



Hyperthermie-Tagesklinik Bochum

Hyperthermia + Chemo (Single Shot) – Thermal chemotherapy as short treatment for various kinds of metas- tatic conditions

:: Short Treatment Times Since 1994 the Hyperthermie-Tagesklinik has been offering patients special hyperthermia therapy. With thermal chemotherapy (TCHT) with extreme whole-body hyperthermia (60 to 90 minutes above 42 °C core body temperature) patients receive a short, intense treatment. They remain in the clinic for a week for therapy and initial recovery. Then they return home again for six weeks before the therapy is repeated.

:: SCareful Observation The response of the patient to the first treatment is carefully monitored. The therapy is only repeated if a verifiable success can be observed, and then twice in intervals of eight weeks. A reaction can also be expected with lung and bone metastases, e.g. in the form of immediate reduction of pain. Patients recover from the TCHT in our comfortable private hospital. This post-treatment care comprises of a series of medication which enable them to recover, as well as, initially, daily blood tests.

Hyperthermie - Tagesklinik Bochum

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:: Beds and Rooms

Hotel comfort
Suite furnishing
Bathroom / satellite TV / fridge
Relatives or care personnel
in neighbouring room

:: Travel Distances

Dortmund Airport: 32.4 km
Düsseldorf Airport: 39.3 km
Motorway: 3.0 km
Central train station: 1.5 km
Underground: 0.1 km



Prof. Dr. Karl Bremer
Director of Oncology,
responsible for chemotherapy



Dr. Arno Meyer
Director of the Hyperthermia Department,
Anaesthetist and Chief Physician

Hyperthermie-Tagesklinik Bochum

Medical Services

.: Combination Treatment Thermal chemotherapy (TCHT) is a combination treatment with a high level of tolerance for patients with malignant neoplasm diseases of the mammary gland, the gastrointestinal tract (especially cancer of the pancreas), the lungs, the urogenital tract (especially ovarian cancer), the skin, the bones and soft tissue, as well as with some advanced malignant tumours in the mouth and throat area (especially lymph node metastasis). In principle, adeno and squamous cell carcinoma with or without metastasis, osteogenic and soft tissue sarcomata of virtually every localization, malignant melanoma and non-Hodgkin lymphoma and also the malignant pleura mesotheliom can be treated. TCHT is an effective alternative when conventional treatment methods do not have any effect or have ceased to have an effect. As first-line therapy the Hyperthermie-Tagesklinik Bochum treats inoperable pancreas cancer and CUP syndrome (cancer of unknown primary site) with TCHT.

If the patient responds positively to the therapy then a significant improvement in both life expectancy as well as in the quality of life, or respectively, the retention of the quality of life is to be expected.

.: Team of Specialists Specialists The Hyperthermie-Tagesklinik Bochum consists of a small team of specialist doctors who have been working together for 15 years: Dr. Arno Meyer/hyperthermia (director), Prof. Dr. Karl Bremer/oncology and Dr. Rainer Lohmann/anaesthesia. Several languages are spoken among the doctors and care personnel including English, Arabian, Russian, and Italian. The members of staff take cultural differences into account and make extra provisions for special wishes in respect to eating habits or the gender of care personnel. The Hyperthermie-Tagesklinik Bochum takes special care of their patients and includes them actively in every decision.

Hospital facility
Airport pick-up service
Single/double rooms
Accommodation for relatives
Connecting door
Hotel comfort
Car park

Information for patients

With this info-sheet, we would like to outline our Integrate Cancer Combination Therapy. This is a gentle and special way to treat cancer. The Integrate Cancer Therapy is a combination of well-known ways of treating cancer under the conditions of whole body heating. Mostly performed in form of thermo-chemotherapy the therapy combines on a scientific basis the natural elements of oxygen, glucose and infrared-A heat with exemplary results for advanced cancer cases.

What is thermo-chemotherapy ?

