



CANCER du SEIN chez la FEMME AGE

PLACE de la RADIOTHERAPIE



unic

Taux d'incidence estimé sur cancer du sein

Tx d'incidence pour 100 000 personnes-années (PA)

Classe d'age	2020	2021	2022	2023
[00;04]	0	0	0	0
[05;09]	0	0	0	0
[10;14]	0.1	0	0	0
[15;19]	0.3	0.3	0.3	0.3
[20;24]	2.3	2.3	2.4	2.5
[25;29]	12.4	12.4	12.4	12.5
[30;34]	41.2	41.7	42.4	43.1
[35;39]	91.9	93.2	94.5	96
[40;44]	157.3	157	156.9	157.1
[45;49]	256.5	258.2	259.1	259.3
[50;54]	287	289.4	291.8	294
[55;59]	262.9	261.9	260.9	260
[60;64]	313.5	309.9	306.4	302.9
[65;69]	376.4	373.2	370	367
[70;74]	431.4	438	445.1	452.2
[75;79]	373.6	382.3	391.5	400.1
[80;84]	346.2	350	353.9	357.6
[85;++]	311.6	311.5	311.6	311.6



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Classe d'âge	2020	2021	2022	2023	
[00;04]	0	0	0	0	
[05;09]	0	0	0	0	
[10;14]	1	1	1	1	
[15;19]	6	6	7	7	
[20;24]	42	44	46	48	
[25;29]	225	224	223	226	
[30;34]	833	836	842	844	
[35;39]	1930	1943	1959	1989	
[40;44]	3179	3245	3303	3338	
[45;49]				5302	
[50;54]				6530	
[55;59]				5703	
[60;64]	6549	6499	6453	6426	
[65;69]	7567	7478	7429	7384	
TOTAL 1	37901	37915	37860	37798	↘ 0.3%
[70;74]	8118	8486	8651	8770	
[75;79]	4548	4942	5560	6156	
[80;84]	3720	3633	3619	3675	
[85;++]	4767	4736	4780	4815	
TOTAL 2	21153	21797	22610	23416	↗ 10.7%
TOTAL 3	59054	59712	60470	61214	↗ 3.6%

12.149 deces en 2023

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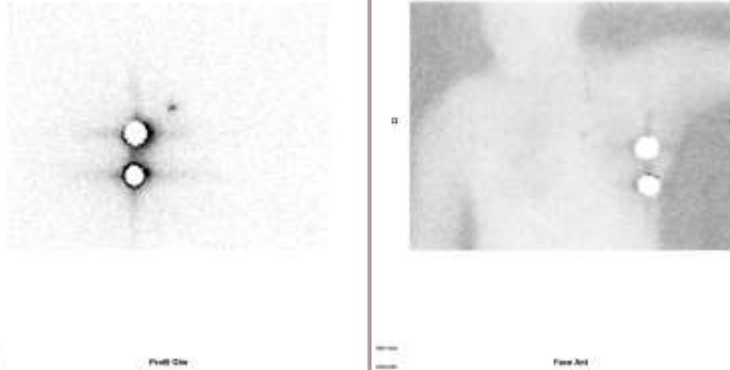


UDY OF
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- **CHIRURGIE CONSERVATRICE + GAS (si cN0)**
- **CHIRURGIE CONSERVATRICE + Curage Axillaire (si N+)**
- **MASTECTOMIE (si conservation mammaire impossible) + GAS (si cN0)**
- **MASTECTOMIE (si conservation mammaire impossible) + Curage Axillaire (si N+)**



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 *Lancet* 2011; 378: 1707-16

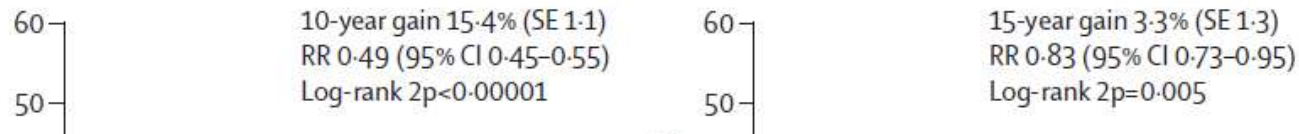
⇒ META-ANALYSIS

- **10 801 women** (essais avant 2000)
- **17 randomized** trials of RADIOTHERAPY versus no RADIOTHERAPY
- **8337 women** → node-negative (pN0) or node-positive (pN+)

⇒ RESULTS

- Median FU = 9.5 y
- **⬇ 10-year risk** of any (ie, **locoregional** or **distant**) first recurrence from 35.0% to 19.3% (**absolute reduction 15.7%**, 95% CI 13.7-17.7, 2p<0.00001)
- **⬇ 15-year risk of breast cancer death** from 25.2% to 21.4% (**absolute reduction 3.8%**, 1.6-6.0, 2p=0.00005)
- **⬇ 15-year absolute risk** in **all-cause mortality** was 3.0% (95% CI 0.6-5.4, 2p=0.03)

Women with pN0 disease (n=7287)

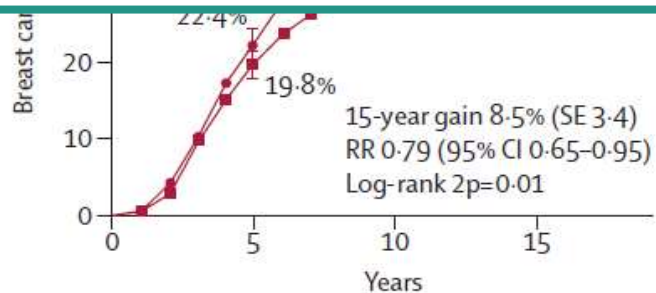
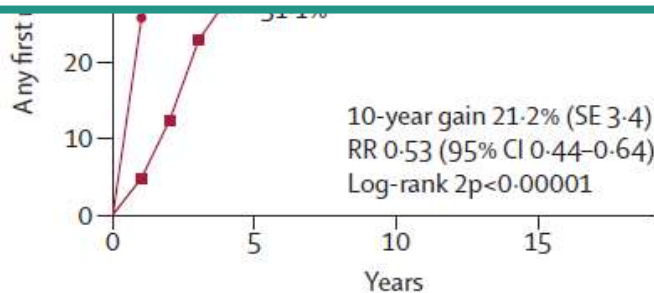


RADIOTHERAPY roughly HALVED the recurrence rate after breast-conserving surgery in a wide range of patients with very different absolute risks

Women with pN+ disease (n=1050)



Older patients are under-represented in clinical trials

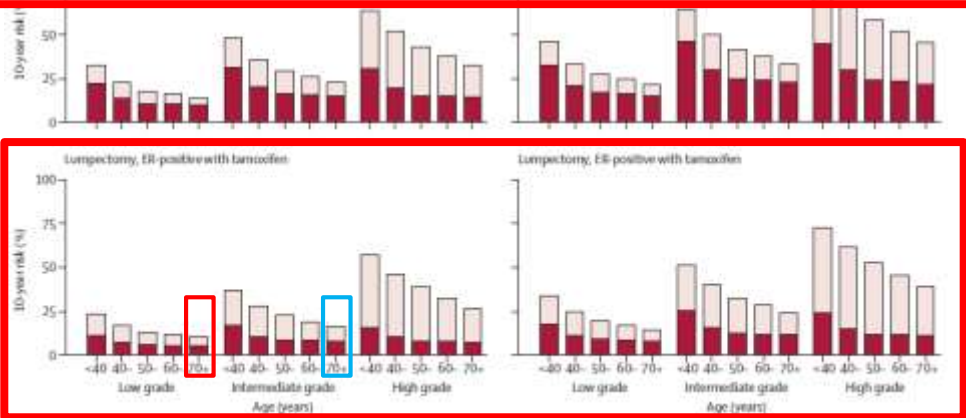




Absolute 10-year risks (%) of any (loco-regional or distant) first recurrence with and without RADIOTHERAPY (pN0)

