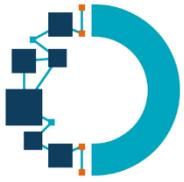


# Actualités en Radiothérapie pour les cancers urologiques

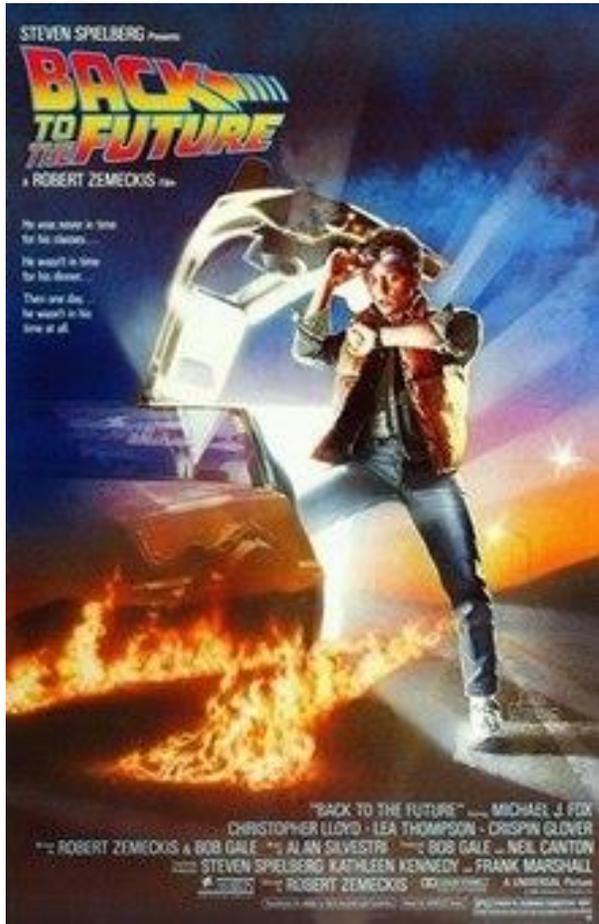
Clément Kintzinger  
Centre Saint Michel, La Rochelle



**RADIOTHÉRAPIE - QUOI DE NEUF ?**  
**POST-CONGRÈS 2019**



# Actualités dans le cancer de la prostate en place non métastatique



Conventional versus hypofractionated high-dose intensity-modulated radiotherapy for prostate cancer: 5-year outcomes of the randomised, non-inferiority, phase 3 CHHiP trial

*David Dearnaley, Isabel Syndikus, Helen Mossop, Vincent Khoo, Alison Birtle, David Bloomfield, John Graham, Peter Kirkbride, John Logue, Zafar Malik, Julian Money-Kyrle, Joe M O'Sullivan, Miguel Panades, Chris Parker, Helen Patterson\*, Christopher Scrase, John Staffurth, Andrew Stockdale, Jean Tremlett, Margaret Bidmead, Helen Mayles, Olivia Naismith, Chris South, Annie Gao, Clare Cruickshank, Shama Hassan, Julia Pugh, Clare Griffin, Emma Hall, on behalf of the CHHiP Investigators*

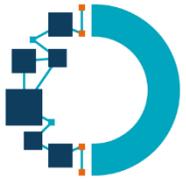
NRG Oncology RTOG 0415: A randomized phase III non-inferiority study comparing two fractionation schedules in patients with low-risk prostate cancer.

[W. Robert Lee](#), [James J. Dignam](#), [Mahul Amin](#), [Deborah Bruner](#), [Daniel Low](#), [Gregory P. Swanson](#), [Amit Shah](#), [David D'Souza](#), [Jeff M. Michalski](#), [Ian Dayes](#), [Samantha A. Seaward](#), [William Adrian Hall](#), [Paul L. Nguyen](#), [Thomas Michael Pisansky](#), [Sergio Faria](#), [Yuhchyan Chen](#), [Bridget F. Koontz](#), [Rebecca Paulus](#), [Howard M. Sandler](#)

