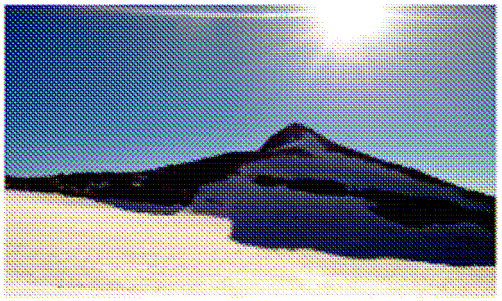
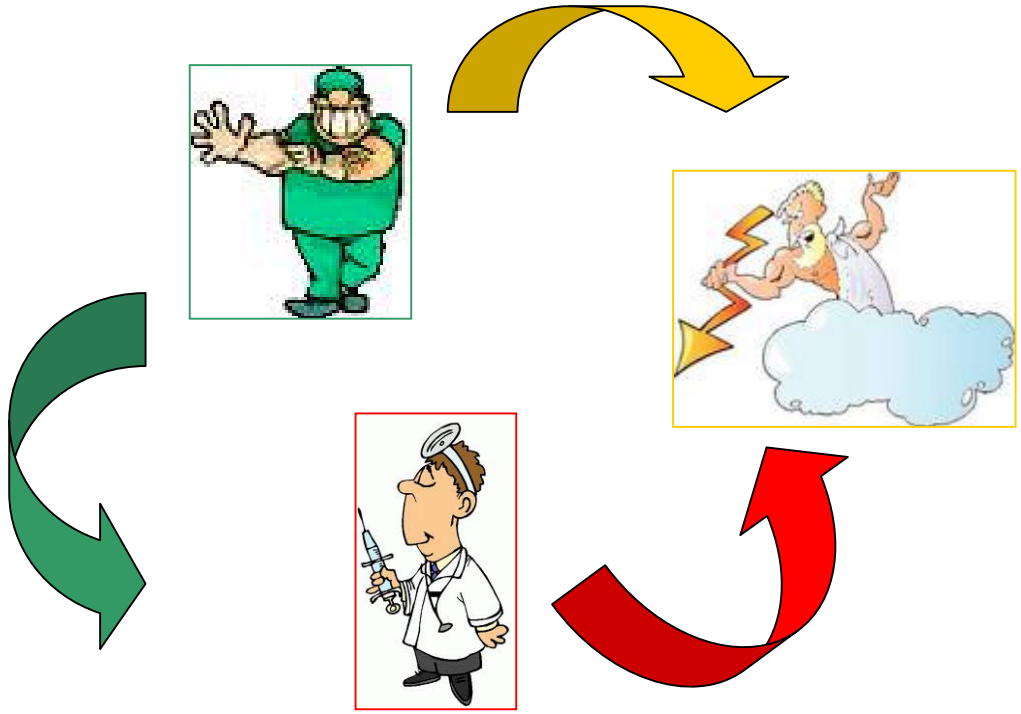
“Toxicity of Radiation/Drug Interactions: concomitant irradiation and taxanes: a Single Institution Experience”

L. Costa



Is it possible a concurrent treatment with chemotherapy and radiation therapy?



CLOSE COORDINATION

CMF CT and RTT

"*Concurrent administration of CMF CT and RT could be safe and might be reserved for pts at high risk of local recurrence*"

No increasing of hematologic toxicities and of radiation therapy toxicities

Phase III randomized study: G.Arcangeli et al IJBROBP 2006

Prospective trial: S Han et al J Surg Oncol 2007

Toledano et al JCO 2007 - L. Livi et al IJROBP 2008

FEC CT and RTT

Increasing risk of anthracycline cardiac toxicity in irradiated patients

Shapiro CL J Clin Oncol 1998

Concurrent doxorubicin or epirubicin + rtt could cause high incidence of severe skin reactions

Van Elvoirt RP Eur J Cancer 2000-Greget S Proc Am Soc Clin Oncol 2001

Concomitant RT with adjuvant FNC has significant better LRC in node positive breast cancer after BCS albeit with slightly more acute toxicity- PhIIIRT

J Rouesse' IJBROBP 2006- G. Calais 1997 Etudes ARCOSEIN 1997

Taxanes and RTT

1990s: the role of Taxanes in the management of advanced breast cancer

"The use of adjuvant paclitaxel after doxorubicin – based CT could result in prolonged delay in the start of RT after BCS "