T1 ou T2 ; ER +; TAM
 GRADE (low; intermediate ; high) / AGE

	Number allocated BCS+RT/BCS	10-year risk of a locoregional or distant recurrence (%)			Test for trend/heterogeneity in absolute reduction	
		BCS+RT	BCS	Absolute reduction with RT (95% CI)	2p unadjusted*	2p adjusted*
(a) Entry age (years)					<0.00001	0.0002
<40	189/174	36.1	60.7	24.6 (13.2 to 36.0)		
40-49	576/582	20.8	41.4	20.6 (15.1 to 26.1)		
50-59	1093/1028	15.0	29.7	14.7 (10.8 to 18.6)		
60-69	1138/1167	14.2	28.3	14.1 (10.4 to 17.8)		
70+	679/661	8.8	17.7	8.9 (4.0 to 13.8)		



- Lumpectomy
- T ≤ 2 cm
- Low/Intermediate grade
- > 70 yo
- ER positive with TAMOXIFENE



Lumpectomy plus Tamoxifen with or without Irradiation in Women 70 Years of Age or Older with Early Breast Cancer

Kevin S. Hughes, M.D., Lauren A. Schnaper, M.D., Donald Berry, Ph.D.,
Constance Cirrincione, M.S., Beryl McCormick, M.D., Brenda Shank, M.D., Ph.D.,
Judith Wheeler, B.A., Lorraine A. Champion, M.B., Ch.B., Thomas J. Smith, M.D.,
Barbara L. Smith, M.D., Ph.D., Charles Shapiro, M.D., Hyman B. Muss, M.D.,
Eric Winer, M.D., Clifford Hudis, M.D., William Wood, M.D.,
David Sugarbaker, M.D., I. Craig Henderson, M.D., and Larry Norton, M.D.,
for the Cancer and Leukemia Group B, Radiation Therapy Oncology Group,
and Eastern Cooperative Oncology Group
N Engl J Med 2004;351:971-7.

Breast-conserving surgery with or without irradiation in women aged 65 years or older with early breast cancer (PRIME II): a randomised controlled trial

Ian H Kunkler, Linda J Williams, Wilma J L Jack, David A Cameron, J Michael Dixon, on behalf of the PRIME II investigators

Lancet Oncol 2015; 16: 266-73

Lumpectomy Plus Tamoxifen With or Without Irradiation in Women Age 70 Years or Older With Early Breast Cancer: Long-Term Follow-Up of CALGB 9343

*Kevin S. Hughes, Lauren A. Schnaper, Jennifer R. Bellon, Constance T. Cirrincione, Donald A. Berry,
Beryl McCormick, Hyman B. Muss, Barbara L. Smith, Clifford A. Hudis, Eric P. Winer, and William C. Wood*

J Clin Oncol 31:2382-2387. © 2013

Breast-Conserving Surgery with or without Irradiation in Early Breast Cancer

*Ian H. Kunkler, M.B., B.Chir., Linda J. Williams, Ph.D., Wilma J.L. Jack, M.B., Ch.B., David A. Cameron, M.D.,
and J. Michael Dixon, M.D.*

N Engl J Med 2023;388:585-94.

Table 1. Baseline Characteristics of the 636 Women.

Characteristic	Tamoxifen + Irradiation (N=317)	Tamoxifen (N=319)
	<i>no. of women (%)</i>	
Stratification		
Age		
70–74 yr	139 (44)	146 (46)
≥75 yr	178 (56)	173 (54)
Axillary dissection		
No	200 (63)	204 (64)
Yes	117 (37)	115 (36)
Demographic		
Race or ethnic group*		
White	287 (91)	287 (90)
Hispanic	5 (2)	8 (2)
Black	23 (7)	22 (7)
Asian	0	2 (1)
Other	1 (<1)	0
Unknown	1 (<1)	0
Estrogen-receptor status		
Negative	6 (2)	4 (1)
Positive	308 (97)	310 (97)
Unknown	3 (1)	5 (2)
Progesterone-receptor status		
Negative	56 (18)	67 (21)
Positive	251 (79)	245 (77)
Unknown	10 (3)	7 (2)
Size of primary tumor		
≤2 cm	312 (98)	310 (97)
>2 cm	5 (2)	9 (3)

⇒ RANDOMIZED TRIAL

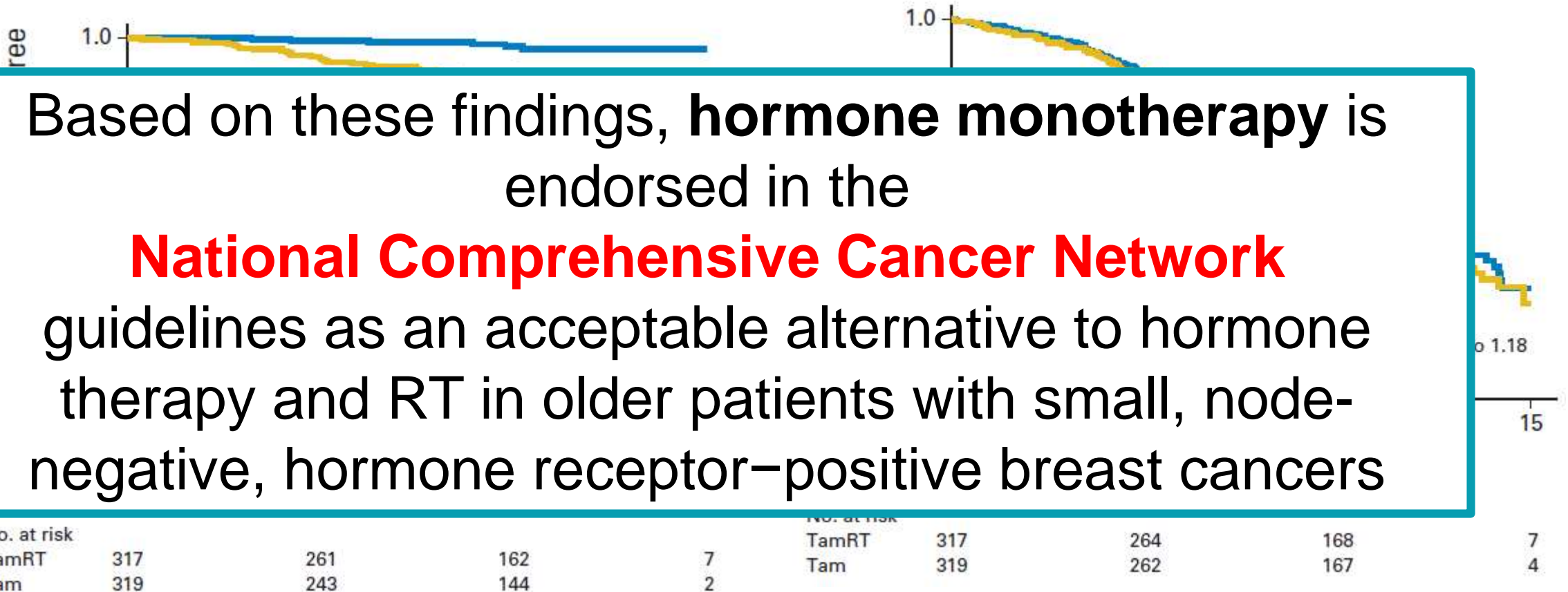
- T1 (≤ 2 cm)N0M0 ; (ER) positive ; lumpectomy
- RT (45 Gy/25F + 14 Gy/8F) + TAM (**TAMRT**) vs **TAM**
- Primary Objective : time to local or regional recurrence (TLRR)
- **317 patients (TAMRT) vs 319 patients (TAM)**

⇒ RESULTS

10% → 2%

- Median FU = 12.6 y
- **10-year TLRR = 98%** (95% CI 96%-99%) in the **TAMRT** vs **90%** (95% CI 85%-93%) in the **TAM**
- **10-year OS 67%** (95% CI, 62%-72%) and **66%** (95% CI, 61%-71%)

Only 6,3% of all deaths were attributed to breast cancer



Based on these findings, **hormone monotherapy** is endorsed in the **National Comprehensive Cancer Network** guidelines as an acceptable alternative to hormone therapy and RT in older patients with small, node-negative, hormone receptor-positive breast cancers

Discontinuation ranged **from 31–73%**, measured at the end of 5 years of treatment.