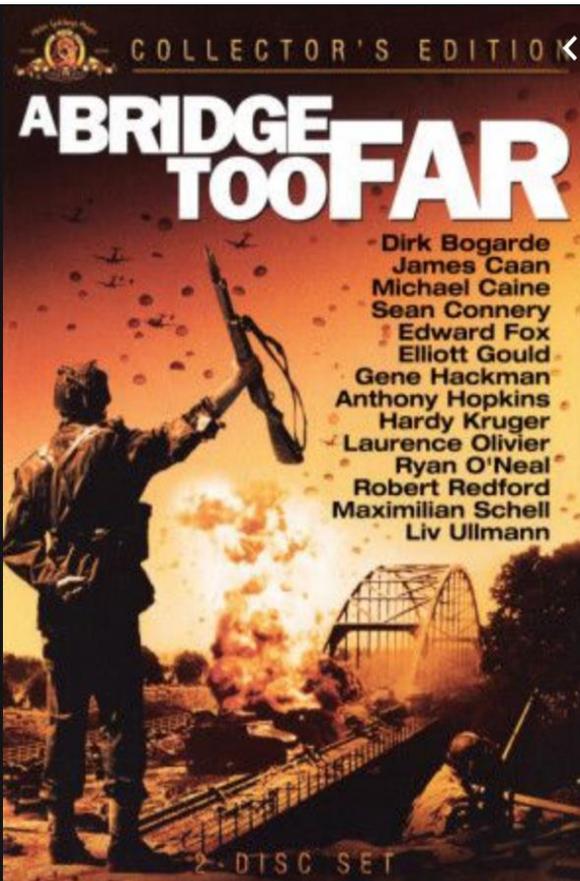
ORIGINAL REPORTS | Rapid Communication

## Randomized Trial of a Hypofractionated Radiation Regimen for the Treatment of Localized Prostate Cancer

[Charles N. Catton](#), [Himu Lukka](#), [Chu-Shu Gu](#), [Jarad M. Martin](#), [Stéphane Supiot](#), [Peter W.M. Chung](#), ...



# Actualités dans le cancer de la prostate en place non métastatique



## Ultra-hypofractionated versus conventionally fractionated radiotherapy for prostate cancer: 5-year outcomes of the HYPO-RT-PC randomised, non-inferiority, phase 3 trial



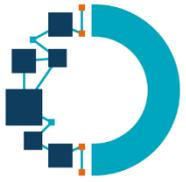
*Anders Widmark, Adalsteinn Gunnlaugsson, Lars Beckman, Camilla Thellenberg-Karlsson, Morten Hoyer, Magnus Lagerlund, Jon Kindblom, Claes Ginman, Bengt Johansson, Kirsten Björnlinger, Mihajl Seke, Måns Agrup, Per Fransson, Björn Tavelin, David Norman, Björn Zackrisson, Harald Anderson, Elisabeth Kjellén, Lars Franzén, Per Nilsson*

## Intensity-modulated fractionated radiotherapy versus stereotactic body radiotherapy for prostate cancer (PACE-B): acute toxicity findings from an international, randomised, open-label, phase 3, non-inferiority trial

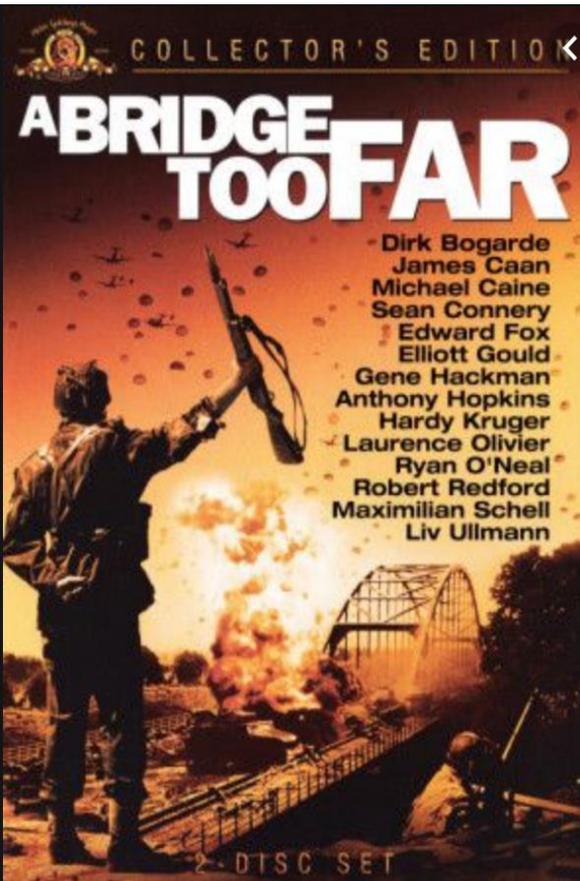


*Douglas H Brand\*, Alison C Tree\*, Peter Ostler, Hans van der Voet, Andrew Loblaw, William Chu, Daniel Ford, Shaun Tolan, Suneil Jain, Alexander Martin, John Staffurth, Philip Camilleri, Kiran Kancherla, John Frew, Andrew Chan, Ian S Dayes, Daniel Henderson, Stephanie Brown, Clare Cruickshank, Stephanie Burnett, Aileen Duffton, Clare Griffin, Victoria Hinder, Kirsty Morrison, Olivia Naismith, Emma Hall, Nicholas van As, on behalf of the PACE Trial Investigators*





