Purpose/Objective: Young women have a high rate of local failure after breast-conserving surgery (BCS) and radiation therapy (RT). We want to evaluate the efficacy and tolerability of 192-Ir high dose rate brachytherapy (HDR) with a single fraction as a boost after whole breast irradiation in women aged 45 or less.

Materials and Methods: We studied 167 consecutive patients (26-45 years old) who underwent BCS and whole breast RT (46-50 Gy), for invasive breast cancer from 1999 to 2008. One-two weeks later, an implant, with parallel metallic needles was performed under local anaesthesia and sedation in an outpatient basis. A free margin of at least 5mm was required. All cases were stages T1-2, 28.7% were pN+. Chemotherapy was used in 85% (adjuvant 67% and neoadjuvant 19%) and hormonal therapy in 77%. A single dose of 7 Gy (HDR) with optimization in volume was prescribed to the 90% isodose. Implant volume was decided by clinical assessment. No simulation or CT scan was performed, and dosimetry was calculated theoretically. The whole boost treatment was delivered in 2-3 hours, so we call it Fast-boost.

Results: The median follow-up was 86 months. Nine patients relapsed in the tumour bed or in the margin of the implant with an actuarial local control at five and ten years of 95.7% (failure rate 4.3%). Another patient relapsed in a different quadrant, therefore actuarial breast control was 95.1%. Patients aged 40 or less had a breast failure rate of 5.6% at ten year (compared with 13.5% of the EORTC 22881-10882 trial). More local failures were seen in triple negative (13.6%), G3 cases (14.9%), and patients aged 35 or less (11.5%). One patient developed an angiosarcoma. Eleven women required a mastectomy, then the preservation of breast was achieved in 94% of all patients. Twenty three patients developed distant metastasis. Disease free survival (DFS) at 5 and 10 year was 87.9% and 85.8% with overall survival of 92.1% and 87.3%. Ten-year DFS decreased in triple negative (75%) and G3 cases (76.4%). Cosmetic results were good or excellent in most cases (97%) and the acute and late toxicity was minimal.

Conclusions: Fast-boost with a single fraction of HDR is a safe, quick, simple technique. Local control in women younger than 46 years old, when surgical margins are free, has been improved related to literature data, with few failures than expected at year 10. A better biological effect of HDR is suggested, and breast preservation in young women using this approach is recommended.

OC-0363
HDR brachytherapy of the base of tongue. Ten year results of a prospective study
Z. Takacs-Nagy1, F. Omerba1, P. Koltai1, T. Major2, C. Polgar1
1Bacs-Kiskun County Hospital, Oral Maxillofacial and Head and Neck Surgery, Kecskemet, Hungary
2National Institute of Oncology, Head and Neck and Maxillofacial Surgery, Budapest, Hungary

Purpose/Objective: To date there are only few data in the literature about the feasibility and efficacy of interstitial high-dose-rate (HDR) brachytherapy (BT) of base of tongue cancer. Therefore the aim of this prospective study was to contribute to this issue.

Materials and Methods: Between January 1992 and June 2011 sixty-six patients (mean age 57 years, range 36-78 years) with T1-4 and N0-3 carcinoma of the base of tongue were presented. Fifty-six patients underwent colostomy, 6/44 to treat a G4 ano-rectal toxicity. Between January 1992 and June 2011 sixty-six patients (mean age 57 years, range 36-78 years) with T1-4 and N0-3 carcinoma of the base of tongue were presented. Fifty-six patients underwent colostomy, 6/44 to treat a G4 ano-rectal toxicity. Fifty-six patients were stage II or IIIA (UICC 2002) and 58/209 were N1-3 at diagnosis. All pts. underwent a boost by a Low Dose Rate (LDR, 151 pts) or a Pulse Dose Rate (PDR, 58 pts) BRT. Median follow-up time was 73 months.

Primary Endpoints: Local control (LC) and toxicity rates. Median LC time was not reached, with 5- and 10-years LC rates of 78.6% and 73.9%, respectively. G3-G4 acute and late toxicity rates were 11.2% and 6.3%, respectively. Grade 3 CT related acute toxicities were recorded in 7/151 pts. (4.6%). Globally, treatment was temporarily (>7 days) stopped in only 2 pts. and no patient definitively stopped the RT±CT treatment. 44/209 pts. (21%) underwent colostomy, 6/44 to treat a G4 ano-rectal toxicity. Sphincter function was evaluated with the Womack scale in the remaining 165 pts. and classified as score A (total continence) in 135 pts. (82%), score B (incontinence to gazes) in 25 pts. (15%) and score C (incontinence to liquid stools) in 5 pts. (3%).

