

As the subject of my bachelor's thesis I have selected hyperthermia as an instrument in the treatment of local advanced or recurrent breast cancer.

In separate chapters I describe the anatomy, epidemiology, aetiological factors, clinical symptoms, diagnostic screening, and principal characteristics of local advanced or recurrent carcinoma, their TNM classification and therapeutic options.

The bulk of my work is devoted to hyperthermia. I describe hyperthermia as an anti-tumour therapeutic modality, which utilizes the warming of tissue to a temperature of 40 – 44 °C. Hyperthermia is deployed locally, partially or generally (whole body). It is combined with other treatment possibilities, such as radiotherapy, chemotherapy, etc. In particular cases of advanced or recurrent tumours, treatment results are much improved by the combined use of hyperthermia with radiotherapy or chemotherapy.

I go on to describe the history of hyperthermia, the mechanisms for its effectiveness in terms of tissue and immunology and DNA repair, the technical equipment necessary for its implementation, results of clinical trials, and side-effects.

Hyperthermia is deployed in a small number of centres in the Czech Republic, namely Hradec Králové and Prague. In Hradec Králové, ultrasound warming is used, while the Prague centre uses microwave. Microwave thermotherapy has been used in the Czech Republic since 1982. The radiation oncology centre for the complex diagnosis and treatment of malignant tumours is currently at a very high standard. As part of the Bulovka faculty hospital it is one of the largest centres in the area of treatment of malignancy (malignant tumours).

In my work I have focused on the current state of hyperthermia at the radiation oncology centre at FNB (Bulovka faculty hospital). Here I have had the opportunity to participate in hyperthermic applications and track the treatment progress of a number of patients.