necrosis – 74,5% in 6 months observation time for each: HDR-BT and PDR-BT method in h/n. Serious late side-effects were seen in two patients (9%) - l/t and PDR-BT group.
Conclusions: 1. HDR and PDR both had similar percentages of side effects. 2. Early complications due to the total radiation dose are frequent and needs to be treated by intensive pharmacology. 3. HDR or PDR are effective tools in tumor recurrence radiation treatment, when surgical procedure is impossible and using another EBRT schedule very dangerous for the patient. 4. Future studies should aim to determine the maximum tolerated dose and appropriate patient selection.
Key words: head and neck cancer, HDR brachytherapy, PDR, recurrence, salvage treatment.

OC-0334
Reirradiation plus hyperthermia for irresectable recurrent breast cancer; size matters
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Purpose/Objective: Irresectable locoregional recurrent breast cancer in previously irradiated area is a life threatening disease and optimal treatment is still a matter of debate. Re-irradiation combined with hyperthermia (reRT+HT) is a valid treatment option. Four hundred and fourteen patients were treated with reRT+HT in the AMC (n=301) and the BVI (n=113), from January 1982 up to January 2006. We calculated response rates and local control (LC). Prognostic factors for tumor control were analysed in a multivariable analysis, with special emphasis on tumor size.
Materials and Methods: All patients previously received radiation, overlapping the current reRT field, to a median dose of 50Gy with or without boost. Median interval between initial treatment and reRT+HT was 54 months (range, 3-469). Most patients (80%) received one or more courses of systemic therapy in the past.
The median age was 57 years at start of reRT+HT. The estimated tumour size was >10cm in 48% of patients (range 0.2 – 26 cm). Distant metastases (DM) were present in 36% of patients and 74% had experienced previous recurrence episodes (range, 1-13). ReRT consisted typically of 8x4Gy, twice a week (AMC) or 12x3Gy, four times a week (BVI). Superficial hyperthermia was added once (ACM)/twice (BVI) a week using 434MHz Contact Flexible Microstrip Applicators. Aim temperature was 41-43°C for one hour. Twenty-two percent of patients received additional chemotherapy and 30% additional hormone therapy.
Results: Overall clinical response rate was 86% (58% cCR + 28% cPR). Median follow-up (FU) 17 months. Median overall survival was 17 months. The 3-year LC rate was 25%. Tumor size, time interval to recurrence, the number of previous recurrent episodes, and prescence of DM were significant prognostic factors for LC. For patients with isolated locoregional recurrences ≤ 5 cm the 3-year LC rate was 47%. (Table.1).

Table 1.

	Without DM			With DM		
Tumor size	n	cCR (%)	3-y LC (%)	n	cCR (%)	3-y LC (%)
< 3 cm	37	92	54	14	57	26
3-5 cm	22	77	35	14	50	14
5-10 cm	81	65	29	45	42	22
>10 cm	122	58	21	74	39	11

* data unknown for 5 patients

Conclusions: Re-irradiation combined with hyperthermia for locoregional recurrence after previous irradiation results in high response rates of 86%, despite resistance to previous treatments. Overall long-term LC control was 25%, but up to 47% in smaller tumors (< 5cm.). Tumor size, and absence of DM were positive prognostic factors for LC duration and overall survival.

OC-0335
Feasibility of deep head and neck hyperthermia
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Purpose/Objective: The outcome of current treatment of locally-advanced and recurrent head and neck carcinoma (HNC) in patients treated with radiotherapy alone is disappointing. The combination treatment of radiotherapy (RT) and cisplatin or cetuximab improves survival. Increased toxicity and comorbidity prohibiting combined treatment with cisplatin or cetuximab warrant the need for another radiosensitizer. Stimulated by several randomised studies demonstrating the radio-sensitizing effect of hyperthermia, we developed the HYPERcollar for applying deep hyperthermia in the HNC region. Here, we report the early experience and toxicity of deep hyperthermia treatment combined with radiotherapy in a cohort of patients with advanced HNC.
Materials and Methods: In total, 119 hyperthermia treatments given to 27 patients, treated with advanced HNC, were included in this analysis. Hyperthermia was applied for 60 minutes, or later 75 minutes, depending on patients' tolerance using the HYPERcollar, aimed at achieving 43°C in the target region. Treatment quality was monitored by patient specific hyperthermia pre-treatment planning combined with real-time invasive thermometry if possible, or pre-treatment planning alone. RT was given using either external beam irradiation (Cyberknife or IMRT) or interstitial irradiation.
Results: Applying hyperthermia in the very well perfused head and neck region proved to be challenging and high power levels were required (median 543W). 13% of the hyperthermia treatments were not fully completed, mostly due to pain (5%), which we allocated to hyperthermia treatment and dyspnoea (2%) caused by sticky saliva, associated with irradiation. Mean hyperthermia treatment time was 94% of planned duration. No severe complications or enhanced thermal or mucosal toxicities were observed. Preferably, metal implants (>1cm) should be removed to minimize the risk of toxicity, and prevent any unpredictable resonances reducing the predictive value of treatment