→ **Extremes of age** (older or younger)

The EBCTCG meta-analysis (Lancet 2021) of 20 clinical trials of **TAMOXIFENE** versus placebo involving 10,645 women with estrogen receptor–positive disease, **only 302 women (2.8%) were age ≥ 70 years.**

→ Treatment side effects

Radiation Without Endocrine Therapy in Older Women With Stage I Estrogen-Receptor-Positive Breast Cancer is Not Associated With a Higher Risk of Second Breast Cancer Events

Gerber, et al; IJROBP 2021

⇒ RETROSPECTIVE STUDY

→ 2007 to 2012 : (SEER)-Medicare data: **13.321 women** ; **≥ 66 yo**

→ Stage I ER+ breast cancer ; breast-conserving surgery

→ Patients classified into 4 groups: (1) **ET + RT** (reference); (2) **ET alone**; (3) **RT alone**;

⇒ RESULTS

Only 10% of all deaths were attributed to breast cancer

→ **44% (5750) ET + RT, 41% (5500) RT alone, 6.0% (875) ET alone, 6.0% (1150) NT**

→ SBCE : IBTR, CBC, and DM

▪ **2.2% ET + RT, 3.0% RT alone, 3.2% ET alone, 7.0% NT**

→ **NT** and **ET** ↗ SBCE vs **ET + RT**, (NT: SHR, 3.7, $p < .001$) ; (ET alone (SHR, 2.2, $p = .008$))

→ **RT alone** was not associated with a higher SBCE (SHR 1.21; $P = .137$)

→ Patients age **80-85 yo** vs **66-69 yo** more likely to receive NT (odds ratio [OR], 8.9), RT (OR, 1.9), or ET (OR, 8.8) versus ET + RT ($P < .01$)

RECURRENCE RATES AFTER TREATMENT OF BREAST CANCER WITH STANDARD RADIOTHERAPY WITH OR WITHOUT ADDITIONAL RADIATION

HARRY BARTELINK, M.D., PH.D., JEAN-CLAUDE HORIOT, M.D., PH.D., PHILIP POORTMANS, M.D.,
HENK STRUIKMANS, M.D., PH.D., WALTER VAN DEN BOGAERT, M.D., PH.D., ISABELLE BARILLOT, M.D.,
ALAIN FOURQUET, M.D., JACQUES BORGER, M.D., PH.D., JOS JAGER, M.D., PH.D., WILLEM HOOGENRAAD, M.D.,
LAURENCE COLLETTE, M.Sc., AND MARIANNE PIERART, M.Sc., FOR THE EUROPEAN ORGANIZATION FOR RESEARCH
AND TREATMENT OF CANCER RADIOTHERAPY AND BREAST CANCER GROUPS
N Engl J Med 2001;345:1378-87.

Whole-breast irradiation with or without a boost for patients treated with breast-conserving surgery for early breast cancer: 20-year follow-up of a randomised phase 3 trial

Harry Bartelink, Philippe Maingon, Philip Poortmans, Caroline Weltens, Alain Fourquet, Jos Jager, Dominic Schinagl, Bing Oei, Carla Rodenhuis, Jean-Claude Horiot, Henk Struikmans, Erik Van Limbergen, Youlia Kirova, Paula Elkhuisen, Rudolf Bongartz, Raymond Miralbell, David Morgan, Jean-Bernard Dubois, Vincent Remouchamps, René-Olivier Mirimanoff, Sandra Collette, Laurence Collette; on behalf of the European Organisation for Research and Treatment of Cancer Radiation Oncology and Breast Cancer Groups Lancet Oncol 2015; 16: 47-56

⇒ RANDOMIZED TRIAL

→ Stage I-II

→ Primary Objective : OS

→ **2657 patients** no radiation boost (50 Gy/25F) vs **2661 patients** a radiation boost (50 Gy/25 F → 16 Gy/8F)

⇒ RESULTS

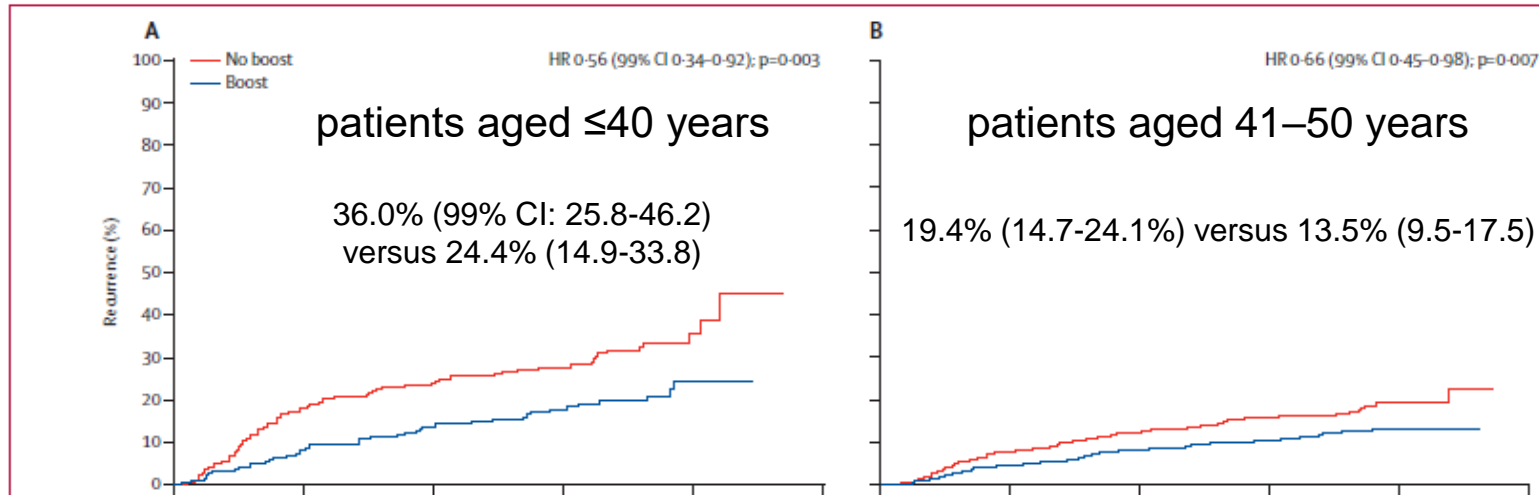
→ Median FU = 17.2 y

→ **20-year OS = 59.7%** (99% CI 56.3-63.0) in the boost group vs **61.1%** (99%CI 57.6–64.3) in the no boost group, hazard ratio (HR) 1.05 (99% CI 0.92-1.19, p=0.323)

