Medica Report © by Peter Walker

HOT . OncoTherm

I first saw the German/Hungarian based company Hot-OncoTherm in 1999 and have built up good contacts with them ever since. They are a manufacturer of medical equipment for hospitals and clinics and sell a unit (EHY 2000) that uses the Rife modulation as part of their therapy against cancer!

The use of Rife therapy used in this machine is based on extensive research done in a Hungarian University and backed by more than 20 clinical trials that have been carried out in Hungary, the Netherlands, Germany and Japan.

"Oncotherapy" combines hyperthermia (treatment with heat) with electro-therapy in the form of a Rife resonance frequency modulatated signal. This signal is made up of 1/3 pink noise in the range 5-10000 Hz. In recent clinical trials, this combination has been shown to be about **20% more effective** in the treatment of cancer than conventional therapy methods. This is often enough to make the difference between life and death and they have recorded many cases of patients who have achieved complete remission thanks to this treatment!

Here is an extract from one of their scientific papers:

Scientific Paper

Comparison of radiotherapy alone with radiotherapy plus hyperthermia in locally advanced pelvic tumours: a prospective randomised, multicentre trial.

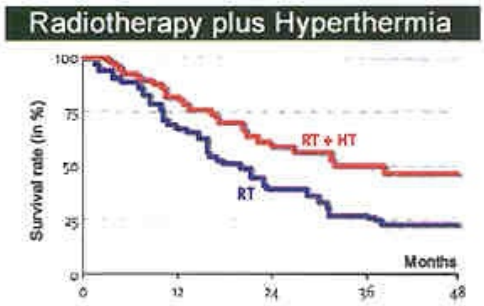
van der Zee J, Gonzalez Gonzalez D, van Rhoon GC, van Dijk JD, van Putten WL, Hart AA: *Subdivision of Hyperthermia, Academic Medical Centre, Amsterdam, The Netherlands*

Background:
Local-control rates after radiotherapy for locally advanced tumours of the bladder, cervix, and rectum are disappointing. We investigated the effect of adding hyperthermia to standard radiotherapy.

Methods:
The study was a prospective, randomised, multicentre trial. 358 patients were enrolled from 1990 to 1996, in cancer centres in the Netherlands, who had bladder cancer stages T2, T3, or T4, NO, MO, cervical cancer stages IIB, IIIB, or IV, or rectal cancer stage M0-1 were assessed. Patients were randomly assigned radiotherapy (median total dose 65 Gy) alone (n=176) or radiotherapy plus hyperthermia (n=182). Our primary endpoints were complete response and duration of local control. We did the analysis by intention to treat.

Findings:
Complete-response rates were 39% after radiotherapy and 55% after radiotherapy plus hyperthermia (p<0.001). The duration of local control was significantly longer with radiotherapy plus hyperthermia than with radiotherapy alone (p=0.04). Treatment effect did not differ significantly by tumour site, but the addition of hyperthermia seemed to be most important for cervical cancer, for which the complete-response rate with radiotherapy plus hyperthermia was 83% compared with 57% after radiotherapy alone (p=0.003). 3-year overall survival was 27% in the radiotherapy group and 51% in the radiotherapy plus hyperthermia group. For bladder cancer, an initial difference in local control disappeared during follow-up.

Interpretation:
Hyperthermia in addition to standard radiotherapy may be especially useful in locally advanced cervical tumours. Studies of larger numbers of patients are needed for other pelvic tumour sites before practical recommendations can be made.



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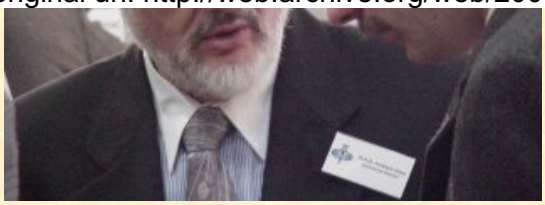
The Hungarian Prof. Andreas Szasz Ph.D, who is the technical consultant for HOT OncoTherm, told me how they had done serious research into the Rife method in Hungary and this had led to the inclusion of the Rife frequencies in the EHY2000. He his gave me some very interesting case studies,



etc. showing some of the results of their research into using Rife treatments. The Professor was very open and keen to exchange information and research into Rife. I have also attended two of their conferences (the latest in November 2002) where they have presented very impressive results. I will be adding more details about the latest conference, soon.

