

# BrachyBytes



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## Evidence Supporting Brachytherapy Continues to Mount

Since accelerated partial breast irradiation (APBI) was first offered in the late 1990's, numerous studies have been published presenting its equivalence to whole breast irradiation (WBI). Many physicians consider brachytherapy to be underutilized, although research indicates it is just as effective as WBI in terms of survival and local recurrence, with the added benefit of less treatment time and reduced toxicity.



Chirag S. Shah, MD

Chirag S. Shah, MD, is a radiation oncologist at Summa Health Systems in Akron, Ohio. He recently co-authored a study which presents 10-year APBI data showing equivalent clinical outcomes and cosmesis to WBI. Another one of his recently published studies follows APBI stratified by the ASTRO consensus groupings. These groupings are considering controversial as the guidelines for APBI treatment in the "cautionary" and "unsuitable" categories include patients whom studies have shown may very well benefit from increased brachytherapy utilization. Dr. Shah discusses the results of his recently published data, the patient benefits of APBI, and what physicians should realize about the ASTRO consensus groupings.

### Why do you think brachytherapy is still underutilized despite the building evidence which shows equivalent clinical outcomes to WBI?

I think brachytherapy is underutilized in part due to physicians waiting for results from the B-39/GEC-ESTRO trials. I would say that while the B-39/GEC ESTRO trials are important studies whose results will be practice changing, there currently exists significant data to support the use of brachytherapy, such as the Hungarian randomized trial, which included brachytherapy as well as data from the ASBS Registry. In addition, multiple national organizations (ASTRO, ABS, ASBS) have published evidence based guidelines for off-protocol utilization of brachytherapy, as well as published dosimetric criteria.

*"...while the B-39/GEC ESTRO trials are important studies whose results will be practice changing, there currently exists significant data to support the use of brachytherapy..."*

### What is the significance of using a matched-pair analysis to compare the long-term clinical outcomes between APBI and WBI, and why should clinicians feel confident with this data?

While the gold standard remains a randomized trial, a matched-pair analysis allows for controlling some factors (age, tumor size, estrogen receptor status, etc.) between two groups and in particular factors that would drive the outcomes which you are looking at (i.e. local recurrence). Clinicians should feel confident in the data as it represents a large group of patients with 10 year follow up, and demonstrates findings consistent with the literature to date. No difference in outcomes are noted.

## Your study revealed no difference in long-term cosmesis between APBI and WBI. Would you expect to see different results if strut-based brachytherapy was compared rather than balloon brachytherapy?

I think that there is certainly the possibility for improved cosmesis with strut based brachytherapy. Based on updated data at ASTRO (Yashar, Strasser et al.), toxicity rates with strut-based brachytherapy continue to remain low. Based on previous experience, this should translate to improved long term cosmesis. Also, with improved dosimetry compared to single lumen devices, I would expect cosmesis to improve as compared with outcomes from the ASBS Registry.

## It is mentioned in your study that because APBI shortens the duration of treatment, it could potentially improve a patient's quality of life. What benefits have you seen for your own patients who use brachytherapy?

With regards to benefits, it is very patient specific. Some patients find APBI a great option for them as it reduces the duration of treatment allowing them to return to work or miss less work, while others choose APBI due to distance concerns. Further, there are some women who would not be able to pursue adjuvant radiotherapy without a shorter course of treatment, and therefore APBI offers the potential for improved quality of life and clinical

outcomes by reducing the risk of local recurrence as compared to breast conserving surgery without adjuvant radiotherapy.

## In another one of your recently published studies, you bring to question the ASTRO consensus groupings which were established in 2009. What key points should physicians take from this study?

Our current study is consistent with multiple previous publications documenting that the ASTRO consensus groupings do not stratify patients by their risk of local recurrence, but may stratify patients by their risk of distant disease. Physicians should realize that the ASTRO groupings have not been revised since 2009. Data is increasingly available to support the treatment of patients with APBI. More recent guidelines from the ABS provide a new set of evidence based recommendations for patient selection that account for data with long term follow up. I tend to utilize the ABS guidelines, particularly including DCIS patients, since there is increasing data supporting the efficacy of APBI in such cases.

*"Physicians should realize that the ASTRO groupings have not been revised since 2009. Data is increasingly available to support the treatment of patients with APBI"*

*Dr. Shah is a radiation oncologist at Summa Health System in Akron, Ohio and Assistant Professor at Northeast Ohio Medical University. He is an accomplished clinical researcher and has published numerous studies on the efficacy of APBI treatment.*



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