"Delay in starting RT could be associated with statistically significantly increase rate of local recurrence and could reduce OS "

WF Hartsell Cancer 1995, TA Buchholz IJROBP 1993
N Ellerbroek The Breast J, 2003

Taxanes and RTT

In vitro and In vivo evidence: taxanes act with RT with additive or possibly synergistic mechanism

KA Mason Clin Cancer Res 1997 Zanelli GD Eur J Cancer 1997

Feasibility of concurrent treatment: adjuvant paclitaxel and RT

N Ellerbroek The Breast J, 2003

SC Formenti Semin Radiat Oncol 1999

Taxanes and RTT

Concurrent radiation Therapy and paclitaxel or docetaxel CT in high risk breast cancer

JR Bellon IJBROBP 2000

Acute and subacute Toxicity associated with concurrent adjuvant RT and paclitaxel in BC therapy

S. Semrau et al Strahlenther Onkol 2006

Y.M Hanna The Breast J 2002

AG Taghian J of NCI 2001

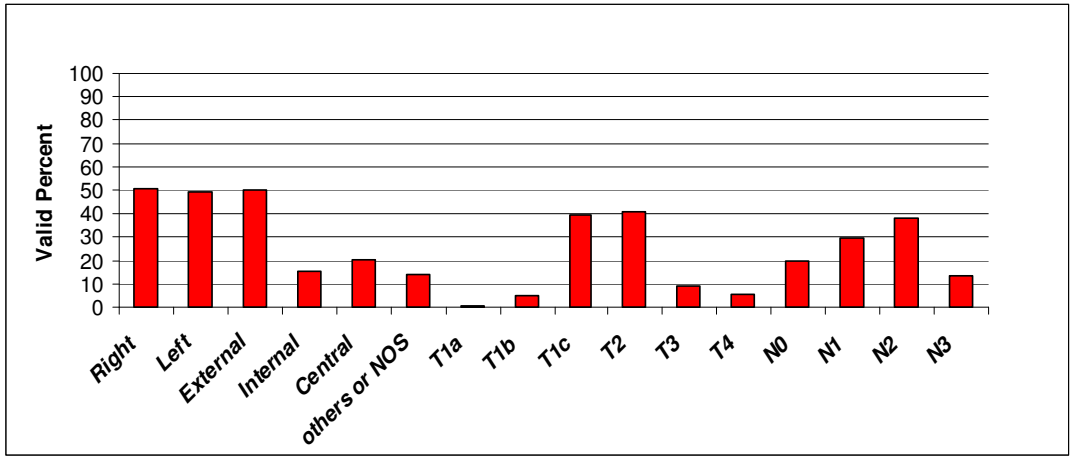
Aim of our study

Retrospective analysis of acute toxicity in 143 patients with low risk and high risk breast cancer treated postoperatively with concurrent RT and taxanes