The complete EHY2000 system as seen at Medica 2000

I looked at their equipment which differs from anything previously known for the treatment of Rife. Instead of a plasma tube or pads, an electro-magnetic unit applies the therapy to the patient, who lies on a special bed, using capacitively coupled applicators.

Everything is controlled by the tall cabinet in the background. I was told that a range of different Rife frequencies have been implemented in this unit in the form of pink noise!

This unit is fully certified for use in Europe and already is being used in a number of hospitals and clinics.

The EHY2000 control unit

Close-up of the control panel

The unit has a special Rife switch!

The following is a short extract from the paper "Electro-hyperthermia: an Effective Treatment in Oncology" by Prof. Andras Szasz, Ph.D.

Abstract

Hyperthermia is a rapidly developing treatment method in oncology. The classical effect is based on well-focused energy absorption targeting the malignant tissue. The treatment temperature has been considered as the main technical parameter.

Unfortunately, the heat-shock protein (HSP) synthesis may considerably suppress the treatment's efficiency, adapting cells to survive the shock. Electro-hyperthermia heats up the targeted tissue by means of electricity, producing less HSP-synthesis in the cells than a usual hyperthermia process.

The main idea is to keep the energy absorption in the extracellular liquid and, by heating it, increase the ion-mobility, intensify the metabolic rate of the cells, and destroy the cell membrane before the heat-shock activates the intra-cellular HSP mechanisms.

.... 2 highly technical pages omitted .....

Electro-hyperthermia realization

The equipment developed is specially constructed with capacitively coupled applicators (the patient is the dielectric in a condenser) and carefully matched to have the best SWR. The machine does the matching and all the personalized tuning automatically and measures the electric parameters to keep the procedure controlled. To monitor the tissue temperature, the measured absorbed energy and the impedance is used. The matching of applicators is based on electro-dynamic calculations. Relatively little total power can be applied because of the good selectivity and well-focused heat absorption.

Well-cooled condenser surfaces (for capacitive coupling on the patients) are applied to avoid burning the surface and to make the application of higher treating power possible without any overheating risk; the heat-energy is not enough to heat-up the skin over 45°C.

The system (under the commercial name EHY2000) has been installed at numerous Clinics and Hospitals in Europe with CE/MDD (European certificate for medical devices) certification. Successes were shown on various conferences and publications [Last conference: 3rd Congress on Electric Cancer Treatment, 23-26 June 1999, Bad Aibling, Germany].

The capacitive coupling is not only the possibility to deliver electric field into the extracellular matrix. DC electrodes (percutane) as well as AC catheters (up to few kHz, inserted into the body cavities) could be also applied to act in the above manner. These pieces of equipment (named ECT 2000 and PCT 2000) also have been implemented and work successfully in clinical practice.

Conclusions

The electro-hyperthermia method is one of the effective treatment methods in oncology. It is highly selective, gentle and safe. Its effectiveness is mainly based on the induced chaperone expression in the extra-cellular and suppressed shock-protein induction in intra-cellular region. Furthermore, the method induces the immune surveillance to attack the malignant cells by stimulus of HSP90 in extra-cellular electrolyte. Moreover, electro-hyperthermia provides every advantage typical for all hyperthermia methods. Consequently, electro-hyperthermia extends the thermal treatment efficiency by non-thermal effects.

Ontotherm Stand at Medica 2001

The German medical journal, "Biomed Park", published by the Klaus Hartmann Verlag, published an interesting article on this equipment, which gives some insights into the equipment.

I have obtained permission to release this article on the Internet. I have translated this report from the original German into English:

Using Heat Against Cancer

The Hungarian company OncoTherm makes use of the effect of electric fields alongside the classic hyperthermia method

Hyperthermia has been in use for more than 2000 years. The Greek philosopher and doctor Hippocrates said: "Who cannot cure disease with medicine, should operate. Who cannot operate, should heal with heat." It is claimed that he used heat to treat breast tumours.