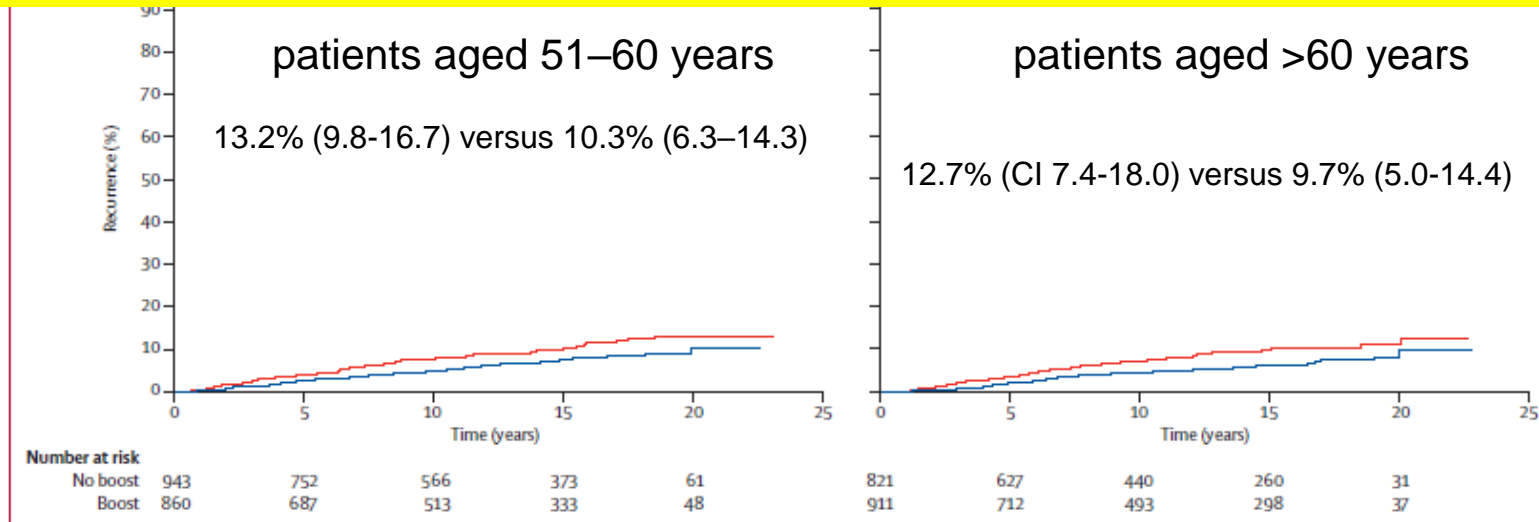
→ **20-year cumulative incidence of ipsilateral breast tumour recurrence 16.4%** (99% CI 14.1-18.8) in the no boost group versus **12.0%** (9.8-14.4) in the boost group

→ **20-year cumulative incidence of severe fibrosis 1.8%** (99% CI 1.1-2.5) in the no boost group versus **5.2%** (99% CI 3.9-6.4) in the boost group (p<0.0001)

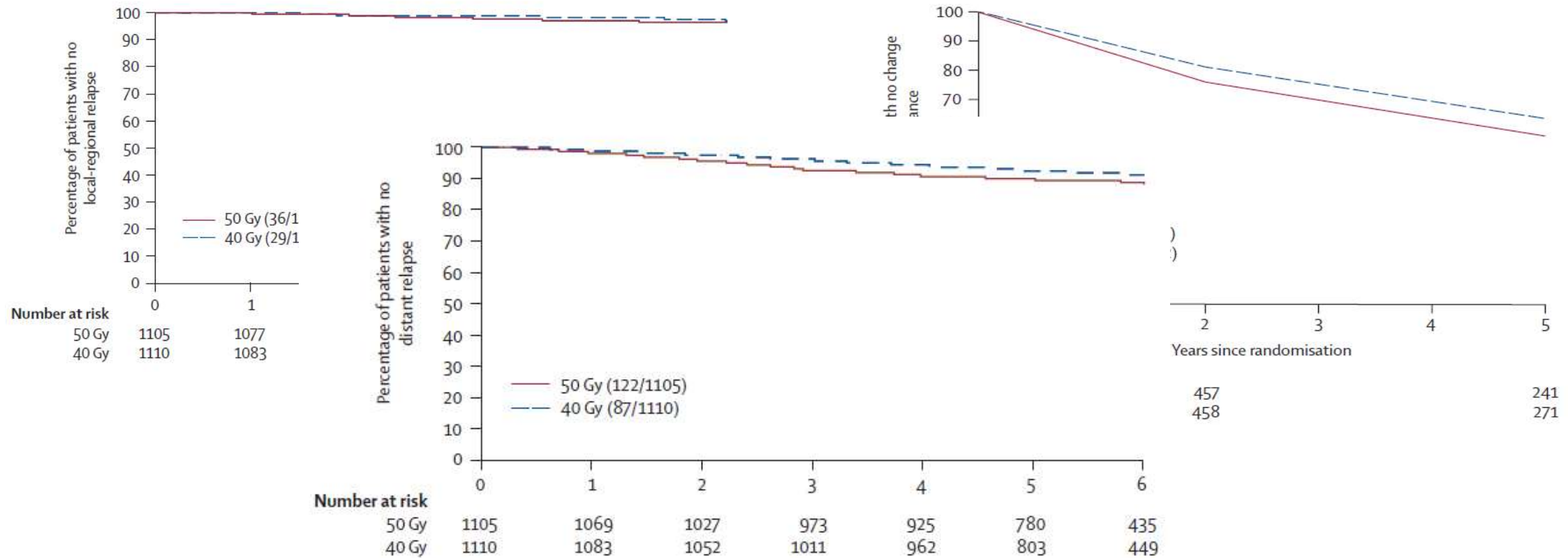
Cumulative incidence of ipsilateral breast tumour recurrence by age



The extra radiation dose can be avoided in most patients older than age 60 years.



The UK Standardisation of Breast Radiotherapy (START) Trial B of radiotherapy hypofractionation for treatment of early breast cancer: a randomised trial → 50 Gy/25 F vs 40,05 Gy/15F



Hypofractionated breast radiotherapy for 1 week versus 3 weeks (FAST-Forward): 5-year efficacy and late normal tissue effects results from a multicentre, non-inferiority, randomised, phase 3 trial

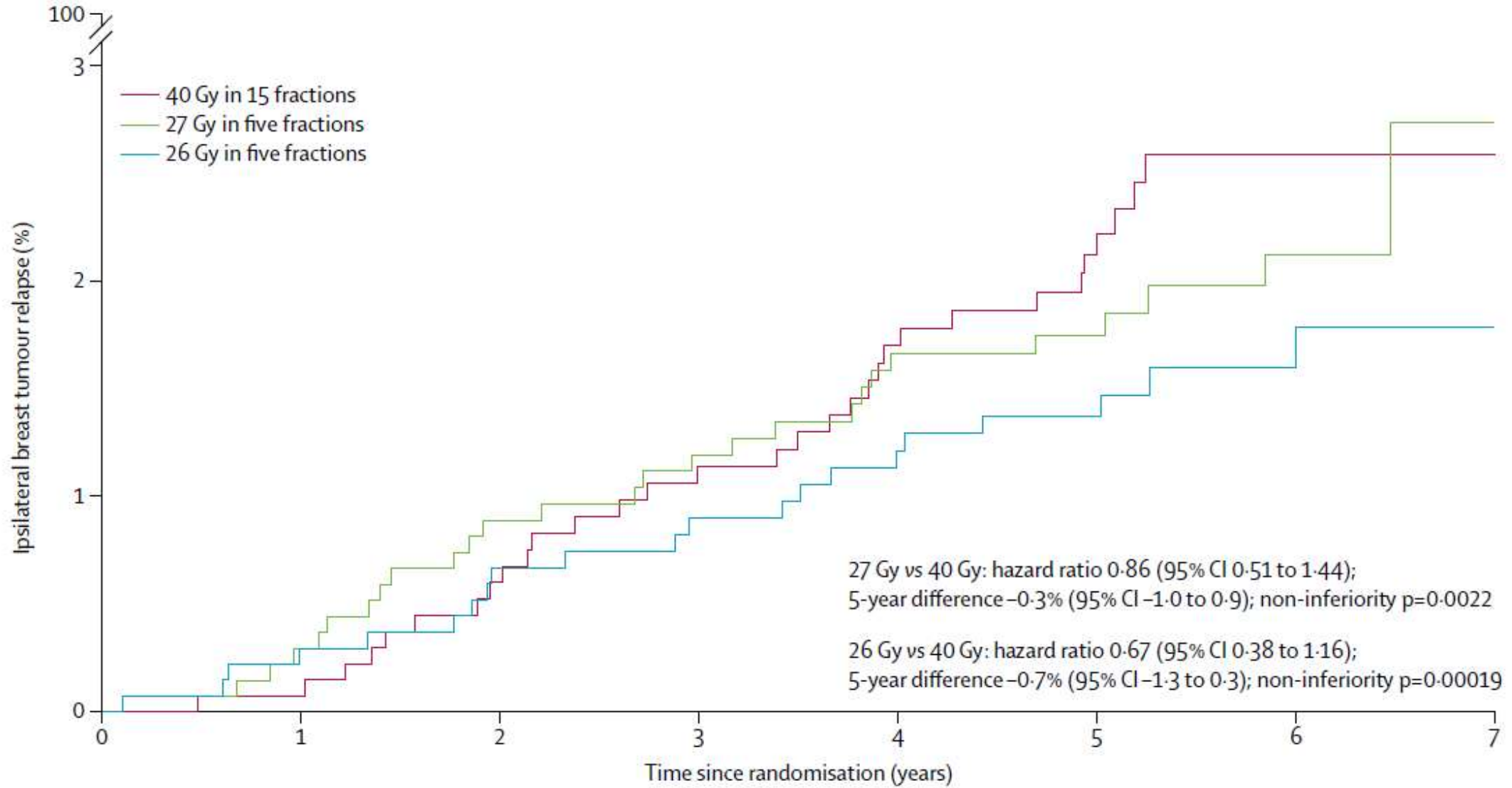
➡ 40.05 Gy/15 F vs 27 Gy/5F vs 26 Gy/5 F

