Deadly heat for the Borrelia bacterium (Lyme Disease):

Whole Body Hyperthermia of Borreliosis

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Summary

Hyperthermia treatment * goes back to the second half of the 20th century, where for the first time in the history of medicine, a strong reduction in tumours was observed after high fevers. Extensive studies over the past 30 years have showed that longer lasting body temperatures from 42 ° C and above activate various processes which initiate the destruction of cancer cells. This treatment method has an even larger scale application in the world than the oncological treatment concepts currently held. The oncology Clinic St. Georg in Bad Aibling, the largest Hyperthermia Center in Europe also applies the effectiveness of hyperthermia treatment to patients suffering from the effects of a Borrelia infection.

The healing effects of fever

The healing effect of fever has been known since ancient times. After high febrile infections there was often a recognizable improvement of many chronic diseases. Therefore, many patients were sent to malarial areas, to contract malaria to improve their condition.

After the discovery of the pathogen erysipelas (streptococcus) lysates were used artificially to produce fevers for the following 40 years. The temperature process with such an infection (e.g. malaria) was not controllable. At the same time very poor hygienic conditions prevailed and many patients died, so they refrained from this method.

When antibiotics were introduced and applied from 1950, a positive defence reaction of the body was to develop a fever, but this was seen as another illness and was suppressed with medication. Only at the end of the last century has the value of the fever been rethought by medicine. This was partially due to the helplessness of doctors against uncontrollable antibiotic resistant infections and as partly for the development of new tumour therapies.

The effect of extreme whole body hyperthermia

The mode of action of hyperthermia in the treatment of tumours is now well known. Since cancer cells are anaerobic and have a fundamentally different energy metabolism compared to healthy cells, they have difficulty dissipating heat (they can't stand the heat and die) while healthy cells are more effective at maintaining normal temperatures. The situation is similar in the treatment of Lyme disease. The bacterium Borrelia burgdorferi struggles to withstand a high fever. By simultaneously elevating the body temperature, the body's own macrophages (feeding and killer cells) are activated, which then can eliminate the bacterium.

Hyperthermia may ***not*** be used in

* Marked bone marrow depression

* Marked cardiac / pulmonary insufficiency> 2nd degree

* Thrombosis, Marcumarisierung (blood-thinning medicine)

* Epilepsy, cerebral hypoperfusion (poor circulation)

* Severe lymphedema

* Renal failure

* Acute infections, body temperature> 38.5 ° C and

* Acute psychiatric disorders

Side effects:

In therapy, all known forms of heart / circulation and anesthesia-related side effects such as arrhythmias, aspiration of gastric juice, respiratory depression, pulmonary edema, etc., can be reduced to a minimum by a conscientious preparation. Because the blood vessels open in the Heating phase, a drop in blood pressure is often observed, but with increased fluid resuscitation or volume replacement solutions (this means something like being on an intravenous fluids drip) this can be counteracted. Seizures are very rare and are treated with intravenous Diazepam. Disorientation and restlessness occur in the recovery phase and intensify at temperatures above 42 ° C, but subside in the next 2-4 hours. Thermal pressure lesions occur at a frequency of only about 3% when the patient has the correct position. Burning when urinating during the first 36 hours is normal, however further clarification is needed when complaints persist.

A phenomenon of hyperthermia is a further increase in body temperature. If infection can be excluded (no chills, not intermittently etc.), this should not be suppressed with medication, because the fever can be considered as an immunological response.

With careful selection of patients and the above recommendations observed, the risk of extreme whole-body hyperthermia (GKHT) can be lowered to a minimum. Thus, in general, this form of therapy should be considered as well tolerated.

Glossary

Diazepam relaxing drug

Hyperthermia above, over and thermos: heat

pulmonary concerning the lungs

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