# Actualités dans le cancer de la prostate en place non métastatique



## Ultra-hypofractionated versus conventionally fractionated radiotherapy for prostate cancer: 5-year outcomes of the HYPO-RT-PC randomised, non-inferiority, phase 3 trial



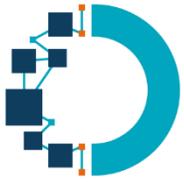
*Anders Widmark, Adalsteinn Gunnlaugsson, Lars Beckman, Camilla Thellenberg-Karlsson, Morten Hoyer, Magnus Lagerlund, Jon Kindblom, Claes Ginman, Bengt Johansson, Kirsten Björnlinger, Mihajl Seke, Måns Agrup, Per Fransson, Björn Tavelin, David Norman, Björn Zackrisson, Harald Anderson, Elisabeth Kjellén, Lars Franzén, Per Nilsson*

## Intensity-modulated fractionated radiotherapy versus stereotactic body radiotherapy for prostate cancer (PACE-B): acute toxicity findings from an international, randomised, open-label, phase 3, non-inferiority trial



*Douglas H Brand\*, Alison C Tree\*, Peter Ostler, Hans van der Voet, Andrew Loblaw, William Chu, Daniel Ford, Shaun Tolan, Suneil Jain, Alexander Martin, John Staffurth, Philip Camilleri, Kiran Kancherla, John Frew, Andrew Chan, Ian S Dayes, Daniel Henderson, Stephanie Brown, Clare Cruickshank, Stephanie Burnett, Aileen Duffton, Clare Griffin, Victoria Hinder, Kirsty Morrison, Olivia Naismith, Emma Hall, Nicholas van As, on behalf of the PACE Trial Investigators*





# Actualités dans le cancer de la prostate

Phase III multicentrique de non infériorité



Patient d'Amico II et III

Techniques:  
3D/IMRT/VMAT  
CBCT/ Beam Cath  
6-4mm ou 15-10mm

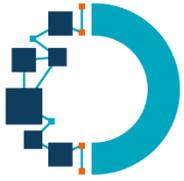
Critères d'inclusion:  
moins de 75 ans  
PS 0-2  
cT1c-cT3a N0  
Gleason  
PSA inf a 20  
2 critères de mauvais pronostic max

Normo-fractionnée  
78 Gy/ 39 fractions  
5/semaine

Stéréotaxie prostatique  
42,7 Gy/ 7 fractions  
3/ Semaines

Objectif principal:  
Survie sans rechute  
clinique et/ou biologique

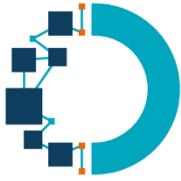
Objectifs secondaires:  
DFS/ SSC/ OS/ QOL/ Tox



# Actualités dans le cancer de la prostate

	Conventional fractionation (n=591)	Ultra-hypofractionation (n=589)
Age, years	69 (65-72)	68 (64-72)
PSA, ng/mL*		
Median (IQR)	8.6 (5.7-12.0)	8.7 (6.0-12.2)
≤10 ng/mL	356 (60%)	357 (61%)
>10 ng/mL	235 (40%)	232 (39%)
Gleason score*		
5	2 (<1%)	5 (1%)
6	106 (18%)	99 (17%)
7	444 (75%)	447 (76%)
8	37 (6%)	33 (6%)
9	2 (<1%)	5 (1%)
Clinical T stage*		
T1c	289 (49%)	313 (53%)
T2	275 (47%)	252 (43%)
T3a	27 (5%)	24 (4%)
Risk group		
Intermediate risk	527 (89%)	527 (89%)
High risk†	64 (11%)	62 (11%)
Time from randomisation to start of radiotherapy, weeks	3 (1-6)	3 (1-6)
Radiotherapy prescribed and delivered		
Total dose, Gy	78.0 (78.0-78.0)	42.7 (42.7-42.7)
Radiotherapy fractions received	39/39 (100%)	7/7 (100%)
Total radiotherapy treatment time, days	57 (55-59)	16 (15-17)
Radiotherapy technique		
3DCRT	471 (80%)	471 (80%)
VMAT/IMRT	120 (20%)	118 (20%)

