

## Hyperthermia for advanced bladder cancer

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Targeted Hyperthermia Therapy Highlighted at Europe's Largest Radiation Oncology Convention:

Oliver Ott, MD of the University Hospital in Erlangen, Germany reviewed precedent clinical research using hyperthermia for treating targeted cancers as the basis for current work being done at the University. The objective of the bladder cancer research is to obtain a complete response from the cancer so that surgical removal of the entire bladder is not required. To achieve this, only the bladder tumor is removed surgically through the urethra and the residual cancer is treated with other therapies. At Erlangen, of 16 bladder cancer patients with T1 tumors, 100% of those who received hyperthermia therapy (via the BSD-2000) in combination with either radiation or radiation plus chemotherapy had a complete remission. Of 28 patients with T1-2 bladder tumors, 96% had a complete remission with hyperthermia and either radiation or radiation plus chemotherapy.

Rolf Sauer, MD, editor of the world's longest running scientific journal, "Strahlentherapie und Onkologie," and Chairman of the Department of Radiation Oncology of the University Medical School in Erlangen, Germany, chaired the symposium.

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For info about hyperthermia for superficial bladder cancer, see Synergo®, which uses microwaves to heat the bladder before instilling Mitomycin C; and EMDA/Electromotive drug administration, which combines BCG treatments, followed by "diffused" Mitomycin. Both approaches are giving improved results.

Hyperthermia, a procedure in which body tissue is exposed to high temperatures, is under investigation to assess its effectiveness in the treatment of cancer. Scientists think that heat may help shrink tumors by damaging cells or depriving them of substances they need to live. They are studying local, regional, and whole-body hyperthermia, using external and internal heating devices. Hyperthermia is generally used with other methods of therapy (radiation therapy, chemotherapy, and biological/immunotherapy) to hopefully enhance their effectiveness.

Local hyperthermia refers to heat that is applied to a very small area, such as a tumor. The area may be heated externally with high-frequency waves aimed at a tumor from a device outside the body. To achieve internal heating, one of several types of sterile probes may be used, including thin, heated wires or hollow tubes filled with warm water; implanted microwave antennae; and radiofrequency electrodes.

In regional hyperthermia, an organ or a limb is heated. Magnets and devices that produce high energy are placed over the region to be heated. In another approach, called perfusion, the patient's blood is removed, heated, and then pumped (perfused) into the region that is to be heated internally. Whole-body heating is used to treat metastatic cancer that has spread throughout the body. It can be accomplished using warm-water blankets, hot wax, inductive coils (like those in electric blankets), or thermal chambers (similar to large incubators). 1

Due to a growing body of medical evidence showing it's efficacy in treating many different kinds of cancers,

Hyperthermia is on the way to being considered as "main-stream" as surgery, chemotherapy, and radiation, and is becoming recognized as the "fourth modality" in approved cancer treatment. Due to its relatively recent acceptance in major medical circles, it is not well known - yet it is a treatment which may have promise for some people. 2

There are private clinics around the world using both intravesical and extracorporal (local and regional, external and internal) hyperthermia for bladder cancer, though in medical circles this is still considered experimental.

Medical evidence is coming in that suggests strongly that when hyperthermia is used in combination with radiation therapy or chemotherapy, an improvement in response rates can be achieved. Hyperthermia can be helpful with palliation, often dramatically reducing pain.2

Unfortunately, a clinical study done on 63 Japanese patients with advanced bladder cancer stages T3b-T4b, showed that the combination of chemotherapy, hyperthermia and radiation did not enhance long-term survival for those with advanced disease.3

Hyperthermia for advanced disease

In a preliminary study from Holland for using weekly loco-regional hyperthermia and cisplatin in patients with previously irradiated, unresectable locally advanced tumors, the results were encouraging (2 out of 4 bladder cancer responses, two partial responses), and toxicity was acceptable.4

<http://www.vci.org/> Valley Cancer Institute in California, holistic center using hyperthermia alone or combined with radiation and chemotherapy. A good place to look for the 'what and 'how' of the treatment.

<http://www.hyperthermia-ichs.org/treatment.htm> List of hyperthermia treatment centers in the US and around the world.

[back to invasive bladder cancer](#)

## References

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3. A clinical survey of advanced bladder cancer: treatment of advanced and non-resectable bladder cancer Naito K;

Hasegawa T; Ishida T; Yamamoto H; Mihara S; Komatsu K; Ueki O; Koshida K; Hisazumi H Department of Urology, School of Medicine, Kanazawa University.

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