History of oncothermia and their devices

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Objective

Oncothermia concept was found when the company was established. However, the way of realization is a long process, having various steps frequent and sometimes deadlocks. Our objective is to show the history of oncothermia through its devices, giving a picture how stable development was achieved by the years, and conclude with a lesson how to go further.

Description

The university spin-off in 1999 was based on a biophysical idea. The medical staff were involved with the first device in use. This was the “Cryoral” device (started to work in 1985 at UroMed GmbH, Heidelberg, Germany). This was a galvanic device, which was on exhibit in the first Congress of ECT knowledge in Beijing, China in 1981. The next step was a non-invasive device the very first EHY (1992) and parallel was further developed the galvanic technique. ECT (which reached the German GS-approval in 1994. The first EHY2000 was produced in 1994 and reached the CE sign (first ever in the category of hyperthermic oncology according to European medical device Directives) from TÜV Munich, Germany in 1998. In the meantime the first intraluminal device (ICT) was developed on the same technological basis like the previous devices, and was in clinical probe in 1996, and the first whole body hyperthermia (WBH) was also parallel developed and tested in 1997. Its moderate version (MWB) was launched in 1999 in 2001 a venture capital was invested in the company, and Oncotherm GmbH was established in Troisdorf in 2002. The first device for this company was developed and launched in 2004 (EHY2000plus). The first multi-local device (EHY3000 series) was shown in 2008, and soon, less than a year later, the first very modern intraluminal devices (SHY1000 series) were placed on the markets. Parallel with the oncological hyperthermia Oncotherm’s has introduced very unique devices for special use. For a special purpose device for extreme treatment (ICT) was developed in 2004, and for laboratory use (in vivo and in vitro applications) a high precision device series (LabEHY series) was launched in 2008. This was extended with a special temperature measuring device (EBHY5). A non-treatment (non-custative only complementary) small device was developed in 2009 (ChemoBooster), which is for boosting any chemotherapy efficacy. Our new field the oncotherapy, and the first probe device has been appeared in 2010 (AndroTherm).

All the developments from the beginning had ideas of fractal physiology and such modulation!

Medical challenge: modulated electric field application

The start (1985-88) in the private flat ... The first – Electro cancer therapy (ECT)

Medical challenge: Non-invasive solution

The first non-invasive solution – Electro-hyperthermia (EHY)

Technical challenge: The electrode optimizing (electrode construction is a key element of the proper treatment!)

Technical challenge: The shielding & electromagnetic compatibility

Challenge with invasivity again – ICT

New medical challenge: distant metastases – whole body hyperthermia (WBH)

The extreme solution

Laboratory needs (LabEHY)

The moderate (lower) solution (MWB)

Revolutionary solution for distant metastases – multilocal treatment

New medical challenges:

Personalization of other therapies (Booster)

Andrology requests

Medical challenge for intraluminar application

Conclusion

Oncotherm company and its method is based on stable scientific, medical and technical knowledge with specially developed details for the actual tasks in every devices. Our long time expertise made possible developing a completely new technology and reaching the present status: Oncothermia is maturated for acceptance!