The thermo-chemotherapy (TCHT) is a combined modality treatment with high tolerance for malignant tumours of the mammary gland, of the whole gastric intestinal tract (specially pancreatic cancer), of the lungs, of the urogenital tract (specially ovarian-cancer), of the skin, bones and soft-tissues as well as oral and neck advanced malignant tumors (specially node metastasis). In principle, adenocarcinoma and squamous epithelium carcinoma with metastasis (as well bone metastasis) or without metastasis, osteo sarcoma and soft-tissue sarcoma of nearly all localisations, the malignant melanoma and non-Hodgkin lymphoma and also pleural malignant mesothelioma can be treated.

The TCHT main treatment, which lasts several hours, is followed by approximately 24 hours of intensive care treatment in the specially equipped hyperthermia-clinic. This means, the patient stays in our clinic for one day, one night and to midday of the following day, before being transferred to our more comfortable private hospital.

The treatment itself is based on a controlled interaction between whole-body hyperthermia (body warming-up), induced hyperglycaemia (increasing of the blood glucose level), relative hyperoxemia (oxygen enrichment of the blood) and pre-arranged with the patient modified chemotherapy. Thanks to this multistep therapy, one has the chance to positively influence the course of the illness - even when tumours have not previously responded to radiotherapy, to cytostatics or to hormones.

How does TCHT work?

Cancer tissues accumulate lactic acid at an extremely increased glucose level, because cancer cells metabolise glucose to great extent into lactic acid, even in the presence of oxygen. This overacidification makes the cancer cells more sensitive to hyperthermia. On the other hand, the normal cells are stabilised energetically by glucose in the presence of oxygen. Therefore, in a temperature range between 41.9 and 42.5 °C (106.7 to 108.5 °F), the cancer cells are destroyed or at least damaged. The normal tissues of the organism, however, are not affected. The increased oxygen saturation in the blood results in a stabilisation of the cardiac functions, the circulatory system, the respiratory system and the central nervous system. Some cytostatics act better in an acid environment, so that the efficacy of chemotherapy can be increased through overacidification of the tumour.

Hyperthermia itself also increases the efficacy of some cytostatics. Some side effects of chemotherapy can be alleviated by relative hyperoxemia. On the basis of this complex interaction, an individually adapted chemotherapy in combination with the hyperthermia is highly effective and, in general, well tolerated.

What side effects can occur?

During the first days after the TCHT main treatment, the occurrence of fever up to 39 °C (102.2 °F) measured axillary (under the arm), can be read as an expression of a strong immunostimulation and is desirable in most cases. At this time, though, exhaustion, weakness, nausea, vomiting, headaches, diarrhoea and herpes labialis (blisters on the lips) can also occur.

Occasionally, thermally conditioned disturbances of the cell tissue metabolism in the different layers of the skin and the subcutis fat tissue, dependent on individual factors (e.g. vascularisation), can lead to thermal tissue injuries. Cases requiring treatment are, however, observed in less than 3 % of the therapies.

In rare single cases after TCHT treatment, an increased amount of oncolytical products can lead to an overstrain of the excretory mechanism (liver, kidney). As a consequence, temporary jaundice (icterus) as well as an increase of the liver and kidney values may occur.

Although the side effects of most of the cytostatics are milder than those of conventional chemotherapy, toxic effects of isolated cytostatics caused by the TCHT are observed in very few cases. Temporary functional disturbances of the peripheral nerves can, though, occur with temporary strength reductions, predominantly in the extremities.

During the TCHT main treatment, a moderate anaesthesia is given. The patient is unable to drive for at least three days after the main treatment. In the following days, due to various reasons (e.g. after-effects of the chemotherapy or additional medications), reaction times can be reduced and, therefore, driving ability is considerably limited.

Treatment procedure at our clinic

The treatment starts with a comprehensive medical consultation as well as with a clinical examination. If the previous medical-imaging reports (for example, sonographics, X-rays, CTs, MRIs, nuclear medical graphics) from the family doctor are too old, these examinations must be brought up-to-date before arrival or in a radiological clinic in Bochum so that the extent of the tumour structures can be determined exactly before the TCHT treatment begins.

