

# Title: "quasi-feasibility study(case-control) associating Local deep hyperthermia treatment with standard cancer treatments and describing the patterns of response."

Authors: Dr Ismael Herruzo Cabrera<sup>1</sup>, Dr Jorge Contreras Martínez<sup>1</sup>, Dra Eloísa Bayo Lozano<sup>2</sup>, María del Mar Lozano Gil<sup>2</sup>, Rocío Pérez Góme Inmaculada Fortes de la Torre<sup>1</sup> . 1--Servicio de Oncología Radioterápica del Hospital Carlos Haya de Málaga.2--Servicio de Oncología Radioterápica Hospital Juan Ramón Jiménez de Huelva.

**Introduction:** Is the first study associating Local deep hyperthermia treatment with standard cancer treatments in Spain and Andalucía.

## Materials and methods:

### Objetives:

**First:** Analyze the clinical benefits, response to treatment, treatment feasibility and comfort with hyperthermia in conjunction with standard Oncological cancer treatments, within the public health system

**Secondary:** Analyze survival, quality of life, toxicity (general and specific Oncological hyperthermia).

**Design:** Is a case-controlled study, "quasi-experimental" in prospective, applying hyperthermia treatments (6-10 sessions with a rate of 2-3 per week), along with standard treatments of RT, QT or combination of both. Patients affected with primary tumors in 9 locations or metastatic with radical treatment or with palliative treatment, retrospectively comparing each patient with 2 control cases treated during the previous year.

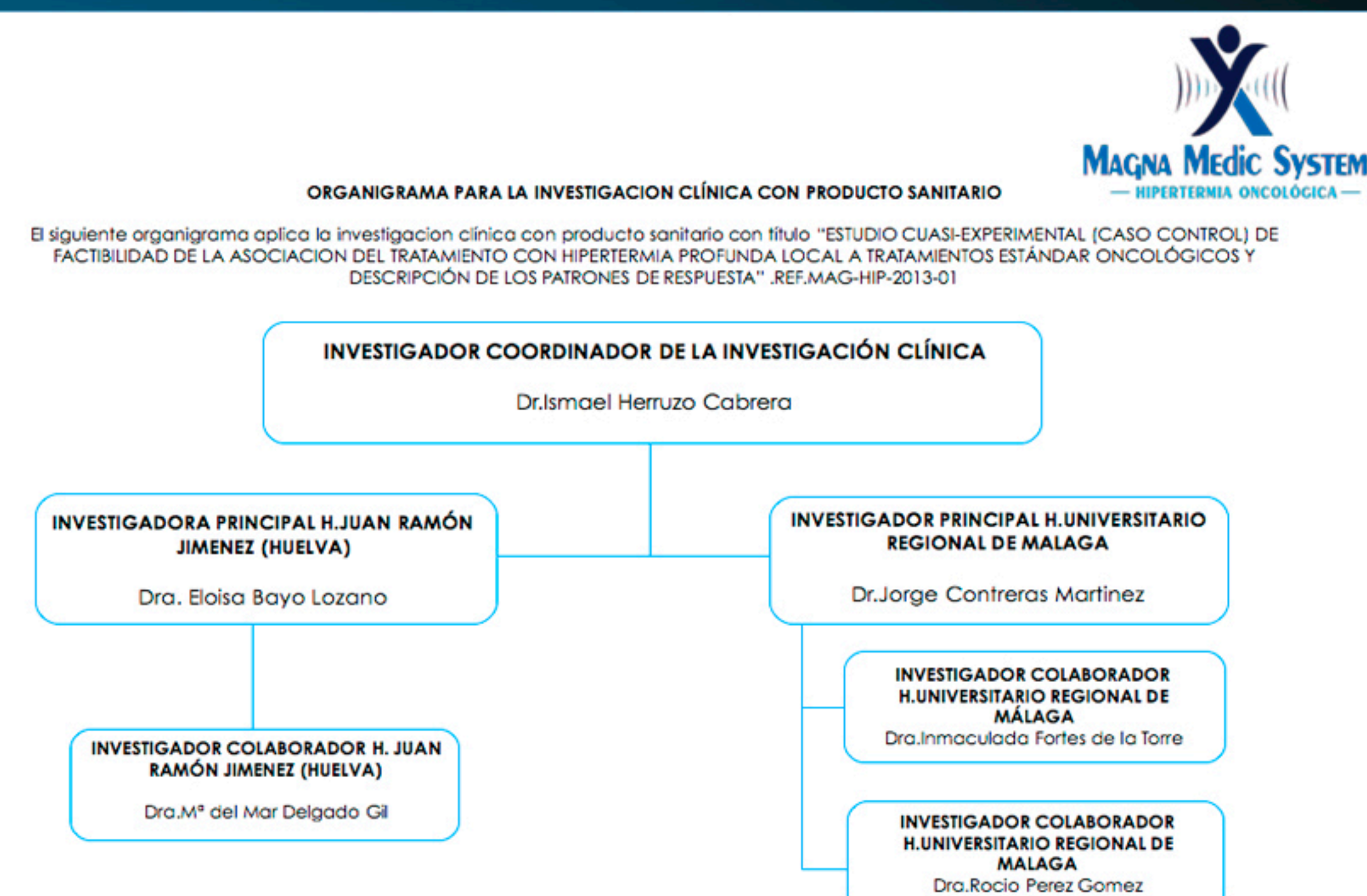
**2 phases:** First phase of learning curve (20 patients). Second phase of active treatment, to 97 recruited patients, compared with 196 controls ,treated with RT or QT without hyperthermia in 2012 in both hospitals (293 in total)..