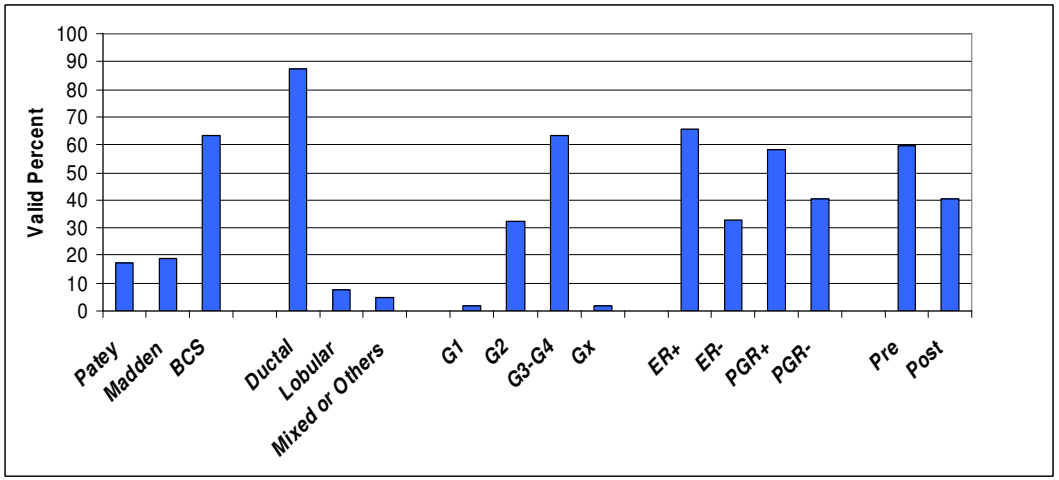
Patients Characteristics

143 pts

2004-June 2010 Istituto del Radio BS



T1 44%
T2 41%
N0 <20%

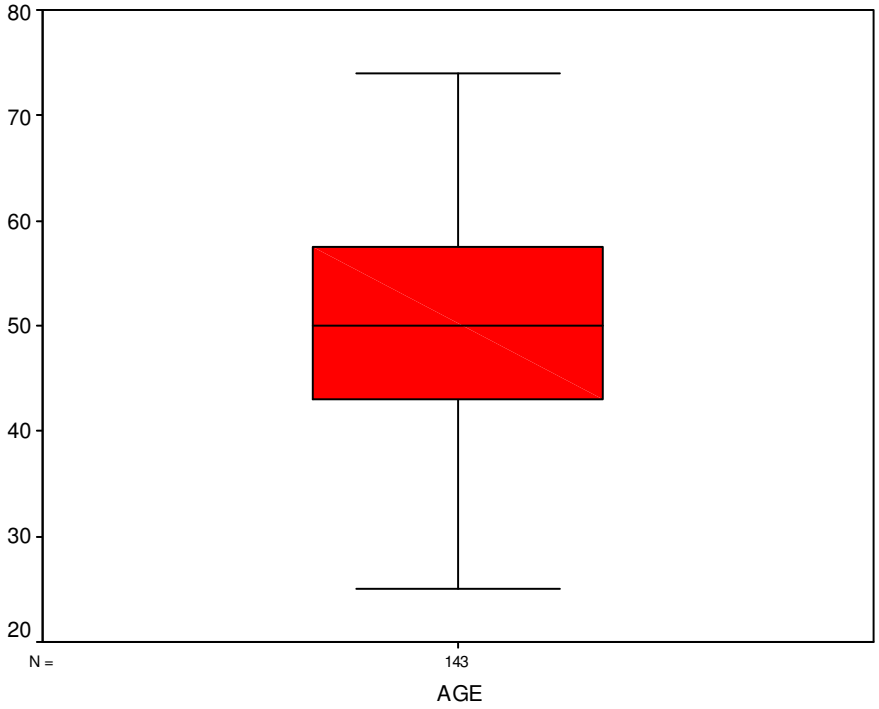


63% BCS
37% mastectomy

Ductal carcinomas 87%, G3 64%

Patients Characteristics

Mean Age 50 y (range 25-74y)

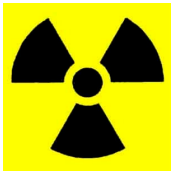


Treatment 1

CT was docetaxel scheduled every three weeks and generally following antracyclines administration

Hormones (AI, LHRH +/-tam, tam):30% pts

Treatment 2



Radiation therapy:

3D conformal treatment planning

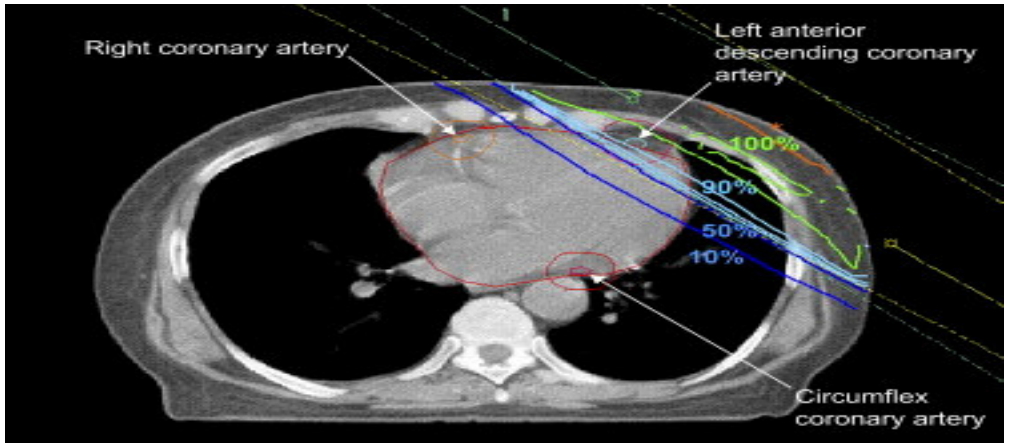
RT on chest wall or breast with tangential fields of Photons of 4-10 MV

