

Latest news in breast cancer radiation oncology

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1. Evidence Based Evolution of the Breast Cancer Radiotherapy (RT)

- * Efficacy: evidence based

Meta analyses: increased statistical power: one of the best databases in all oncology treatment with individual data for thousands of patients

- * Possible toxicity

2. Techniques to reduce the toxicity

- * Alternative techniques

- * Complex techniques with

respiratory control

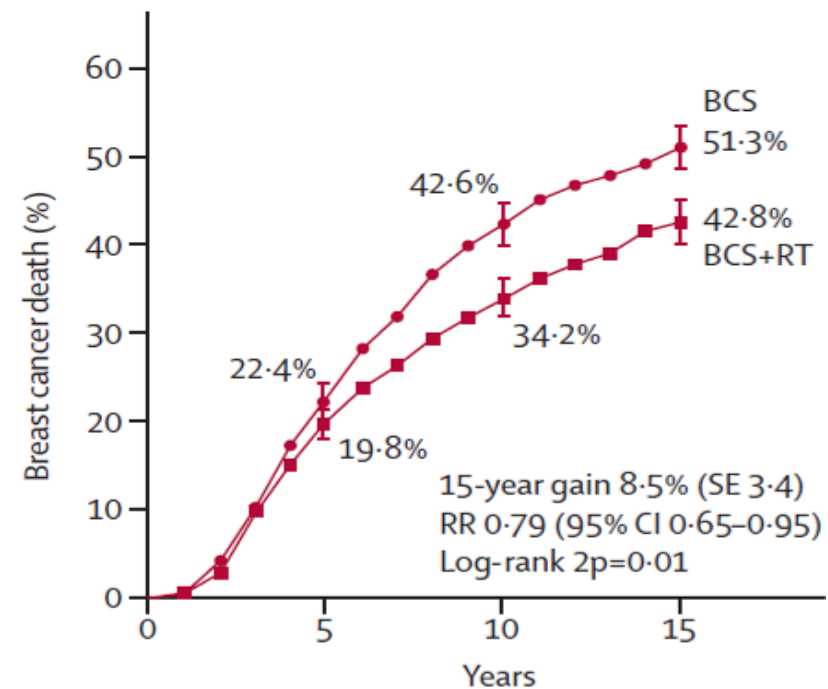
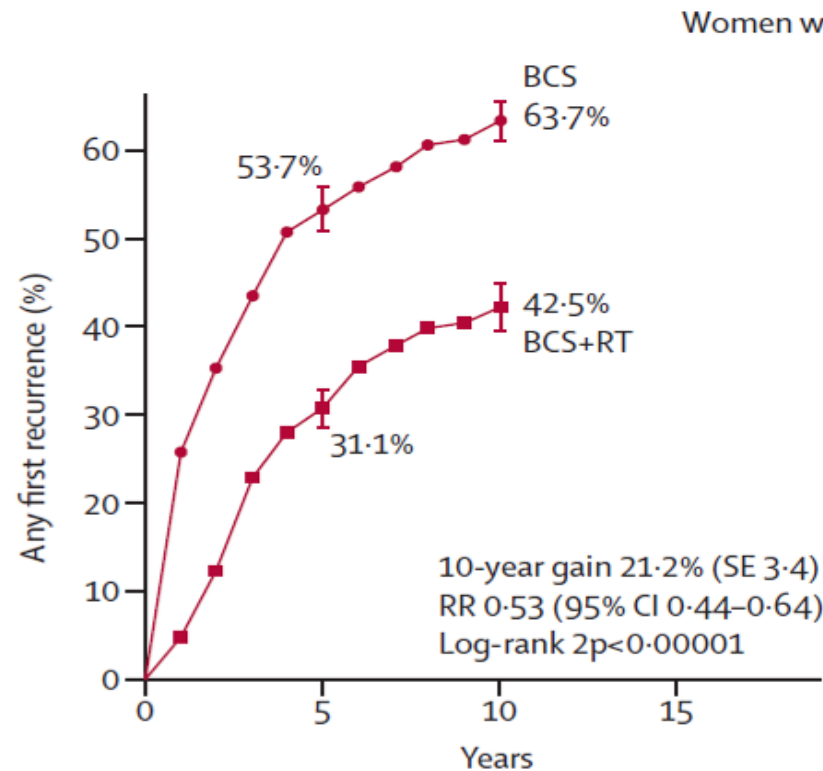
- * Protons

3. Future of the Breast Cancer Radiotherapy

Effect of radiotherapy after breast-conserving surgery on 10-year recurrence and 15-year breast cancer death: meta-analysis of individual patient data for 10 801 women in 17 randomised trials