⇒ NON I




	40 Gy in 15 fractions (n=1361)	27 Gy in five fractions (n=1367)	26 Gy in five fractions (n=1368)
Age, years			
Median (IQR)	60 (53-66)	61 (53-67)	61 (52-66)
Range	29-89	25-90	25-89
⇒ RESU			
<40	12 (0.9%)	16 (1.2%)	28 (2.0%)
40-49	186 (13.7%)	173 (12.7%)	189 (13.8%)
50-59	440 (32.3%)	423 (30.9%)	414 (30.3%)
60-69	506 (37.2%)	511 (37.4%)	524 (38.3%)
70-79	175 (12.9%)	197 (14.4%)	172 (12.6%)
≥80	42 (3.1%)	47 (3.4%)	41 (3.0%)

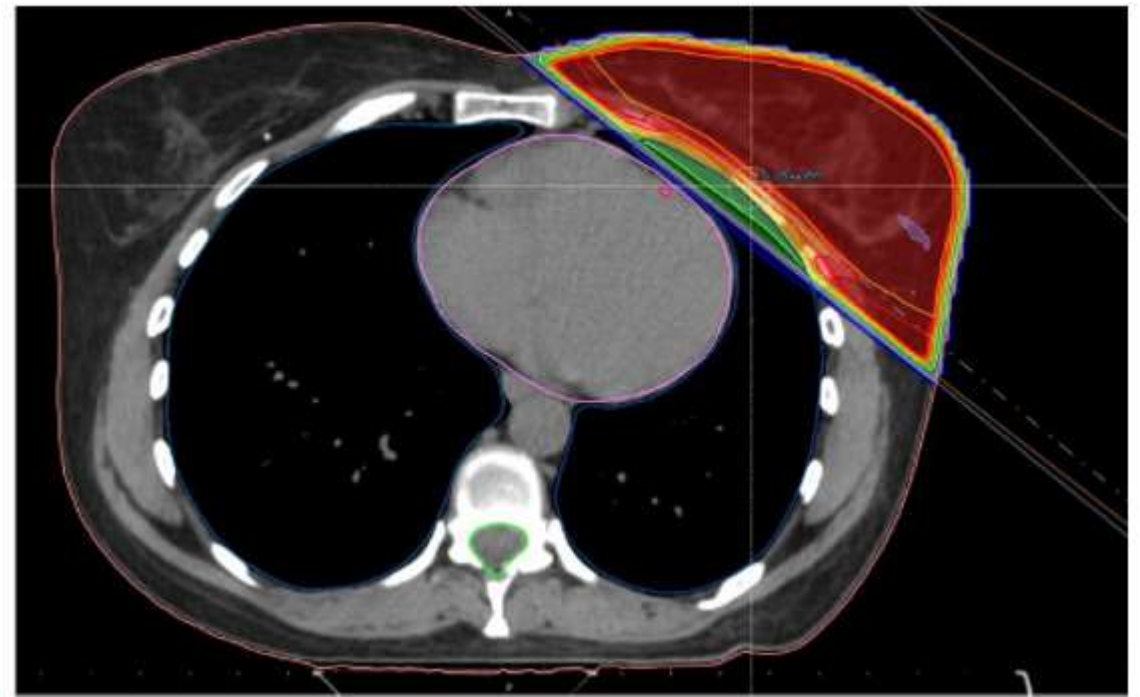
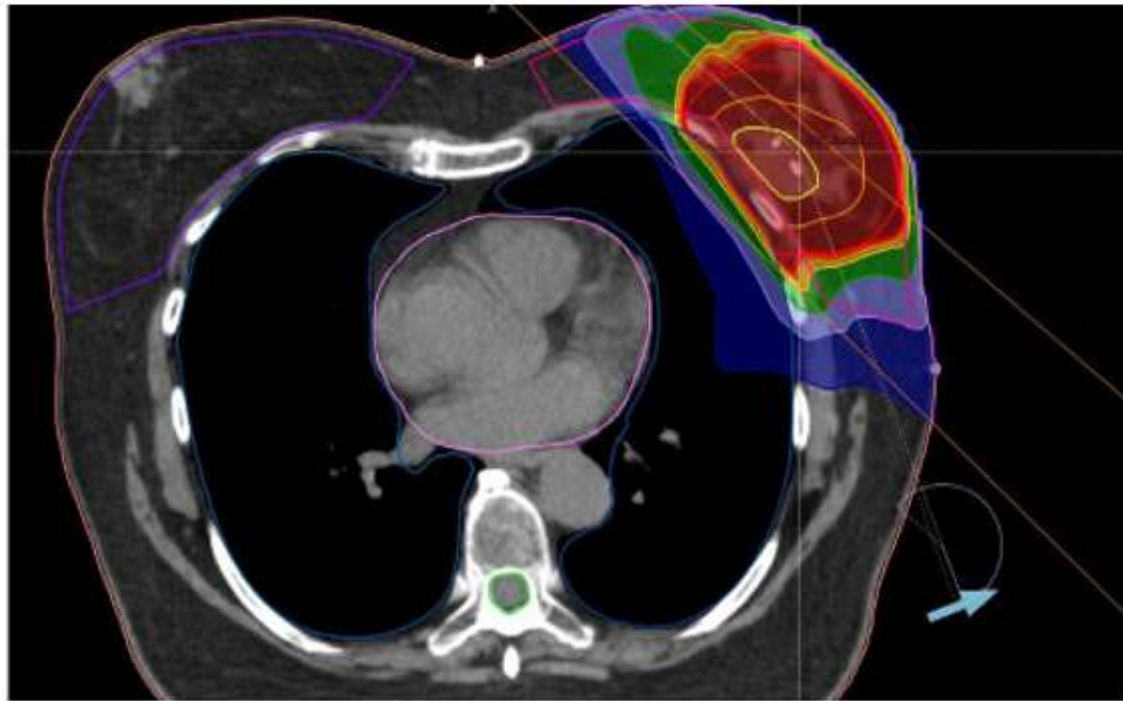
o 3,1) ; 1.7%

normal tissue patients, 155 6 Gy patients



Partial breast irradiation compared with whole breast irradiation: a systematic review and meta-analysis