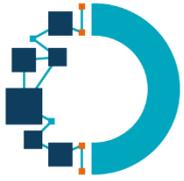
- 1200 dont une majorité de patients d'Amico II
- Pas d'information sur les pathologies de risque intermédiaire
  - Gleason 7 ( 3+4)
  - Gleason 7 (4+3)
- Taux de 3D important ( 2005 et 2015)



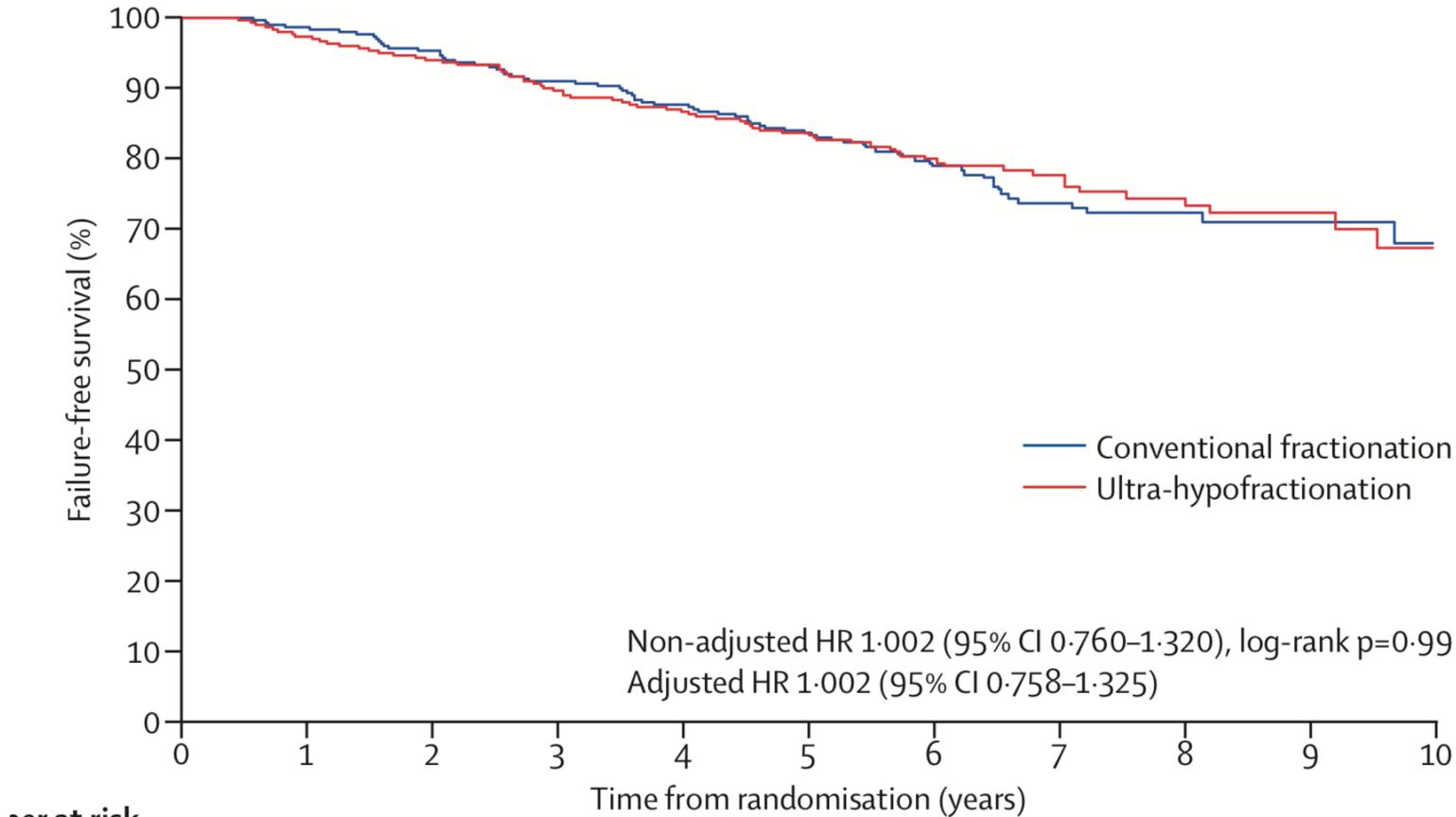
# Actualités dans le cancer de la prostate