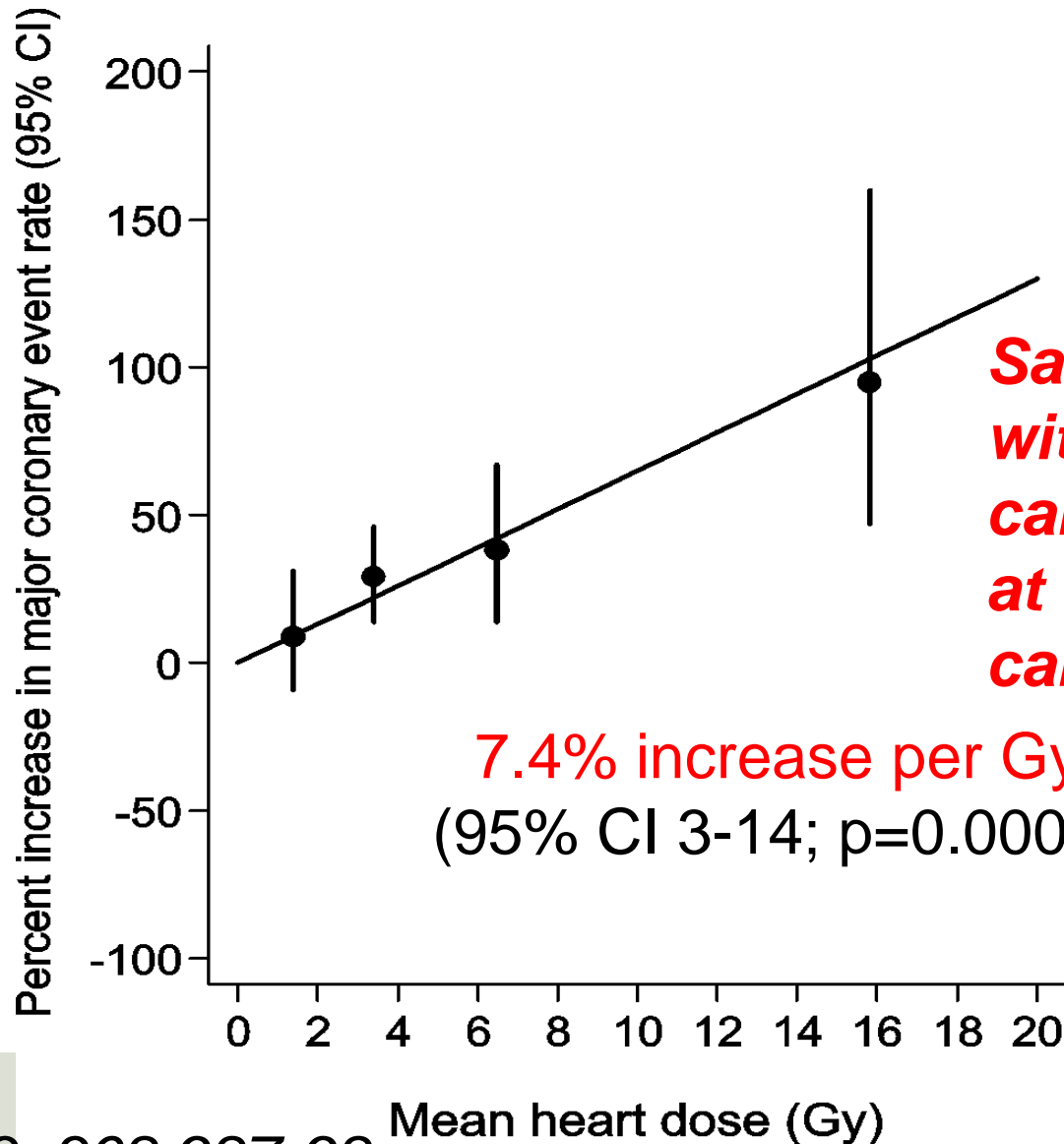
Early Breast Cancer Trialists' Collaborative Group (EBCTCG)*

Lancet 2011; 378: 1707-16



Radiation Associated Cardiac Events (RACE)

Dose-response relationship for major coronary events



Same slope for women with and without cardiac risk factors at time of breast cancer diagnosis

**7.4% increase per Gy
(95% CI 3-14; p=0.0001)**

Lateral Isocentrique RT: To avoid lung and heart irradiation

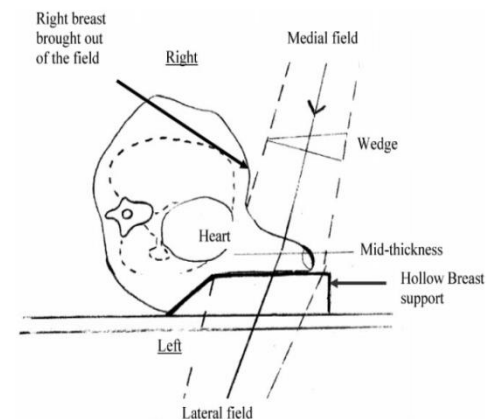


Figure 1. Schematic presentation of the isocentric lateral decubitus (ILD) technique for radiotherapy of the left breast.