Dean A. Shumway , MD,^{1,2,†,*} Kimberly S. Corbin, MD,^{1,2,†} Magdoleen H. Farah, MBBS,^{1,3} Kelly E. Viola, MPS,^{1,3} Tarek Nayfeh , MD,^{1,3} Samer Saadi, MD,^{1,3} Vishal Shah, MD,^{1,3} Bashar Hasan, MD,^{1,3} Sahrish Shah, MBBS,^{1,3} Khaled Mohammed, MBBCH,¹ Irbaz Bin Riaz, MBBS, MS,¹ Larry I. Prokon, M.I.S.,⁴ M. Hassan Murad , MD, MPH,^{1,3} Zhen Wang, PhD^{1,3,5} *JNCI: Journal of the National Cancer Institute*, 2023, **115**(9), 1011–1019





⇒ MATA-ANALYSIS

→ **14 randomized clinical trials** and 6 comparative observational studies

→ **17 234 patients**

⇒ RESULTS

→ Median FU = 17.2 y

→ **PBI** was not statistically significantly different from **WBI** for IBR at 5 years (RR = 1.34, 95% CI = 0.83 to 2.18; high strength of evidence [SOE]) and 10 years (RR = 1.29, 95% CI = 0.87 to 1.91; high SOE).

→ Evidence for cosmetic outcomes was insufficient.

→ Statistically significantly **fewer acute AEs** were reported with PBI compared with WBI

→ no statistically significant difference **in late AEs**

Partial-breast radiotherapy after breast conservation surgery for patients with early breast cancer (UK IMPORT LOW trial): 5-year results from a multicentre, randomised, controlled, phase 3, non-inferiority trial Lancet 2017; 390: 1048–60

- Age \geq 50 years.
- Primary breast conservation surgery +/- adjuvant systemic therapy.
- Pathological tumour size \leq 3.0 cm
- Invasive adenocarcinoma (excluding invasive carcinoma of classical lobular type).
- Unifocal disease.
- Grade I, II or III.
- Axillary lymph nodes negative or 1 to 3 nodes positive (pN0 or pN+(1-3))
- Minimum microscopic margin of non-cancerous tissue \geq 2 mm

	Recommendation	Evidence (refs)
Early-stage invasive breast cancer*		
1. PBI is recommended for patients with early-stage invasive breast cancer with all of the following factors: <ul style="list-style-type: none"> • Grade 1-2 disease • ER-positive histology • Age \geq40 years • Tumor size \leq2 cm 	Strong	<div style="border: 2px solid red; padding: 5px; display: inline-block;">High (for grade, histology, & age \geq50 years)</div> Moderate (for age 40-49 years & size)

European Society for Radiotherapy and Oncology Advisory Committee in Radiation Oncology Practice consensus recommendations on patient selection and dose and fractionation for external beam radiotherapy in early breast cancer

Icro Meattini, Carlotta Becherini, Liesbeth Boersma, Orit Kaidar-Person, Gustavo Nader Marta, Angel Montero, Birgitte Vrou Offeren, Marianne C Aznar, Claus Belka, Adrian Murray Brunt, Samantha Dicunzo, Pierfrancesco Franco, Mechthild Krause, Mairead MacKenzie, Tanja Marinko, Livia Marrazzo, Ivica Ratoso, Astrid Scholten, Elżbieta Senkus, Hilary Stobart, Philip Poortmans*, Charlotte E Coles* *Lancet Oncol* 2022; 23: e21–31

1. Whole breast irradiation

- a Moderate hypofractionated whole breast irradiation should be offered regardless of age at breast cancer diagnosis, pathological tumour stage, breast cancer biology, surgical margins status, tumour bed boost, breast size, invasive or pre-invasive ductal carcinoma in situ (DCIS) disease, oncoplastic breast conserving surgery, and use of systemic therapy
- b Ultrahypofractionated (26 Gy in five fractions) whole breast irradiation can be offered as (1) standard of care or (2) within a randomised controlled trial or prospective registration cohort

4. Partial breast irradiation-patient selection for external beam radiotherapy

Low risk-features suitable for partial breast irradiation are: luminal-like subtypes small tumour (≤ 3 cm), absence of lymph vascular space invasion, non-lobular invasive carcinoma, tumour grade 1–2, low-to-intermediate grade DCIS (sized ≤ 2.5 cm with clear surgical margins ≥ 3 mm), age at diagnosis 50 years or more, unicentric or unifocal lesion, clear surgical margins (>2 mm), node negative (including isolated tumour cells), and no use of primary systemic therapy and neoadjuvant chemotherapy

5. Partial breast irradiation-dose and fractionation

- a Moderate hypofractionation (40 Gy in 15 fractions) and ultrahypofractionation (26–30 Gy in five fractions) represent acceptable schedules for external beam partial breast irradiation
- b Twice a day external beam partial breast irradiation dose and fractionations similar to those used in the RAPID trial should not be offered


Single-modality endocrine therapy versus radiotherapy after breast-conserving surgery in women aged 70 years and older with luminal A-like early breast cancer (EUROPA): a preplanned interim analysis of a phase 3, non-inferiority, randomised trial

⇒ NON INFERIORITY RANDOMIZED TRIAL

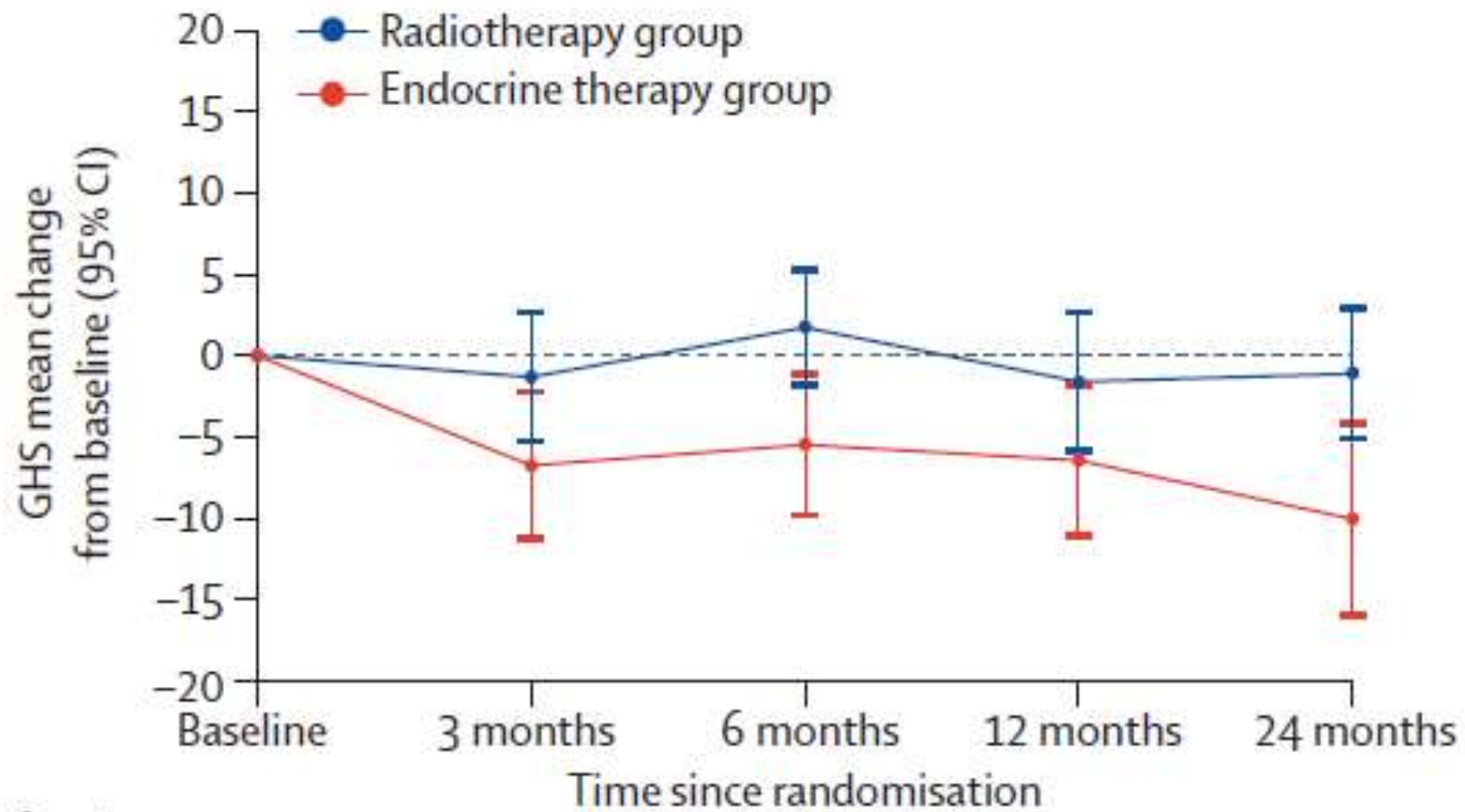
- STAGE I: pT1c ≤ 10 mm, any grade; pT11mm-19 mm, grade 1-2
- **> 70 yo**; LUMINAL A; Lumpectomy; ECOG 0/1
- **Stratification factors**: **Geriatric 8 (G8)** (≤14 vs >14) and **AGE GROUP** (70–79 years vs ≥80 years)
- RT : WBI / PBI (40,05 Gy/15F, 26 Gy/5F) ; HT : IA / TAMOXIFENE
- **Primary Objectives** : **change in HRQOL** at 24 m and **5-year IBTR** rates
- **731 pts** from March 4, 2021 and June 14, 2024 : 365 patients (RT) vs 366 patients (HT)
 - **PREPLANNED interim** analysis: **104 patients (RT) vs 103 patients (HT)**