In the 60s, the whole body hyperthermia method was rediscovered, and studies on this form of therapy,

have been made since the 70s. The technical prerequisites for the clinical hyperthermia have been developed in the last few years although conventional medicine often reacted disapprovingly to what they called Quack medicine. In the meantime, modern hyperthermia methods have begun to separate themselves from this bad reputation. In a number of clinics, practices and institutes, Oncologists are already working with hyperthermia. Even the German health insurance system (Krankenkassen) are taking this form of therapy seriously and accepting the costs. Even so, the method is still controversial. The problematic is that "The current situation with oncologists hyperthermia is comparable with that of radiotherapy at the time it was discovered: We know that it is a method to use, however the correct dosage, the limits of its use, the optimal conditions for treatment and the exact effects have not been clarified. Only long-term studies can answers these issues," explained Prof. András Szász, director of the Hungarian Onco-Therm (HOT).

Fundamental research into hyperthermia has made significant advances in recent years and part of the physiological and biochemical mechanisms are now better understood. Prof. András Szász explained the foundations hyperthermia is based on: Tumour tissue is more sensitive to overheating than healthy tissue as it is less well supplied with blood. Surrounding healthy tissue can cope with the heat by increasing the circulation. Additionally, tumour cells have a faster metabolism and the heat speeds it up even further causing the cell to heat itself up even more. This high rate of metabolism combined with the poor blood supply causes the tumour cells to suffer from lack of oxygen. This causes acidosis, which damages the affected cells. This method has few side effects and is painless for the patient.

There are currently two different methods being used. With the whole body hyperthermia method, the entire body is systematically heated up to a temperature of up to 42°C. This method is used in particular to treat metastasis and advanced tumours. The local and regional hyperthermia is used to only heat the tumours and tumour regions. There are a number of companies offering hyperthermia systems, worldwide, using a various methods of transferring the heat to the body: Electrical energy, microwaves, infra-red, radio waves as well as electrical, magnetic and electromagnetic fields. The method HOT has chosen, is to apply hyperthermia with short waves and they named the method "Oncothermia." The small company has its roots in Hungary where it was formed in 1993 out of the research projects of the technical Eotvos University and the university clinics of the Semmelweis University in Budapest. Apart from its flagship, the local-regional Oncothermia system EHY2000, OncoTherm also offer a unit for the invasive electro-chemical tumour therapy and a whole body hyperthermia device that uses infra-red waves. Additionally, the PCT2000 is a intracavitarial Oncotherapy system on the market. The short wave emitter is inserted into natural cavities with a catheter. For example, the emitter can be positioned in the prostate via the urinary tract.

The local-regional Oncothermia system EHY2000 uses short waves at a frequency of 13.56Mhz with modulated low-frequency waves. The patient is, in other words, the dielectric between the plates of a capacitor - and therefore part of a resonant power circuit. "Through this system, the treatment can be easily matched exactly to the patient " as Prof. Szász, explained. In the patient's malignant tissue, a temperature can be achieved, during the treatment, of over 42°C. Besides the heat treatment; the induced electrical field plays an important part in Oncothermia. "The electric fields can be applied in such a way that they only affect the extra-cellular area and do not penetrate the cytoplasm. This is achieved through a using a field strength that lies far below membrane potential. The warmth only penetrates slowly into the inner part of the cell by thermal diffusion from the extra-cellular matrix. The modulated low frequency field destabilises the cell membrane."

Critics criticize that hyperthermia can also destroy healthy tissue. Szász counters that Oncothermia has a high selectivity for tumour tissues. "Due to the different dielectric properties of healthy and malignant tissues, the specific energy absorption rate is differs significantly. Under the conditions that prevail during the use of our method, the malignant tissue absorbs about 5-20 times more energy." In contrast to the microwave method, for example, no hot spots can be caused in healthy tissue and therefore cannot harm it.

Dr. Caius Popa, manager of the hyperthermia department in the BioMed clinic, Bad Bergzabern (Germany), has been working with four EHY 2000 units for about 2½ years. "We use this method for all soft-tissue tumours in combination with chemo and radiation therapy. Advantage: We can use a lower dosage thereby improve the patient's quality of life" reports Popa. "Besides this, the units are very easy to operate and can be quickly set for the treatment of the various organs and it allows us to work very precisely and reliably. As we treat 40 patients daily, we also rely on the good and fast service."

Hyperthermia - Not Quack medicine after all?