786

The British Journal of Radiology, October 2006

E. Bronsart et al./Radiotherapy and Oncology 124 (2017) 214–219

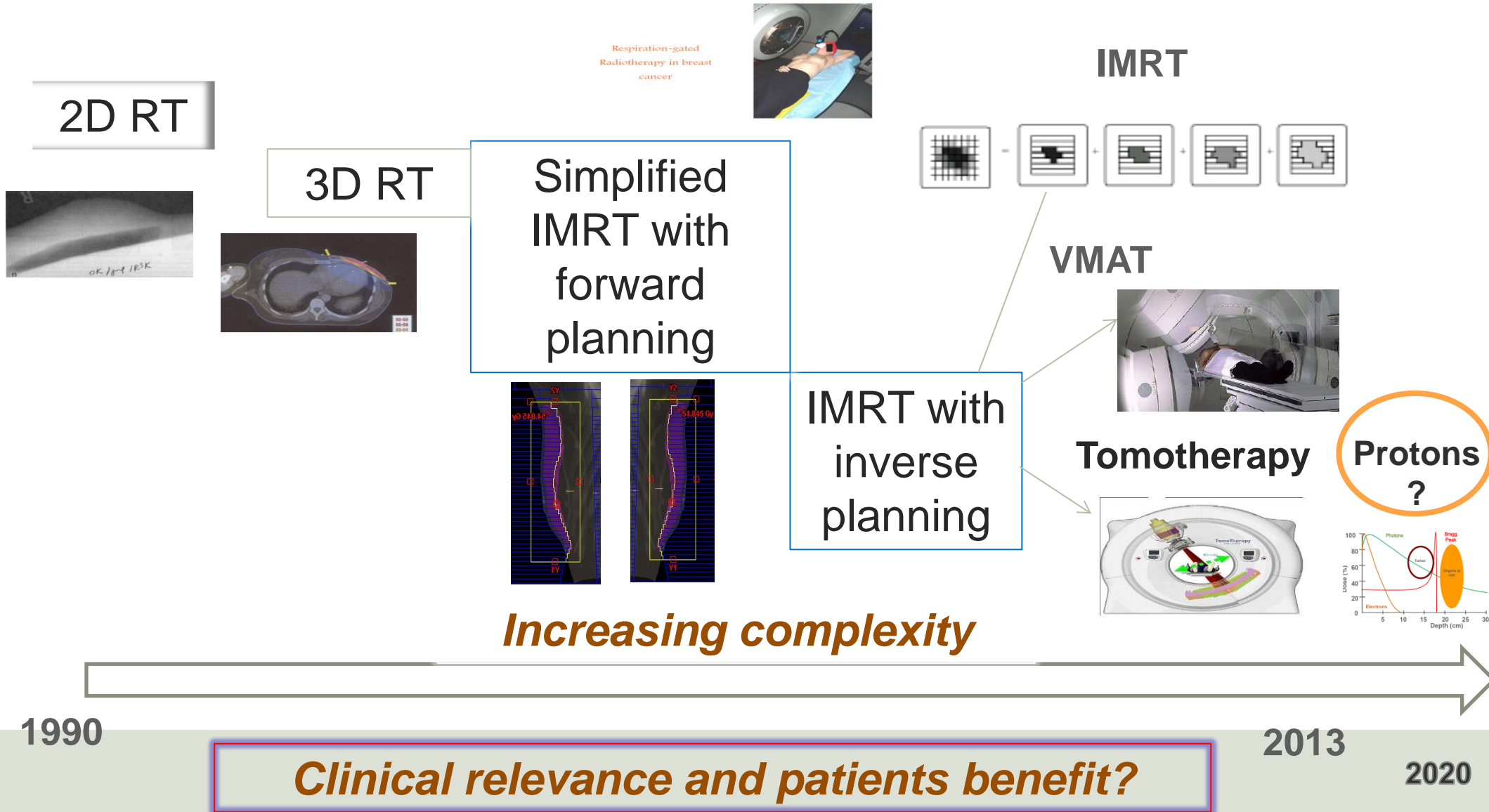
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Table 2
Dosimetric results.

Treatment regimen	Mean dose			
	28.5 Gy/5 fr	41.6 Gy/13 fr	40 Gy/15 fr	50 Gy + 16 Gy
<i>Right Breast</i>				
Ipsilateral lung	0.53	1	1.71	1.04
Contralateral lung	0	0.003	0.01	0.05
Heart	0.25	0.37	0.31	0.52
<i>Left Breast</i>				
Ipsilateral lung	0.45	0.94	1.55	2.43
Contralateral lung	0	0.05	0.12	0.13
Heart	0.5	0.9	0.92	1.53

- ▶ Fourquet et al. Radiother Oncol, 1991
- ▶ Campana et al. Int J Radiation Oncology Biol Phys, 2005
- ▶ Bollet et al. Br J Radiol, 2006
- ▶ Kirova et al. Int J Radiation Oncology Biol Phys, 2008
- ▶ Capezzali et al, Gl J Br Can Res, 2013
- ▶ Kirova et al, Radiother Oncol, 2014
- ▶ Bronsart et al, Radiother Oncol 2017

Emergence of new techniques in breast cancer RT with or without respiratory control



Future of the Breast Cancer Radiotherapy

- To propose to every patient the best treatment adapted to molecular type and stage of disease as well as the patients anatomy
- To avoid the long term toxicity and improve the quality of life
- To understand the mechanisms of radiation induced complications and propose preventive procedures
- To help to every patient to forget her disease

Thank you for your attention



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