On the day of main treatment, patients come at 8:00 to the hyperthermia-clinic with an empty stomach (on the day prior to the treatment, eating is permitted until 8:00 p.m. and drinking until midnight), a premedication (a sedative injection) is given in the morning before plus the attachment of an indwelling bladder catheter. The patient then lies naturally down - without being belted - on the net-bed of the IRATHERM 2000 infrared-A machine, free and reachable from every side, not locked in anything.

The following measures are taken in order to intensively monitor all the body functions. Two peripheral venous accesses in the form of flexible soft-tip catheters are attached for infusions, intravenous injections and blood sampling. The painless localisation of the thermometric probes (rectal, axillary, as well as on the skin of the stomach and the back), of the pulse oxymeter (on the right middle finger) and of the ECG miniature adhesive electrodes complete the intensive medical monitoring. During the whole treatment time, the ECG and oxygen saturation are very closely observed and all the relevant parameters are monitored by means of blood samples every 15 minutes. Continuous blood pressure measurements as well as regular blood-gas analysis are monitored. In this way possible deviations are recognised and corrected early. Serious disturbances can thus be averted to the greatest possible extent.

During an approximately 60-minute controlled infusion period, still at normal body temperature, the blood glucose level is increased by the three to four-fold of the initial value (by continuing the infusion during the TCHT main treatment, the blood glucose level attains a five to six-fold level of the initial value). Then, the body-warming-up process (hyperthermia) begins at approximately the same time as a moderate anaesthesia (neuroleptic analgesia at maintained spontaneous respiration; intratracheal intubation only if necessary) which acts over a time frame of approximately 6 hours. By means of infrared-A (short-wave part of the infrared spectrum) the body-core temperature is raised to 42.0°C (107.6 °F) within about 90 to 120 minutes. The chemotherapy is administered during the warming-up phase just before the body reaches 42.0°C (107.6 °F)

In the following so-called temperature-plateau-phase, a main body temperature of 42.0°C to 42.5°C (107.6°F to 108.5°F) is constantly maintained over 60 to 90 minutes. The cooling-off phase lasts for approximately another 90 to 120 minutes and uses the same monitoring measures as the warming-up and the plateau phase. An anti-emetic (a means to reduce vomiting) is added to the infusion during the last phase.

During the TCHT main treatment, lasting altogether approx. 8 hours, two doctors and two nurses are constantly at the patient's side (one doctor and a nurse continuously during the night and the next morning) then the patient will be transferred to the adjoining intensive care unit, an intensive care phase follows. The next morning at about midday the patient will be transferred by an accompanying doctor to the convenient private hospital to recover. For about 5 days the patients need infusions and medicines for recovery and initial daily blood sampling.

After a comprehensive concluding review, the patient can begin his or her trip home. In a detailed report which you will take along, we recommend the follow-up checks as an outpatient later at the home town.

What you should also know and consider

In case you have not yet been at our clinics and intend to be treated by us, please send us copies of all available reports of operation, histologies, X-rays, CTs, MRIs (magnetic resonance imaging), sonography (ultrasound) results, epicrises, physicians' letters (respectively on-going, intermediate or therapy reports). Please also provide an e-mail address, a telephone and fax number, where we can reach you. Immediately after our team of physicians has reviewed your case file, we will contact you. We will then arrange an introductory meeting with you which, as a rule, is the beginning of your treatment at our clinic. At the end of the treatment, you will receive your therapy data in a summarised treatment report, which will be made available to your family doctor.

We will do our best to arrange suitable accommodation in our private hospital with hotel comfort. Before the main treatment time, an accompanying person is of great benefit to the patient. For the time after the TCHT main treatment, an accompanying person is imperative.

The therapy costs depend on the individually tailored therapy, whereby we require payment in advance of the expected therapy costs (cash or by bank account) for each treatment.

The response to the TCHT will be carefully monitored after the first treatment (re-staging 6 weeks afterwards at home town) and only continued with proven results. This means two repetitions in intervals of 8 weeks in case of success.