 96.2% (75.7%, 99.4%)

2Y Overall Survival
- KPS < 75: 49.9% (29.0%, 67.6%)
- KPS ≥ 75: 91.1% (68.4%, 97.7%)
Conclusions

• Definitive lung SBRT in patients ≥80 years old appears to be safe and efficacious
  • Our population was relatively high risk, perhaps representing a “realistic” octo- or nonagenarian who would present in clinic
    • 51.7% had prior lung cancer; 19% had prior thoracic radiation; 12.1% were T3

• Suggestion of an even greater benefit in patients with higher baseline functional status
  • Karnofsky Performance Status = 70 is regarded as “caring for self, not capable of normal activity or work”