

External beam three-dimensional conformal accelerated partial breast irradiation (APBI) provides a non-invasive approach for a select group of patients for delivering hypo-fractionated breast radiation therapy to the area most at-risk for breast cancer recurrence. Use of linear accelerator generated radiation beams yields more homogeneous coverage of the target volume than afforded by any HDR approach. However, more tissue must be treated to account for uncertainties in cavity location and margins for patient setup.

There are several external beam treatment techniques used clinically today: 3D-CRT (as described by NSABP B39/RTOG 0413 protocol), the MGH method and the NYU prone system.

This lecture will provide a rationale for external beam APBI, discuss the various planning techniques and present clinical results.

Educational Objectives:

1. Gain basic knowledge of external beam APBI.
2. Review the planning techniques popular today.
3. Learn the challenges and limiting factors of 3D-CRT APBI.