

LOCAL HYPERTHERMIA AND RADIATION THERAPY IN THE TREATMENT OF RECURRENT PRETREATED SUPERFICIAL TUMOURS.

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In this study 48 patients with superficial recurrent or metastatic lesions (≤ 3 cm in depth from the body surface) were enrolled. Patients were divided into four different groups depending on the site of tumour lesion (breast or chest wall -G1-, head and neck-G2-, melanoma-G3-and others-G4)(See table). All of them were previously submitted to other anticancer treatments and two third also experimented radiation. In particular 100% of G1, 90% of G2, 83 % of G3 were surgically treated. Most of them received chemotherapy contemporary to surgery (90% of patients) and some of them received radiotherapy also (92% of G1, 55% of G2; 100% of G3 and G4. therapy. In this study patients were irradiated using megavoltage photons or electrons. Dose fraction was 1,8 to 2 Gy per day, 5 days a week. Both previously irradiated and unirradiated patients received from 20 Gy to 60 Gy depending on the location of the previous dose. Alba Hyperthermia system operating at 434 MHz/45-75W was used for external heating with alfa or beta CCMA's applicators depending on the lesion size and depth. Temperature ranged from 38,5°C (T_{min}) to 44°C (T_{max}). Maximal allowed temperature was 45°C. Probes were located on the skin surface. Hyperthermia treatment was delivered twice a week during radiation therapy session. Tumour site was kept at an average temperature of 41 °C for 30 minutes. Skin cooling system never exceeded 37°C on the skin surface. The effects of the combined treatment were evaluated in terms of complete response (CR) and partial reponse (PR) at 6 months and persistent local control in the following 18 months. 96 % (68 % CR + 28 % PR) of G1, 60 % (30 % CR + 30 % PR) of G2, 53 % (35 % CR + 18 % PR) of G3, and 50 % of G4 showed sensitiveness to the combined treatment (See Table). Among sensitive lesions local control at 18 months was 72 % for G1, 50 % for G2, 44 % for G3 and 50 % for G4 (Table II). Results obtained are in agreement with literature. In particular we can confirm that this combination is effective in the group of patients previously irradiated, for whom giving a full dose additional radiotherapy was not possible. This study also confirms that hyperthermia treatment performed with modern equipments is a safe method. Sessions, in fact, were generally very well tolerated. None of our patients experienced severe, neither acute or chronic, injuries (data not shown). We confirm efficacy of combining radiation therapy to hyperthermia. Local hyperthermia is feasible, effective and safe. It improves patients outcome.

Lesions	No of patients	Age	Tumor size (cm)	Follow up % (3 months)			Follow up % (18 months)	
				CR	PR	NR	LC	NC
Breast and chest wall	25	65 (52-80)	1,4 (0,3-7)	68	28	4	72	28
Melanoma	12	69,7 (51-85)	2,5 (1-4)	30	30	40	50	50
Head and Neck	9	70 (51-89)	3,8 (0,5-8)	35	18	49	44	56
Others	2	52,5 (52-53)	3,5 (3-4)	0	50	50	50	50

RT: radiotherapy; **Gy:** Greys **HT:** hyperthermia; **CR:** Complete response; **PR:** Partial response; **NR:** No response; **LC:** local control; **NC:** No control.