⇒ RESULTS

- Median FU = 23.9 m
- **At 24 months**, the age-adjusted, G8 score-adjusted **mean change from baseline** in GHS was 3.40 (95% CI: 7.82 to 1.03; p=0.13) in the **RT group** and -9.79 (-14.45 to -5.13; p<0.0001) in the **HT group**
- **Treatment related adverse events** : **RT group** (65 [67%] of 97 patients) vs **HT group** (76 [85%] of 89).
- Most common grade 3-4 adverse events: arthralgia (six [7%] of 89 in the **HT group** vs 0 of 97 in the **RT group**)
- **Serious adverse events**: 15 (15%) patients in the RT group and 13 (15%) in the HT group.
- no treatment-related deaths in either group.



	Radiotherapy group (n=104)	Endocrine therapy group (n=103)
Exclusive endocrine therapy	0	103 (100%)
Exclusive partial breast irradiation	88 (85%)	0
Exclusive whole breast irradiation	16 (15%)	0
≤14	42 (40%)	41 (40%)
>14	62 (60%)	62 (60%)



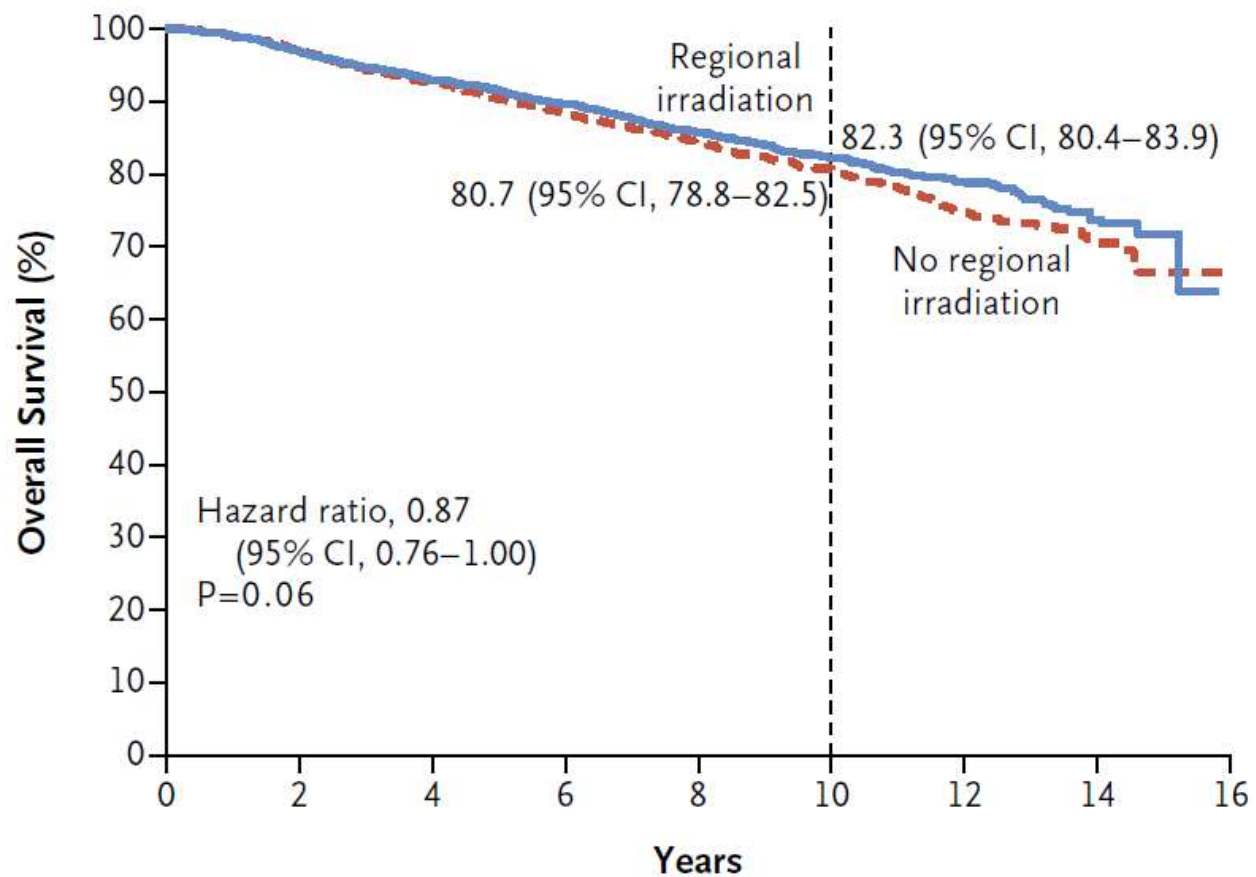
Number of patients

Radiotherapy group	104	88	92	88	82
Endocrine therapy group	99	74	79	75	73

	Radiotherapy group (n=104)	Endocrine therapy group (n=103)
Number of patients in intention-to-treat population		
Ipsilateral breast tumour recurrence	0	0
Locoregional recurrence	0	0
Contralateral breast cancer	2 (2%)	1 (1%)
Distant metastases	0	0
Death	4 (4%)	2 (2%)
Breast cancer-related death	0	0

Internal Mammary and Medial Supraclavicular Irradiation in Breast Cancer

- **Rate of DFS = 72.1%** in the **nodal-irradiation group** and **69.1%** in the **control group** (hazard ratio for disease progression or death, 0.89; 95% CI, 0.80 to 1.00; **p = 0.04**)
- **Rate of distant disease-free survival** = 78.0% versus 75.0% (hazard ratio, 0.86; 95% CI, 0.76 to 0.98; **p = 0.02**)
- **Breast-cancer mortality** = 12.5% versus 14.4% (hazard ratio, 0.82; 95% CI, 0.70 to 0.97; **p = 0.02**).
- Acute side effects of regional nodal irradiation were modest.



