

# BrachyBytes



Less Toxicity. More Patients.  
Now *That's* SAVI.



## APBI with Brachytherapy Remains a Key Therapy for Patients with Early Stage Breast Cancer



Chirag S. Shah, MD

Chirag Shah, MD is Associate Staff and Director of Clinical Research in the Department of Radiation Oncology and a member of the Taussig Cancer Institute at the Cleveland Clinic. He is also an Assistant Professor at Northeast Ohio Medical University. He is board certified by the American Board of Radiology and serves as the co-editor of the Radiation Oncology section of the American Society of Breast Surgeons BESAP program. Dr. Shah previously served on the American Brachytherapy Society APBI guidelines committee, is an editor for the journal Brachytherapy and is an author on over 100 peer-reviewed publications, reviews, editorials, and book chapters.

### Do you believe that APBI with brachytherapy is relevant in 2017?

I do believe that brachytherapy based APBI remains not only relevant but a major consideration for appropriately selected patients. Brachytherapy offers the ability for patients to complete treatment in one week or less, which is still significantly shorter than hypo-fractionated whole breast irradiation. Additionally, the smaller target volume allows for less dose to the remaining breast tissue.

Compared with other partial breast options, brachytherapy represents the technique with the longest follow-up and dosimetrically offers several advantages.

### Have you seen a change in physician practice patterns for APBI since the ASTRO consensus change in late 2016?

I have not personally seen a substantial changes in practice patterns though it has only been a few months.

I would expect use of APBI to increase based on the new guidelines which support treating patients 50 years or older and allows for low-risk DCIS in the suitable category. Additionally, with the publication of the GEC-ESTRO and Florence trials and the presentation of the IMPORT LOW trial, there is increased interest in partial breast approaches.

*"Brachytherapy based APBI is associated with comparable rates of local control and survival as compared to whole breast radiation."*

### What clinical studies do you feel are the most compelling for breast brachytherapy that physicians should review?

The most compelling data comes from the Hungarian randomized trial which provides mature follow-up as well as the GEC-ESTRO randomized trial. Additionally, the ASBrS Registry trial has provided 5 year outcomes and toxicity profiles

The key take away from these studies are 1) brachytherapy based APBI is associated with comparable rates of local control and survival as compared to whole breast irradiation, 2) brachytherapy based APBI offers the

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potential for a reduction in toxicity and improved cosmesis compared to whole breast irradiation, and 3) applicator based APBI is a safe and effective treatment option for patients.

### **Are there any studies in progress we should be watching and what is its significance?**

I think the most important study is RTOG 0413/NSABP B39 which has completed accrual and will provide clinical outcomes and toxicity profiles compared to whole breast irradiation for multiple APBI techniques.

Additionally, a study in progress is the TRIUMPH trial which looks to complete brachytherapy based APBI in 2 days (3 fractions) offering the potential to further shorten

*“I would expect use of APBI to increase based on the new guidelines which support treating patients 50 years or older”*

treatment duration without compromising local control or toxicity.

### **Now that a sizable body of solid clinical evidence exists to support the use of accelerated treatment with brachytherapy, what does the future hold?**

I think the future is to continue to offer and evaluate the outcomes with brachytherapy based APBI using novel regimens that reduce treatment duration while providing patients and clinicians with a technique that has

long-term outcomes, dosimetry, image guidance and has not been shown to have higher rates of local recurrence compared to whole breast irradiation.

*Dr. Chirag Shah was recently featured on USA Radio Network sharing his perspectives on brachytherapy with one of the largest talk radio networks in the country.*

[\*\*Click here to listen now!\*\*](#)

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## **Dosimetry Matters**

*John Kordomenos, PhD*

A while back I was speaking with a colleague about APBI and he stated that if the consensus of the community is that APBI is equally efficacious as WBI then why bother treating with HDR simply use external beam. At first glance this may seem like a very plausible argument, after all every center has modern linear accelerators with advanced integrated imaging and IMRT.

But it is so much more than that. Brachytherapy APBI is in fact the most optimal way to deliver APBI because of the dosimetry, specifically the inherent dose gradient associated with APBI.

Let's remember the rationale for APBI in the first place, when a lumpectomy is performed and pathology samples are taken at the margins, we are told margins are clear but we know there is still likely some disease left in the surrounding tissue. After all if there was absolutely no diseased tissue remaining there would be no need for

any radiation since we are not treating future cancers. The microscopic disease that may remain is almost always within a 1 cm margin of the original tumor bed with the highest density closest to the lumpectomy. This last point is important, residual disease is not equally spread out in this 1 cm margin but concentrated near the surgical excision zone.

Brachytherapy has an inherent dose gradient with the highest dose being delivered closest to the source (lumpectomy margin) and falling off with distance. This is exactly what we want isn't it? Think of the reason we perform a boost treatment in many radiation protocols.

Ultimately it all comes down to dosimetry.

# 2017 APBI Patient Selection Criteria

The new ASTRO guidelines allow for more women to be treated with brachytherapy. To request a small laminated copy of this 2017 Patient Selection Criteria reference chart, contact us at [info@ciannamedical.com](mailto:info@ciannamedical.com) with your name and shipping address.

## APBI Patient Selection Criteria 2017

**Professional Medical Society Consensus Statement:  
Patient Selection Criteria for Accelerated Partial Breast Irradiation**

	ABS <sup>1</sup>	ASBS <sup>2</sup>		ACRO <sup>3</sup>	ASTRO <sup>4</sup>	
					Suitable	Cautionary
<b>Age</b>	≥50	≥45	≥50	≥45	≥50	40–49
<b>Diagnosis</b>	All invasive subtypes and DCIS	Invasive ductal carcinoma	DCIS	Invasive ductal carcinoma or DCIS	Invasive ductal/DCIS	Pure DCIS ≤3cm EIC ≤3cm
<b>Tumor Size</b>	≤3cm	≤3cm		≤3cm	≤2cm	2.1–3.0cm
<b>Surgical Margins</b>	Negative microscopic margins of excision	Negative microscopic surgical margins of excision		Negative microscopic surgical margins of excision	Negative by at least 2mm	Close (<2mm)
<b>Nodal Status</b>	NØ	NØ		NØ	NØ (i-, i+)	

1. Shah, et al. The American Brachytherapy Society consensus statement for APBI. *Brachytherapy* 2013.  
 2. Consensus statement for accelerated partial breast irradiation. The American Society of Breast Surgeons. August 2011.  
 3. American College of Radiation Oncology Statement on Partial Breast Irradiation. September 2008.  
 4. American Society Radiation and oncology Consensus Statement on Partial Breast Irradiation. September 2016.



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Cianna Medical, Inc., 6 Journey, Suite 125, Aliso Viejo, California 92656  
 866.920.9444 • 949.360.0059 • Fax 949.297.4527  
[www.ciannamedical.com](http://www.ciannamedical.com)



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