High Dose, Small Field Radiation Therapy: Lessons from the HyTEC Project and the ICRU 91 Report

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SBRT/SABR Abstracts in Pub Med vs Year through 2016
SBRT=Stereotactic Body Radiation Therapy= SABR=Stereotactic Ablative Body Radiation Therapy

Safe and effective treatment; small-to-medium tumors; few fractions; high dose/fraction
• Improved understanding of small-field dosimetry
• Improved pre-treatment and intra-fraction image guidance
• Evolving clinical understanding of tumor and normal tissue response for SBRT regimens

Building on Past Efforts
• Physics basics
  • Report of AAPM TG 106 (accelerator commissioning including small field dosimetry)
  • Report of AAPM TG 179 (CT-based IGRT)
• Overview of SBRT and related QA
  • Report of AAPM TG 201
• Small field dosimetry
  • IPEM (Institute of Physics and Engineering in Medicine) Report 103
  • Das et al: Med Phys 35 206-215
• Outcomes analysis based on peer-reviewed publications
  • Emami et al: IJROBP 21 109-122, 1991 (Normal tissues; 2D and early 3DCRT)
  • Quantec reviews: IJROBP 76 Supplement, 2010 (Normal tissues; 3D and early SBRT)
Two simultaneous but separate approaches

- ~60 members, Physicists, MDs, Modeling experts
- Anatomical sites papers and 'Vision' papers
- Multilayer AAPM review, publication in Red Journal
- Currently located: 5 site papers in press
- Hope to move the rest through quickly