

Robert R. Kuske, MD¹, Coral A. Quiet, MD¹, Margaret B. Snyder, RN¹, Maureen Lyden, MS², Deanna Attai, MD³, Lydia T. Komarnicky, MD⁴, Jay E. Reiff, PhD⁴, Constantine A. Mantz, MD⁵, Steven E. Finkelstein, MD⁶, Daniel Scanderbeg, PhD⁷, Catheryn Yashar, MD⁷

¹Arizona Breast Cancer Specialists, ²BioStat International, ³Center for Breast Care, Inc., ⁴Drexel University College of Medicine, ⁵21st Century Oncology, ⁶21st Century Oncology Translational Research Center (TRC), ⁷Radiation Medicine and Applied Sciences, University of California San Diego, La Jolla, CA

PURPOSE

†The SAVI Collaborative Research Group (SCRG), was created to study the long-term outcomes of women receiving accelerated partial breast irradiation (APBI) using strut-based applicators. The outcomes for the first 100 accrued patients in the study, treated between 11/2006 and 5/2008, are reported.



Figure 1 – SAVI applicator sizes 6-1 Mini, 6-1, 8-1, 10-1

MATERIALS and METHODS

Five-year results are reported in this subset analysis and patients were taken as the initial 100 treated across all participating sites. Median follow-up of this cohort was 56.3 months at the time of the abstract. Patients were treated with APBI using the strut-based brachytherapy device with conventional dose and fractionation (3.4 Gy x 10 fx, BID). Treatment planning goals for the planning target volume were a V90≥90%, V150≤50 cc, and V200≤20 cc.

Patients were followed regularly by their radiation oncologist and outcomes were graded based on the CTCAE v3.0 (common terminology criteria for adverse events, version 3.0). Recurrence (raw and actuarial) rates were also calculated based on the follow up. Cosmesis was graded using the Harvard Scale.

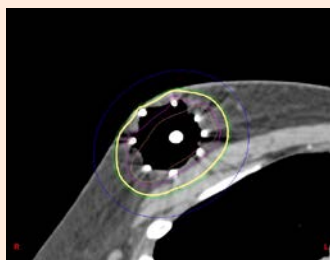


Figure 2 – SAVI 8-1 device with 100% isodose curve in yellow

RESULTS

The median age was 60.5 yrs (range 40-85 yrs), with 84% post-menopausal. Median tumor size was 10.0 mm (range 0.7-35 mm) with 92% being estrogen receptor positive. 65% of patients had at least one round of hormone therapy and 7% had chemotherapy. All patients completed APBI as planned with no serious adverse events. All patients met the dosimetric criteria.

Table 1 – Patient Characteristics

Characteristic	First 100
Subjects	100
Breasts	100
AGE	
Median (Range) (years)	60.5 (40,85)
≥60 years N (%)	50 (50%)
≥50-<60 years N (%)	34 (34%)
≥40-<50 years N (%)	15 (15%)
<40 years N (%)	1 (1%)
Menopausal Status N (%)	
Pre-menopausal	11 (11%)
Peri-menopausal	5 (5%)
Post-menopausal	84 (84%)
Tumor Size (mm)	
Median (Range)	10 (0.7,35)
≤ 5	15 (16)
>5 - ≤10	27 (28.7)
>10 - ≤20	43 (45.7)
> 20	9 (9.6)
AJCC Tumor Status N (%)	
Tis	25 (25%)
T1A	10 (10%)
T1B	24 (24%)
T1C	35 (35%)
T2	6 (6%)
AJCC Nodal Status N (%)	
N0	81 (84.4%)
NX	12 (12.5%)
N(+)	3 (3.1%)
Margins N (%)	
Negative	90 (96.8%)
Positive	1 (1.1%)
Close A (≤ 1mm)	2 (2.2%)
Close B (>1mm - ≤ 2mm)	0 (0%)
ER Status N (%)	
Positive	91 (91.9%)
Negative	8 (8.1%)
Last Follow-up (months)- All Breasts	
(Time since RT Stop)	
N	99
Median	56.3
Mean (SD)	52.8 (18.8)
Range	0.5,79.8

Good/excellent cosmesis was seen in >94% of subjects at all times of follow up (6-60 months).

The 5-yr actuarial rates for TR/MM and IBTR were 2.2% (all patients) and 3.3% (all patients), respectively.

Table 2 – Recurrence Rates

Number of Patients	N=100	5-yr
All Treated	Raw Rate	Actuarial Rate
	N (%)	(%)
IBTR	3 (3%)	3.3%
TR/MM	2 (2%)	2.2%
Contralateral	2 (2%)	3.3%

CONCLUSIONS

For these initially treated 100 patients with 5-year results, strut-based brachytherapy appears to be a well-tolerated, effective treatment with low rates of toxicities and local control, comparable to published results with other brachytherapy APBI methods.

ACKNOWLEDGEMENTS

†The SAVI Collaborative Research Group includes investigators from the following institutions:

Arizona Breast Cancer Specialists, Phoenix, AZ; Center for Breast Care, Inc., Burbank, CA; The Christ Hospital Cancer Center, Cincinnati, OH; Christiana Care Health System, Newark, DE; Drexel University College of Medicine, Philadelphia, PA; Northwest Community Hospital, Arlington Heights, IL; Kerri Perry, MD; Denton, TX; Schiffler Cancer Center, Wheeling, WV; South Florida Radiation Oncology, Boynton Beach, FL; Texas Oncology, Denton, TX; 21st Century Oncology, Ft. Myers, FL; and 21st Century Translational Research Consortium (TRC), Scottsdale, AZ; Radiation Medicine and Applied Sciences, University of California, San Diego, La Jolla, CA; Virginia Hospital Center, Arlington, VA.