Secondary endpoints: OS, DFS, CRT, 5-years OS, CSS, DFS, CFS, NRFS and MFS rates were 80.9%, 85.7%, 69.4%, 79.3%, 82.1% and 90.5%, respectively. 10-years OS, CSS, DFS, CFS, NRFS and MFS rates were 65.7%, 81%, 49.4%, 75.5%, 78.5% and 88.8%, respectively. Univariate and multivariate analysis.

BRT dose statistically influenced the LC, with lower doses showing better outcomes (p = 0.003). We noted a statistical relation between the total BRT dose (<18Gy vs >18Gy) and the objective response at clinical evaluation before BRT, with higher doses delivered to pts. showing worse response (p = 0.001). LC statistically influenced all the considered secondary endpoints (p < 0.001).

At the multivariate analysis, concomitant CT statistically influenced OS (p = 0.008) and MFS (p = 0.036) and the LC influenced OS and CSS (p < 0.001). A total dose < 63Gy was the only variable significantly influencing the risk of G3-G4 late toxicity (2.7% vs 10%, p = 0.02). None of the other variables influenced the considered primary and secondary endpoints.

Conclusions: BRT has an acceptable toxicity profile and allows high local control rates in anal canal pts. The role of this technique should be prospectively evaluated in the era of high conformal techniques and tailored oncologic treatments.

We treated 209 pts. (median age: 65 years; range: 26 - 89) with RT (58/209) or RT+CT (151/209). 163 pts. were stage II or IIIA (UICC 2002) and 58/209 were N1-3 at diagnosis. All pts. underwent a boost by a Low Dose Rate (LDR, 151 pts) or a Pulse Dose Rate (PDR, 58 pts) BRT. Median follow-up time was 73 months.

Primary Endpoints: Local control (LC) and toxicity rates. Median LC time was not reached, with 5- and 10-years LC rates of 78.6% and 73.9%, respectively. G3-G4 acute and late toxicity rates were 11.2% and 6.3%, respectively. Grade 3 CT related acute toxicities were recorded in 7/151 pts. (4.6%). Globally, treatment was temporarily (> 7 days) stopped in only 2 pts. and no patient definitively stopped the RT±CT treatment. 44/209 pts. (21%) underwent colostomy, 6/44 to treat a G4 ano-rectal toxicity. Sphincter function was evaluated with the Womack scale in the remaining 165 pts. and classified as score A (total continence) in 135 pts. (82%), score B (incontinence to gazes) in 25 pts. (15%) and score C (incontinence to liquid stools) in 5 pts. (3%).

Secondary endpoints: OS, DFS, CRT, 5-years OS, CSS, DFS, CFS, NRFS and MFS rates were 80.9%, 85.7%, 69.4%, 79.3%, 82.1% and 90.5%, respectively. 10-years OS, CSS, DFS, CFS, NRFS and MFS rates were 65.7%, 81%, 49.4%, 75.5%, 78.5% and 88.8%, respectively. Univariate and multivariate analysis.

BRT dose statistically influenced the LC, with lower doses showing better outcomes (p = 0.003). We noted a statistical relation between the total BRT dose (<18Gy vs >18Gy) and the objective response at clinical evaluation before BRT, with higher doses delivered to pts. showing worse response (p = 0.001). LC statistically influenced all the considered secondary endpoints (p < 0.001).

At the multivariate analysis, concomitant CT statistically influenced OS (p = 0.008) and MFS (p = 0.036) and the LC influenced OS and CSS (p < 0.001). A total dose < 63Gy was the only variable significantly influencing the risk of G3-G4 late toxicity (2.7% vs 10%, p = 0.02). None of the other variables influenced the considered primary and secondary endpoints.

Conclusions: BRT has an acceptable toxicity profile and allows high local control rates in anal canal pts. The role of this technique should be prospectively evaluated in the era of high conformal techniques and tailored oncologic treatments.