

Study Of The Effects Of Half-body Irradiation on Bone Metastasis Of Breast Cancer

Thesis

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"رب أوزعني أن أشكر نعمتك
التي أنعمت علي و علي والدي
وأن أعمل صالحا ترضاه
وأدخلني برحمتك في عبادك
الصالحين"





TO MY DEAR FATHER,

MY FAMILY

&

AHMED, MY SON,

*who patiently awaited
the completion of this work*



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List Of Abbreviations

BMR	Bone marrow regeneration.
CA15.3	Cancer antigen 15.3.
cAMP	Cyclic adenosine ureno-phosphate.
CEA	Carcinoembryonic antigen.
CFU-E	Erythroid colony forming unit.
CNS	Central nervous system.
Co⁶⁰	Cobalt 60.
CT	Computerized tomography.
HBI	Half-body irradiation.
I.M.	Intramuscular.
LHBI	Lower half-body irradiation.
LHRH	Leutenizing hormone releasing hormone.
PC	Phosphatidylcholine.
REA	Reticuloendothelial system.
SAR	scatter air ratio.
SLD	Sublethal damage.
SSD	Source-skin distance.
TAA	Tumour associated antigen.
TAR	Tissue air ratio.
TBI	total body irradiation.
TMR	Tissue maximum ratio.
UHBI	Upper half-body irradiation.

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*Introduction
&
Aim Of Work*

Introduction & Aim of The Work

The locoregional therapy of carcinoma of the breast is still a problem in reaching long-term results. Spread by metastases can be expected in nearly 60% of all cases, thus, in order to relieve the symptoms of these female patients in their last period of life, symptomatic or palliative treatment has to be implemented (*Schorcht et al., 1984*).

The median length of survival after the diagnosis of recurrence of disease is about 2 years, but this span may range from a few months to three decades (*Paterson et al., 1980; Fey et al., 1981*).

In the treatment of breast cancer metastases, there is a role for all of the major modalities in the treatment of.

Surgery is often used to excise local recurrences, to drain pleural effusions, to ablate endocrine organs, or to decompress the spinal cord.

and to the disappearance of this particular complication (*Fryer et al., 1978; Salazar et al., 1978*).

Distinctive cytoreductive effects result from the single half-body irradiation and are followed by exceeding regenerations in irradiated parts of the bone marrow and compensational proliferations in non irradiated areas too (*Braynschweig et al., 1987*).

The aim of this work is to study the effects of Half body irradiation (HBI) on the pain relief and survival of the cancer breast patients with bone metastases and to study the effects of fractionated doses of half body irradiation and the comparison of its clinical results after single doses; as well as to study the associated immunological changes.

*Review
Of
Literature*