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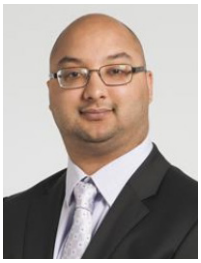
Brachytherapy Clinical Evidence Update



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Six-Year Results From a Phase I/II Trial for Hypofractionated Accelerated Partial Breast Irradiation Using a 2-Day Dose Schedule. Published in The American Journal of Clinical Oncology, October 2018, the paper reports on 6-year outcomes of 45 patients with early stage breast cancer receiving APBI in 2 days with high dose HDR brachytherapy totaling 2,800 cGy in 4 fractions using a balloon-based applicator.

KEY FINDINGS

Disease-free survival, cause-specific survival and overall survival	**96%, 100% and 93% respectively**
Cosmesis	**Good to excellent (91%) and fair (9%)**
Chronic asymptomatic fat necrosis	**11%**
Asymptomatic seroma	**13%**
Telangiectasia	**1%**

Click here to read the full paper by Dr. Shah

Q and A with Chirag Shah, MD

In the key findings what are the most significant points and why?

The most significant point is that there are no local or regional failures to date; while this is a small study this is encouraging for shorter fractionation schedules. Another significant point is the excellent cosmetic outcomes and low rates of toxicities.

This study used a single lumen, balloon based applicator. Do you think there could have been any differences using a multi-lumen or strut based applicator?

Based on dosimetric studies and my clinical experience, I would say that we would expect less normal tissue (skin, chest wall, non target breast) dose with multi-lumen and strut applicators and as such we could expect lower rates of toxicities including skin toxicity, fat necrosis, and seromas.

Can you comment on how a two-day treatment schedule would be beneficial for women?

A two day schedule would further reduce the burden of treatment for patients undergoing adjuvant radiation therapy while not sacrificing clinical outcomes or toxicity profiles.

How do the results compare to other accelerated forms of radiation, i.e. IORT, hypofractionated whole breast?

The results to date, while not randomized, compare favorably with respect to clinical outcomes and toxicity profiles with hypofractionated whole breast radiation. As compared to IORT, these outcomes appear more favorable with respect to local control. Also in contrast to IORT, APBI offers clinicians and patients distinct advantages including a known margin and lymph node status (before treatment), and still allowing the option to complete therapy within the same week of surgery.

Are there other studies for a shortened APBI dose schedule?

Yes. Other studies have evaluated alternative regimens with APBI such as TRIUMPH-T (TRI-faction Radiotherapy Utilized to Minimize Patient Hospital Trips) recently completed and we can expect results soon. This study evaluated a 2-day, 3 fraction regimen further condensing treatment. Future studies are also planned.

What are the most significant conclusions you would like to leave clinicians with as they review this paper?

What I would say is that that this study demonstrates the safety and feasibility of shorter brachytherapy based APBI regimens and supports larger ongoing studies evaluating these regimens. Also as discussed in the paper, an effective treatment is one where patients are willing to comply with and has the least disruption upon both their professional and private lives. Abbreviated treatment schedules, such as the one tested in this trial, allow patients to return to their lives earlier than standard fractionation pattern and, in the case of patients at extended distance from a radiotherapy center, may be the difference between completing breast conserving therapy versus forgoing adjuvant radiotherapy all together.

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