50 Gy normofraction

10 Gy electrons boost in BCS

Nodal irradiation only in cases with at least 4 axillary N+

Treatment 3



Heart and lung inclusion were kept below *standard constraints*

Lung V20 Gy of tangential fields : 7,6% (range 2-24)

Results 1

68% of pts with skin toxicity G1

7% of pts with skin toxicity G3

Maximal acute skin toxicity ***G3*** **(RTOG scale)**

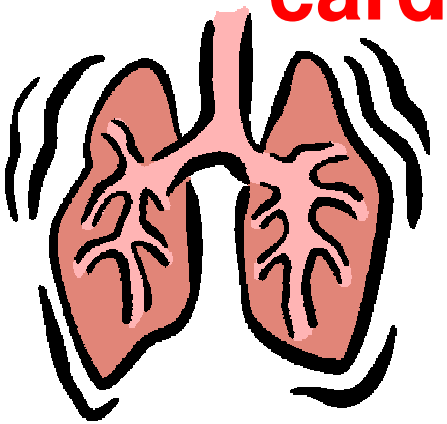
Mean dose of G1 34 Gy in BCS and 39 Gy in mastectomy (p=0.029)

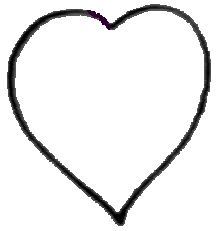
Difference in lower toxicity between BCS vs mastectomy related to inframammary fold doses

Results 2

No significant differences were detected in higher toxicity grade between BCS and mastectomy

No acute radiation pneumonitis or cardiac event was recorded





Results 3

Accetable Acute toxicity profile

Concomitant administration of RT and taxanes could reduce the time between surgery and irradiation with potential benefits in *high risk patients and maybe a better effect on QoL*

Conclusion

SC Formenti Semin Radiat Oncol 1999
JR Bellon IJBROBP 2000
A G Taghian J of NCI 2001
YM Hanna The Breast J 2002
N. Ellerbroek The Breast J 2003
S. Goble Surg Clin North Am 2003
HJ Burstein IJBROBP 2006
S Semi

Breast-Conserving Therapy with Adjuvant Paclitaxel and Radiation Therapy: Feasibility of Concurrent Treatment

Nancy Ellerbroek, MD,*‡ Silvana Martino, DO,† Beatrice Mautner, RN,‡ May Lin Tao, MD,†‡ Christopher Rose, MD,‡§ and Leslie Botnick, MD†‡

*Providence Holy Cross Cancer Center, Los Angeles, California, †John Wayne Cancer Institute, St. John's Health Center, Santa Monica, California, ‡Valley Radiotherapy Associates, Chatsworth, California, and §Providence St. Joseph Medical Center, Burbank, California

CLINICAL INVESTIGATION Breast

SMALL COHORTS 20-40PTS
FEASIBILITY
LOW ACUTE TOXICITY
SUGGESTING CAUTION AND ADDITIONAL TRIALS TO DEFINE OPTIMAL TIMING , LONG TERM TOXICITY AND POTENTIAL BENEFITS

Simon N. Powell

CLINICAL INVESTIGATION Breast

CONCURRENT RADIATION THERAPY AND PACLITAXEL OR DOCETAXEL CHEMOTHERAPY IN HIGH-RISK BREAST CANCER

Jennifer R. Bellon, M.D.,* Karen L. Lindsley, M.D.,* Georgiana K. Ellis, M.D.,† Julie R. Gralow, M.D.,† Robert B. Livingston, M.D.,† and Mary M. Austin Seymour, M.D.*

*Department of Radiation Oncology, and †Division of Medical Oncology, Department of Medicine, University of Washington Medical Center, Seattle, WA

Concurrent Radiotherapy and Taxane Chemotherapy in Patients with Locoregional Recurrence of Breast Cancer

A Retrospective Analysis

Sabine Semrau[1], Bernd Gerber[2], Toralf Reimer[2], Gunther Klautke[1], Rainer Fietkau[1]

Take-home message

Further analysis of this treatment scheduling

Accetable skin toxicity and no heart and lung injury

…a Single Institution Experience….

THANK YOU!