

## Simultaneous Integrated Boost: Improving the Patient Journey During Breast Cancer Radiotherapy Safely



*Madam* — We read with interest the UK IMPORT High trial abstract update demonstrating that simultaneous integrated boost (SIB) can be delivered safely in breast cancer without significantly increasing the risk of adverse events [1]. A series of other prospective studies has reported similar outcomes, reinforcing the safety of using SIB post-conservation surgery [2–7]. SIB instead of sequential boost can complete the entire course of adjuvant radiation within 3 weeks while using a hypofractionated regimen, reducing indirect costs by at least 25%. Also, one extra patient can be treated for every three patients treated with SIB.

We have now commissioned a class solution using a hybrid volumetric modulated arc therapy (VMAT) technique to integrate SIB with a standard whole breast tangential pair. Two short arcs of 30–35 degrees aligned to the tangents (Figure 1) were used to achieve conformal avoidance of the opposite breast, lung and heart. The prescribed dose of 40 Gy to the whole breast with SIB of 8 Gy (0.53 Gy per fraction) is similar to the schedule used in IMPORT High. Preliminary dosimetric comparisons with conventional sequential boost (12 Gy in four fractions) for our initial 10 patients have shown that the contralateral breast and lung mean doses only increase by an average of 0.1 Gy despite the use of VMAT. The use of SIB VMAT improved the average dose conformity to the boost volume

by nearly 30%. The total treatment time only minimally increased as the arc angles are short and can be delivered in a single breath-hold in cases requiring deep inspiratory breath-hold. Full results of the commissioning process are under review. We are planning to use this strategy as part of an Indian hypofractionated randomised controlled adjuvant radiotherapy trial testing a 1-week versus a 3-week regimen.

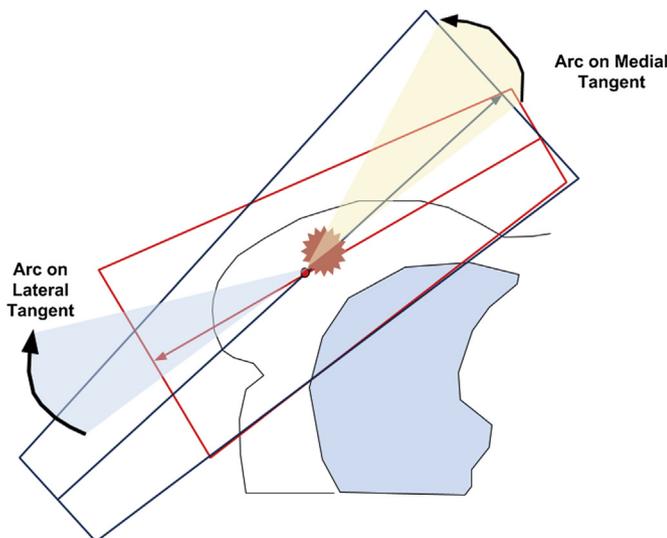
### Conflict of interest

The authors declare no conflict of interest.

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**Fig 1.** Representation of the simultaneous integrated boost strategy incorporating volumetric modulated arc therapy boost with tangents.

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