Outside lecturer Dr. Rüdiger Wessalowski of the clinic for Pediatric Haematology and Oncology in the University Clinic Düsseldorf (Germany) states: "That hyperthermia is so controversial lies in the fact that there were so many charlatans that used this method in an uncontrolled way. However, serious studies show that such treatment can be meaningful for various diseases." It has been accepted many times, that hyperthermia can improve the effectiveness radio and /or chemotherapy. Clinical studies in the phases II and III, for example that of Prof. Dr. R. D. Issels of the clinic in Grosshadern (Germany), verify the effectiveness. Additionally, hyperthermia reduces pain and stimulates the immune reaction against tumour cells. The treatment of tumours with hyperthermia will surely be a meaningful supplement to radiation and

chemotherapy in future. It could also achieve significance as a pre- or post-operative supplementary therapy. The Oncotherapy, that goes one step further than classical hyperthermia in that it uses the effect of electrical fields in addition to warmth, must now prove whether and which additional benefits it brings.

At the Chair for Radiology and Micro-therapy, University of Witten/ Herdecke (Germany), Prof. Dr. Dietrich H. W. Grönemeyer's group has been working with hyperthermia for some years. Assistant Doctor Hüseyin Sahinbas reports on the therapy results.

Bmp: How long have you been using Electro-Hyperthermia and which unit do you use?

Sahinbas: Since September 1999. We use the loco-regional Oncotherapy unit EHY 2000. After preliminary tests on dummies and based on the experiences of the users till then, we started to use the therapy on our patients in March 2000.

Bmp: Do you use this therapy on its own, or in combination with other therapy forms?

Sahinbas: In general, hyperthermia is used in combination with chemotherapeutics and/or radiation therapy with an interval and/or in parallel in order to optimise the effectiveness of the therapy. The therapy is administered about 12 to 14 times, in one region for about an hour.

Bmp: Where are the advantages in this form of therapy?

Sahinbas: So far, no side effects worth mentioning have been observed. At the moment, we have observed no limitations for the local-regional deep hyperthermia in its use as a supporting therapy. Even brain tumours, for example, can be treated without any side effects.

Bmp: Which problems still need to be solved?

Sahinbas: The effectiveness of deep hyperthermia and specific tumours could be researched, for example in combination with magnetic resonance imaging (MRI). As this form of therapy has worked without any noticeable side-effects, a unit to treat the entire body would be desirable, that is based on this technology. That would allow us to effectively treat larger areas, e.g. with diffuse secondary growths, without having a negative affect on the patient's quality of life.

Bmp: Hyperthermia is a very controversial method. What would you answer to a critic?

Sahinbas: There are more that 27000 national and international publications in connection with hyperthermia. At present, studies are taking place for many types of tumour and regional Phase II and Phase III studies are underway. The results are encouraging. Further research is however necessary.

Bmp: A short outlook?

Sahinbas: All our patients so far have been exclusively patients suffering with far advanced tumours and secondary growths in combination with conventional therapy. Our results so far show at least an improvement in the quality of life. For this reason, the status of hyperthermia should be especially researched on predefined patient groups.

"Who cannot cure disease with medicine, should operate. Who cannot operate, should heal with heat." Hippocrates

Picture 1: 26th Jan. 2000

Picture 2: 21st March 2000

Picture 3: 29th May 2000

Picture 4: 26th September 2000

Pictures 1-4: Computerized (cranial) tomography of the abdomen from a 76 year old patient with hepatic metastatic carcinoid during a local-regional deep hyperthermia treatment with the Oncotherapy system EHY 2000. The case study was conducted in collaboration with the institute for Micro-therapy, Prof. Dr. Grönemeyer, University of Witten/Herdecke (Germany).

Interview: Kristin Mödefessel-Herrmann for the Biomed park medical journal (6/2001 p. 39-41), Germany
Translation: Peter Walker (checked and approved by Prof. Andras Szasz)

My Conclusions:

Onco-therm have built an impressive unit for use in hospitals based on Hungarian research and confirmed by a number of clinical studies. The combination of heat therapy with Rife modulation has been shown, in numerous European clinical trials, to be more than 20% more effective in prolonging life than conventional treatments can achieve. A number of patients have been shown to go into complete remission after using this method!

OncoTherm have shown that it is both possible and advantagous to use Rife therapy in mainstream medicine.

I have more information on OncoTherm that I will be releasing as time permits !

To find out more about OncoTherm, have a look at their website: http://www.hot-oncotherm.de

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Last updated: 20.11.2002