

## **Oncological and non-oncological applications of electromagnetic hyperthermia (Oncothermia®) in the veterinary clinics – 2 years of experience**

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**Objective:** Advantageous thermal and induced non-thermal effects of electromagnetic hypertermia (EHT, Oncothermia®) in human medicine is in use for decades. Surprisingly there are much less references about the veterinary utilities.

**Material and Methods:** We applied EHT with capacitive coupled modulated 13.56MHz radiofrequency method (oncothermia OT). OT was provided for different canine and feline oncological patients (altogether more than 64 cases) as a single treatment (6/64), and in a combination with fractionated Cobalt irradiation (51/64) or with medical treatments (7/64). Dog patients suffering in other chronic diseases (4 osteoarthroses, 2 heart insufficiencies, 2 epileptic, 2 non-healing skin abscesses) were also co-treated with local (or regional) OT so that the original, non-eligible medical treatments were not changed.

**Results:** Single OT in oncological diseases resulted significant tumor size decrease 2 out of 6 cases, 3 stable disease and 1 progression of disease. Cobalt irradiation followed by OT resulted 5/51 tumor-free status, 42/51 partial remissions, 3/18 stable disease, and progression of disease in 1 case. Chemotherapy boosted with OT resulted 2/7, 3/18 stable disease, and 2/7 progression of disease in late stage, metastatic cases. Side effects eg.: erythema (2 cases), necroses (2 cases) occurred at the learning phase of technique, later on we could prevent this side effects with the constant superficial and deep temperature control in or patients. OT proved to be useful in all the non-oncological diseases and no side effects, contraindications were remarked.

**Conclusion:** We concluded that local and regional OT could be a useful tool as a single antitumoral modality but even more clinical utilities could be reached in a combination with radiotherapy and with chemotherapy. OT could be advantageous in the treatment of a variety other chronic diseases too. Further pro- and retrospective clinical studies needed to implement this novel technique into veterinary medicine.