	Conventional fractionation (n=591)	Ultra-hypofractionation (n=589)
Age, years	69 (65-72)	68 (64-72)
PSA, ng/mL*		
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>10 ng/mL	235 (40%)	232 (39%)
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6	100 (16%)	99 (17%)
7	444 (75%)	447 (76%)
8	37 (6%)	33 (6%)
9	2 (<1%)	5 (1%)
Clinical T stage*		
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T2	275 (47%)	252 (43%)
T3a	27 (5%)	24 (4%)
Risk group		
Intermediate risk	527 (89%)	527 (89%)
High risk†	64 (11%)	62 (11%)
Time from randomisation to start of radiotherapy, weeks	5 (1-8)	3 (1-6)
Radiotherapy prescribed and delivered		
Total dose, Gy	78.0 (78.0-78.0)	42.7 (42.7-42.7)
Radiotherapy fractions received	39/39 (100%)	7/7 (100%)
Total radiotherapy treatment time, days	57 (55-59)	16 (15-17)
Radiotherapy technique		
3DCRT	471 (80%)	471 (80%)
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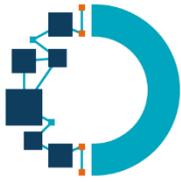
- 1200 dont une majorité de patients d'Amico II
- Pas d'information sur les pathologies de risque intermédiaire
  - Gleason 7 ( 3+4)
  - Gleason 7 (4+3)
- Taux de 3D important ( 2005 et 2015)



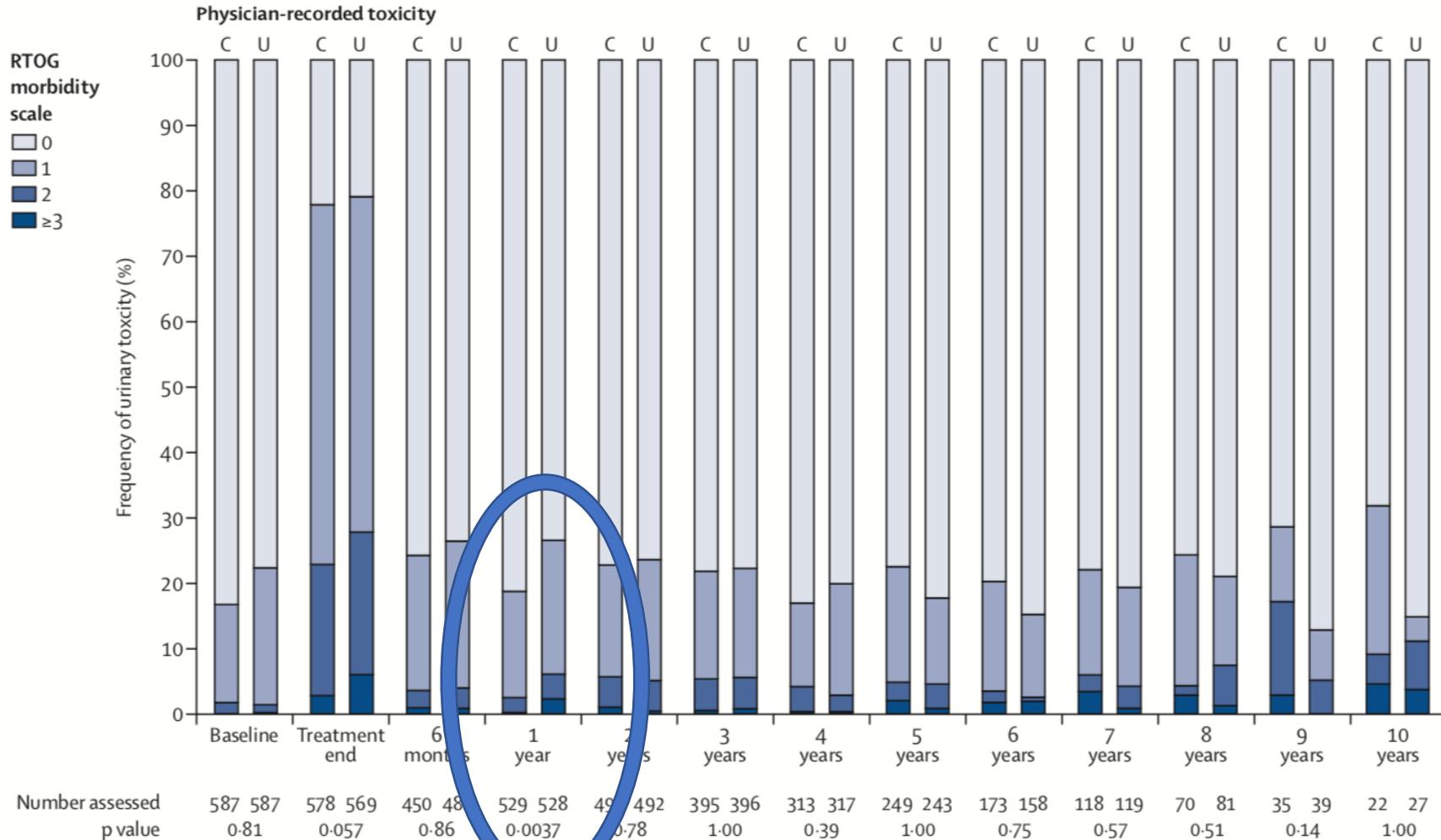
# Actualités dans le cancer de la prostate



