Henry Ford Hospital Medical Journal

Vol 29, No 1, 1981
ISSN 0018-0416

CLINICAL HYPERTHERMIA TODAY

Hyperthermia 5
FK Storm, MD

Clinical Thermoradiotherapy 10
HI Bicher, MD, PhD
TS Sandhu, PhD
FW Hetzel, PhD

Local Microwave Hyperthermia in Cancer Therapy 16
CA Perez, MD
W Kopecky, PhD
R Baglan, MD
DV Rao, MD
R Johnson, MD

Clinical Hyperthermia and Irradiation 24
J Fazekas, MD
T Nerlinger, BS

Microwave Hyperthermia at 2450 and 915 MHz Frequencies 28
KH Luk, MD

Hyperthermia Perfusion 16 Years After its First Clinical Applications 32
R Cavaliere
G Moricca
F Di Filippo
L Aloe
G Monticelli
FS Sartori

Local Hyperthermia and Radiation 37
G Arcangeli, MD
A Cividalli, DSc

Glucose Metabolism in Mouse Tumor and Liver With and Without Hyperthermia 41
C Streffer
S Hengstebbeck
P Tamulevicius

Hyperthermia Treatment of Experimental Tumors 45
J Denekamp, PhD
SA Hill, PhD
FA Stewart, PhD
CLINICAL HYPERTHERMIA TODAY

Hyperthermia
FK Storm, MD

Clinical Thermoradiotherapy
HI Bicher, MD, PhD
TS Sandhu, PhD
FW Hetzel, PhD

Local Microwave Hyperthermia in Cancer Therapy
CA Perez, MD
W Kopecky, PhD
R Baglan, MD
DV Rao, MD
R Johnson, MD

Clinical Hyperthermia and Irradiation
J Fazekas, MD
T Nerlinger, BS

Microwave Hyperthermia at 2450 and 915 MHz Frequencies
KH Luk, MD

Hyperthermia Perfusion 16 Years After its First Clinical Applications
R Cavaliere
G Moricca
F Di Filippo
L Aloe
G Monticelli
FS Sartori

Local Hyperthermia and Radiation
G Arcangeli, MD
A Cividalli, DSc

Glucose Metabolism in Mouse Tumor and Liver With and Without Hyperthermia
C Streffer
S Hengstebeck
P Tamulevicius

Hyperthermia Treatment of Experimental Tumors
J Denekamp, PhD
SA Hill, PhD
FA Stewart, PhD

Guest Editors: Haim I. Bicher, MD, PhD
Fred W. Hetzel, PhD

Vol 29, No 1, 1981
ISSN 0018-0416
On the occasion of the opening of Henry Ford Hospital's Hyperthermia Clinic in June 1980, the first such clinic in North America, a symposium was held entitled "Clinical Hyperthermia Today." Invited to this opening and to the symposium were leaders from the Hospital and the local community, representatives of the federal government, and local area clinicians and researchers.

Many scientists involved in basic and clinical hyperthermia work throughout the world were also invited, and some of them agreed to speak at the symposium and present their current data on hyperthermia. These presentations were then collected and edited for special publication in this issue of the Henry Ford Hospital Medical Journal.* Representing clinical research, in addition to our own group at Henry Ford Hospital, were Drs. Storm, Perez, Fazekas, Luk, Cavaliere, and Arcangeli, while the more basic sciences were represented by Drs. Streffer and Denekamp. Each of the following papers presents its own view on the current status of clinical hyperthermia and describes how each individual research group has attempted to address specific problems in treating cancer with this new modality.

I thank all those who attended and participated in this symposium for their support.

Haim I. Bicher, MD, PhD
Director, Radiobiological Sciences and Hyperthermia Division

* The following technical terms are used throughout these papers:
Rad: unit of absorbed radiation dose (1 rad = 100 erg/gm absorbed)
1 Gy: new SI unit (Gray); 1 Gy = 100 rad
LET: linear energy transfer; a measure of energy deposited along the track of a radiation particle
OER: oxygen enhancement ratio; the ratio of cell killing under low oxygen conditions to that under normal oxygen conditions; for pure N\textsubscript{2} versus O\textsubscript{2}, OER~3.0
SER: skin enhancement ratio; a ratio that compares skin damage when heat is combined with radiation to that with radiation alone
TER: tumor enhancement ratio; a ratio that compares tumor response when heat is combined with radiation to that with radiation alone
TGF: Therapeutic gain factor; the ratio of TER to SER