## Nine tumor localizations

- ❖ Cervix, Prostate, vesical
- ❖ Pancreas, head and neck non operable
- ❖ Brain tumors, preoperative rectum.
- ❖ Avanced breast cancer non operable (in neoadjuvant treatment)
- ❖ Non microcitic lung cancer
- ❖ Paliative treatment in different locations



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## Results:

preliminary data from the first 22 patients, (9 in H Juan Ramón Jiménez and 13 in H Carlos Haya).

Gender: 13 men and 9 women. Average age 55 years (34-76 years old)

**Tumor localization :** glioblastoma (2c), Head and Neck (7c), preoperative rectum (3c), breast (3c), lung (1c), prostate (4c), cervix (1c), bone metastasis sarcoma (1c).

**Treatment:** Hyperthermia device HY-DEEP 600WM (Magna Medic System S.L) administering them 10 sessions, 2-3 times per week, 1 hour long and using between 150w and 400w according to the location associated with the standard Oncological cancer treatment.

### Causes of abandonment of the treatment:

Hospital Juan R Jiménez de Huelva: 3 cases , infection in treatment location (celulitis in rectum cancer), uterine bleeding (cervix cancer) and voluntary abandonment.

**Hospital C Haya de Málaga:** 2 patients, 1 on the 6th session for exitus , having tolerate well, and another in the 6th session because of progression with good tolerance.

**Patients evolution:** 19 are alive, pending of evaluation of response and 3 patients have died because the progression of illness (2 with exclusive chemotherapy treatment + HT, for tumor relapse in head and neck area previously irradiated and another patients with a relapse of pharynx tumor in treatment with paliative RT and HT

### Tolerance:

81,2 % of the patients (18p.) indicated that were satisfied or very satisfied and acceptable in 18,8% (4 p.).

**Toxicity:** Toxicity like burning sensation, grade I, in 8 patients of 22, (36,3%).

No toxicity in 66,6%.

Pain/pressure in the treatment area, grade I (in ulcerated breast), one patient.

*Our preliminar experience is orientated to the feasibility of treatment in the public hospital environment, in the regular routine without the need of extraordinary resources and great tolerance.*

## CONCLUSIONS

Treatment is feasible and comfortable for 81,2% of our patients in the public health system , with mild toxicity in 33% of the cases attributable to hyperthermia treatment being crucial the proper selection of patients