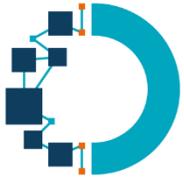
- Suivre médian de 5 ans
- DFS de 0,84 %
- Pas de différence entre les deux groupes



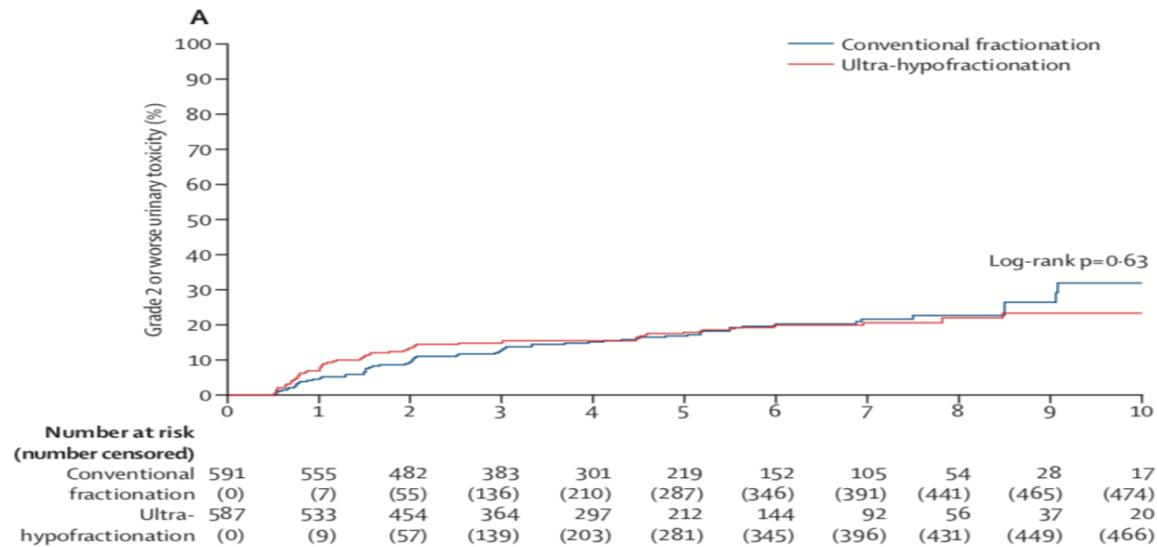
# Actualités dans le cancer de la prostate



