

Whole Body Hyperthermia in Hormon-Refractory and Metastatic Prostate Cancer

Dr. med. A. Herzog, A. Zezirovic, E. Reith, M. Hollmann
Hospital Dr. Herzog, Bad Salzhausen, Germany

23rd Annual Meeting of the European society for Hyperthermic Oncology, Berlin 25. – 27.05.2006

Abstract:

Whole Body Hyperthermia in Hormone-Refractory and Metastatic Prostate Cancer

Objective:

In hormone-refractory metastatic prostate cancer further options of treatment up to now are not very promising. Randomized studies using palliative chemotherapy alone show rates of disease control of 15 – 45 %. In this pilot study the effect of a combination treatment of whole body hyperthermia (WBH) and chemotherapy was observed.

Methods:

Retrospective study. Whole body hyperthermia (WBH) of 41.5 – 41.8 °C over 60 minutes was induced by whole body infrared-A-irradiation (800 – 1200 nm wave length, Iratherm 2000 device, v. Ardenne, Dresden, Germany). Analgesedation with Propofol and Midazolam.

Patients:

15 patients were treated. 14 had metastases in bones and lymph nodes, 1 patient had a large local recurrence and lymph node metastases. All patients had a hormone-refractory disease. All patients suffered from pain, 2 patients had symptoms of nerve compression (Paralysis of hypoglossus or facial nerve). In 8 patients we used as chemotherapy Mitomycin C (12mg/m² d1) and Epirubicin (18mg/m² d1 + 8), WBH at d1. In 7 patients we used Docetaxel (AUC 4,5 on d2) and Carboplatin 50mg total dose d1 + 15), WBH was performed on d2.

Results:

In 7/15 patients a PSA decrease of 50 % and more was observed. In 5/13 patients there was no progression and PSA remained stable. In 3 patients PSA increased. Patient with PSA decrease experienced a pain reduction. Even the patients with stable or increasing PSA showed a temporary relief of pain. In both cases with nerve compression the paralysis improved. There were no significant side effects of chemotherapy using Mitomycin C and Epirubicin. Using Docetaxel and Carboplatin 2/7 patients showed hematotoxicity Who-grade 3. The WBH treatment was well tolerated, no side effects occurred.

Conclusion:

The combination of WBH with chemotherapy in patients with prostate cancer increases the effectivity of chemotherapy and induces a quick relief of cancer related symptoms like pain.

Introduction:

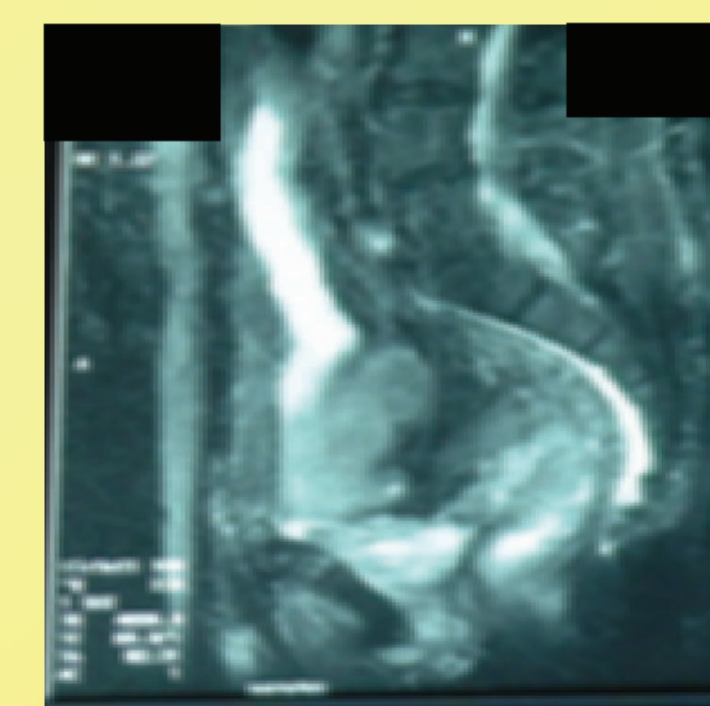
Patients with androgen-independent metastatic prostate cancer have a poor prognosis. They are suffering from pain, have loss of mobility, increasing weakness and most of them will die in 6 – 8 months. Conventional chemotherapy is not very effective and often associated with intolerable side effects. Treatment with aggressive chemotherapies in most of these patients is not possible for age, metastatic bone marrow dysfunction and other accompanying diseases. Also chemotherapies have not shown any significant effect on the survival time.

