

#164: FIVE FRACTIONS SCHEDULE RADIOTHERAPY FOR EARLY BREAST CANCER WITH SIMULTANEOUS INTERGRATED BOOST. OUR 5 YEARS SINGLE-INSTITUTION EXPERIENCE

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Background: Adjuvant breast radiotherapy practice standard is 40 Gray in 15 fractions. 65 patients, from November 2020 to December 2025, with early breast cancer were treated after primary surgery, with ultra-hypofractionated 5 fractions in one week schedule WBI regimen of 26 Gray (Gy), based on the FAST FORWARD trial results, and 0,6Gy/fraction of simultaneous integrated boost (SIB) for a total dose of 29Gy/5,8Gy delivered in 5 fractions. This study attempts to identify the safety, low toxicity profile and patient convenience compared to other hypofractionated schemes.

Methods: 65 cases of patients, aged 40-70 with invasive carcinoma of the breast T1-2, pN0, M0 who underwent radiotherapy after breast conservation surgery are presented. Concurrent trastuzumab and/or endocrine therapies were allowed. For patient participation, all the inclusion criteria of the FAST FORWARD trial were met. 26 Gy in five fractions to the whole breast, with SIB of 29Gy to the tumor bed over one week, was delivered. At the breast conservation surgery, two pairs of titanium clips were implanted into the walls of the tumour excision cavity (tumor bed) to assist target delineation. Planning Target Volumes PTV_{wb} and PTV_{TB} were created by adding a 3d uniform expansion of 10mm to the CTV_{wb} and 5mm to the CTV_{boost} containing the tumour bed (clips), respectively. For dose-volume histogram assessment, lungs, heart, contralateral breast, and ipsilateral ribs were contoured. VMAT treatment plans using 6MV beams were used for the patient treatment. Daily pretreatment imaging verification was performed (CBCT), and all corrections were applied (6dCouch). Ultrasound examination and photographs were taken as baseline before the treatment. Follow-up assessment performed in week 1, week 4 and then every 3 months.

Results: All patients completed the 5 fractions schedule. The titanium clips proved to be necessary for the accuracy of the tumor bed delineation. The prescription dose was uniformly delivered to the whole breast and the tumor bed (V95%(PD)>95%). All dose constraints for OARs described by Fast-Forward trial were met. Follow up from 4 years to 6 months, no changes in breast appearance or shape were observed, while the skin reaction was grade 2 or less.

Conclusions: WBI regimen of 26 Gy in 5fx with SIB is a well-tolerated and safe hypofractionated radiotherapy scheme. It is also time efficient as it reduces the overall treatment time of EBRT to 1 week, with no differences in normal tissue toxicity or changes in breast appearance versus other radiotherapy schemes.

PTV coverage	Mandatory	Optimal
Lower limit	V95%≥90%	V95%≥95%
Upper limit	V105%PD≤7%	V105%PD≤5%
	V107%PD≤2%	
	Dmax≤110%	