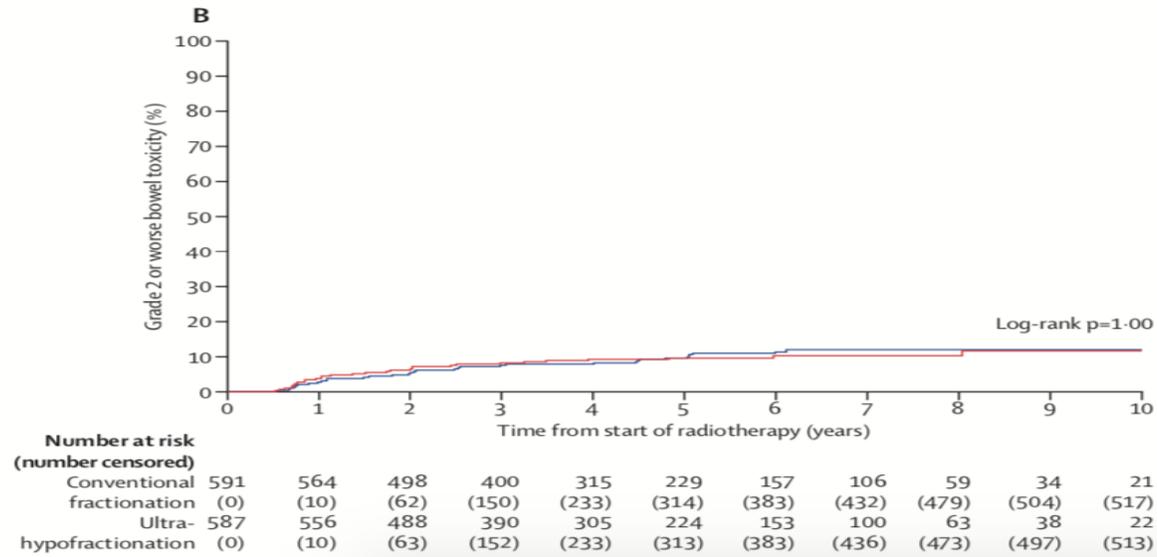
Plus de toxicité urinaire G3 retrouvée à 1 an

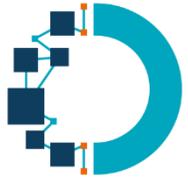


# Actualités dans le cancer de la prostate

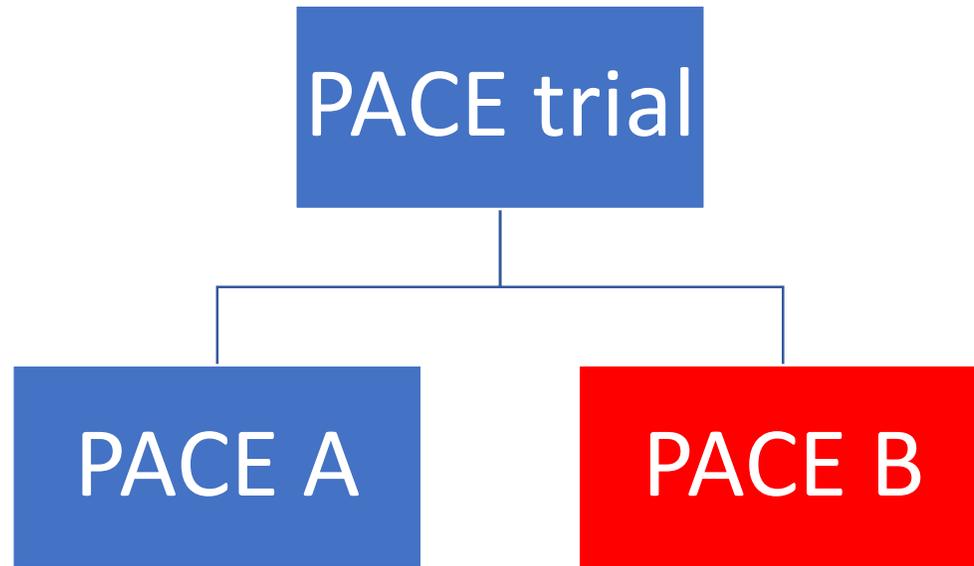


Pas de différence sur les toxicités digestives et urinaires tardives

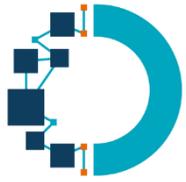




# Actualités dans le cancer de la prostate



Challenge de la radiothérapie stéréotaxique vs Chirurgie ( PACE A) et vs Radiothérapie normo-fractionnée



# Actualités dans le cancer de la prostate

## Critères d'inclusion:

+ de 5 ans  
PS 0-2  
cT1c-cT2c N0  
Gleason 6- 7 (3+4)  
PSA inf a 20  
Pas d'hormonothérapie

Patient d'Amico I et II faible

Normo-fractionnée

78 Gy/ 39 fractions

5/semaine

Hypo-fractionnée 62Gy/20  
fractions

5/semaine

Stéréotaxie prostatique

36,25Gy/ 5 fractions

1 a 2 / Semaines

RCMI

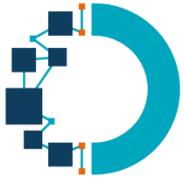
Fiduciaires en option  
Normo hypo 5-9/ 3-7  
Stereo 4-5/ 3-5