In our study we have examined the effect of whole body hyperthermia in combination with two different chemotherapy protocols in moderate doses. We also examined whether whole body hyperthermia is feasible in elderly patients.

case report: hormonal refractory prostate cancer 62 year old man



before therapy 10/02



after therapy 05/03

symptoms: increasing pressure in the lower abdomen
fistula between bladder and rectum after HIFU-therapy

therapy: 6 x wbh + Carboplatin/Taxotere

results: remission of the tumor, PSA 38 → 0,5 µg/ml patient free of complaints

Discussion:

- WBH plus chemotherapy in patients with hormone-refractory and metastatic prostate cancer is very effective showing higher remission rates than conventional chemotherapies
- beneficial effect on symptoms like pain, nerve compression
- well tolerable treatment with no significant side effects also in elderly patients
- no difference between older drugs like Mitomycin or Epirubicin and the newer combination Docetaxel / Carboplatin underlining the important role of WBH

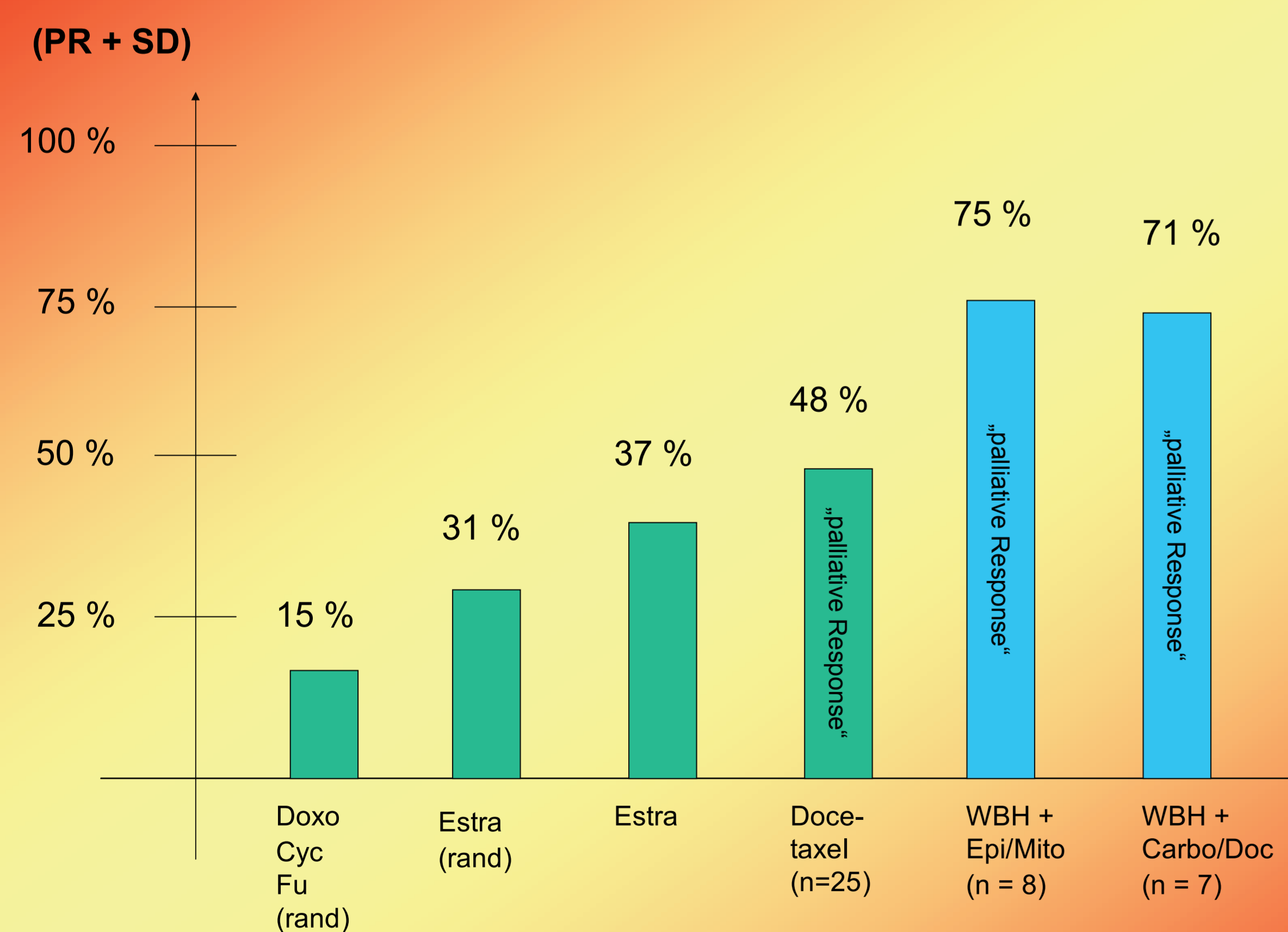
Patients (n = 15) :

• average age (years)	65 (56-74)
• metastases in bones	13
• metastases in lymphnodes	1
• local recurrence	1
• facial nerve compression	2
• pain	14
• anemia	13

Methods and treatments:

WBH-device:	Iratherm 2000 (v. Ardenne, Dresden, Germany)
technique:	Whole-body infrared-A-irradiation (1200 nm wave length)
maximum of temperature:	41 ⁵ – 41 ⁸ °C over 60 min.
Analgesia and sedation:	Fentanyl/Dormicum or Disoprivan
WBH-treatments / patient:	minimum 2, up to 6

Comparison of treatment results in metastatic hormonal refractory prostate cancer



Schedules of chemotherapy:

low-dose-EM: (n=8)	Epirubicin 17 mg/m ² Mitomycin 12 mg/m ² WBH	d 1 + 15 d 1 d 1
	repetition	d 35

DC: (n=7)	Docetaxel 50 mg Carboplatin AUC 4,5 WBH	d 1 +15 d 2 d 2
	repetition	d 28