No. at Risk

No regional irradiation
Regional irradiation

2002	1926	1819	1698	1475	969	434	119
2002	1931	1839	1732	1532	988	466	124

No. of Events

429
382

Table 1. Baseline Characteristics of the Patients, According to Study Group.*

Characteristic	Control Group (N = 2002)	Nodal-Irradiation Group (N = 2002)	Total (N = 4004)
Age — yr			
Median	54.0	54.0	54.0
Range	22.0–75.0	19.0–75.0	19.0–75.0
Type of surgery — no. (%)			
Mastectomy	479 (23.9)	476 (23.8)	955 (23.9)
Breast-conserving surgery	1523 (76.1)	1526 (76.2)	3049 (76.1)
Pathological tumor stage — no. (%)			
pT1: ≤2 cm	1203 (60.1)	1205 (60.2)	2408 (60.1)
pT2: 2–5 cm	714 (35.7)	716 (35.8)	1430 (35.7)
pT3: >5 cm	71 (3.5)	70 (3.5)	141 (3.5)
Pathological nodal stage — no. (%)			
pN0: no axillary lymph nodes involved	890 (44.5)	888 (44.4)	1778 (44.4)
pN1a: 1–3 axillary lymph nodes involved	866 (43.3)	859 (42.9)	1725 (43.1)
pN2a: 4–9 axillary lymph nodes involved	201 (10.0)	195 (9.7)	396 (9.9)
pN3a: >9 axillary lymph nodes involved	44 (2.2)	59 (2.9)	103 (2.6)
Adjuvant treatment — no. (%)			
None	301 (15.0)	324 (16.2)	625 (15.6)
Chemotherapy	500 (25.0)	494 (24.7)	994 (24.8)
Hormonal therapy	599 (29.9)	586 (29.3)	1185 (29.6)
Both chemotherapy and hormonal therapy	602 (30.1)	598 (29.9)	1200 (30.0)

Extreme weekly locoregional hypofractionated radiation in elderly women with non-metastatic breast cancer

⇒ RETROSPECTIVE STUDY → **50 patients** ; Stade I-III : any grade ; any RH : no PBI ; any surgical procedure (lumpectomy vs mastectomy)

⇒ R

Local dose to the breast/CW		
	26 Gy/4 fractions	1 (2)
	27.5 Gy/5 fractions	1(2)
	28.5 Gy/5 fractions	35(70)
		1(2)
		12 (24)
Regional dose		
	27.5 Gy/5 fractions	49 (98)
	28.5 Gy/5 fractions	1 (2)

FAST-FORWARD phase 3 RCT nodal substudy

→ 5 y cause specific survival rate = 90%

→ 3y OS rate = 69,4% and 5y OS rate = 55.5 %

→ **TOXICITIES** :

- **Early Toxicity** : Grade 1 or 2 early toxicity = 88% ; no Grade 3 or higher acute toxicity.
- **Late Toxicity mainly Grade 1 or 2** : subcutaneous fibrosis, lymphoedema, and neuropathy except for one patient with Grade 3 fibrosis

Patient-reported acute fatigue in elderly breast cancer patients treated with and without regional nodal radiation

⇒ RETROSPECTIVE STUDY

→ **859 pts elderly breast cancer patients** (≥ 65 years) treated with adjuvant radiotherapy (RT) between 2012 and 2017

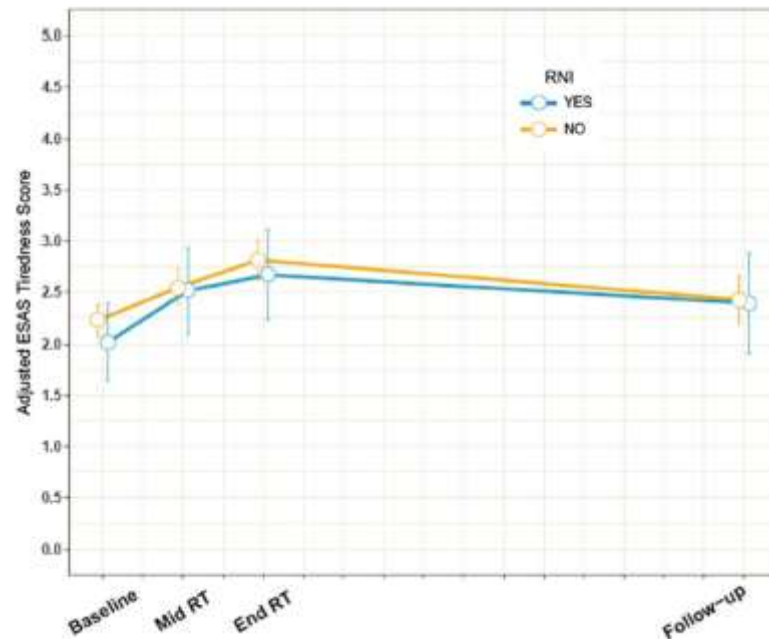
Characteristics	All patients (<i>N</i> = 859)	Cohort 1 RNI (<i>N</i> = 159)	Cohort 2 No RNI (<i>N</i> =700)	<i>p</i> value	did not
Age in years, Mean \pm SD	71.8 \pm 5.5	71.5 \pm 5.7	71.9 \pm 5.4	0.25	
Median (range)	71.0 (65.0–100.0)	70.0 (65.0–100.0)	71.0 (65.0–89.0)		
ECOG					ort; 2 72
0	261 (48.0%)	40 (37.0%)	221 (50.7%)	0.02	
1	230(42.3%)	52(48.1%)	178(40.8%)		

→ Edmonton Symptom Assessment System-revised (ESAS-r) questionnaire (fatigue) was completed prior to (baseline), during, at end of RT and first follow-up (3–6 months)



- Mean baseline fatigue was higher for cohort 1 vs. 2 (2.7 ± 2.5 vs. 2.1 ± 2.3 , $p = 0.006$)
- On univariate and multivariable analyses, RNI was not associated with an increased fatigue at the end of RT (44% vs. 47%; OR 0.89, 95% CI 0.61–1.30, $p = 0.56$).
- After adjusting for confounders (age, duration of RT, endocrine therapy), treatment with RNI was not associated with increased odds of worse fatigue at the end of RT (OR 1.33, 95% CI 0.85–2.10, $p = 0.22$).

Trend of Fatigue (adjusted) for individual cohorts



Updated recommendations regarding the management of older patients with breast cancer: a joint paper from the European Society of Breast Cancer Specialists (EUSOMA) and the International Society of Geriatric Oncology (SIOG) Biganzoli et al. Lancet Oncol 2021

Panel: Published recommendations regarding the omission of radiotherapy post breast-conserving surgery in low-risk patients

NCCN guidelines (2017)

- Women aged ≥ 70 years with invasive breast cancer, clinically node negative, who will receive adjuvant endocrine therapy (aromatase inhibitor or tamoxifen)

NICE guidelines (2018)

- A very low absolute risk of local recurrence, defined as women aged ≥ 65 years, T1N0, oestrogen receptor-positive, HER2-negative, and grade 1–2
- Receipt of breast-conserving surgery for invasive breast cancer with clear margins
- Commitment to take adjuvant endocrine therapy for ≥ 5 years

NCCN=National Comprehensive Cancer Network. NICE=National Institute for Health and Care Excellence.

CONCLUSION

⇒ Cancer du sein est fréquent > 70 ans

⇒ L'âge avancé n'est pas une CI à la radiothérapie (avec ou sans RNI)

⇒ La radiothérapie est le plus souvent bien tolérée chez les patientes âgées

⇒ Pas de BOOST (sauf R1)

⇒ Importance de la collégialité avec les oncogéiatres +++