RTOG  
CTCAE  
EPIC-26  
Vaizey  
IPSS  
IIEF-5

Objectif principal:  
Survie sans rechute  
clinique et/ou biologique

Objectifs secondaires:  
Toxicité aiguë/tardive  
OS/ DSS / PFS

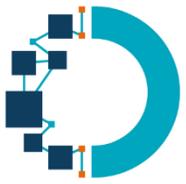
Brand, Lancet 2019



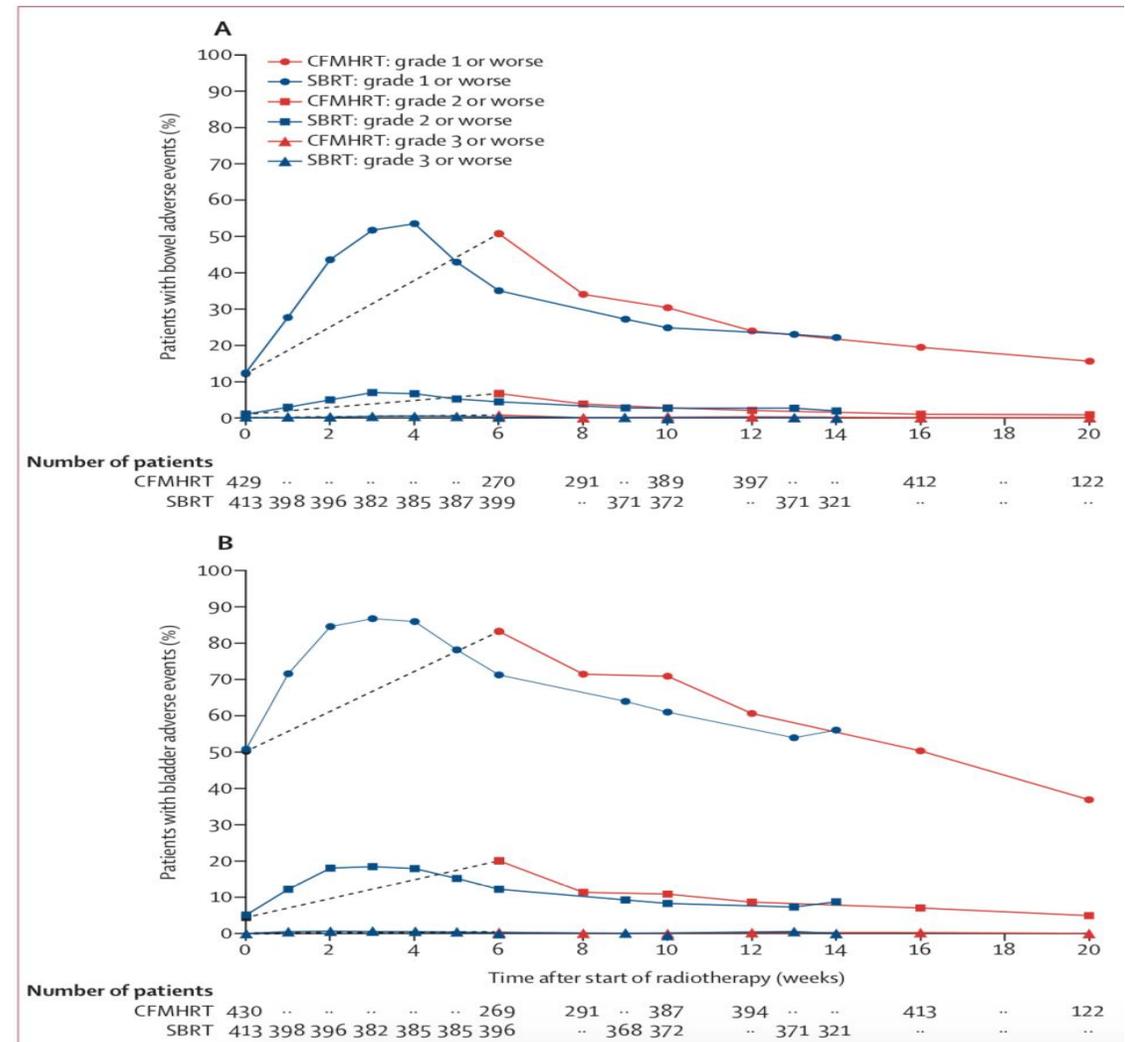
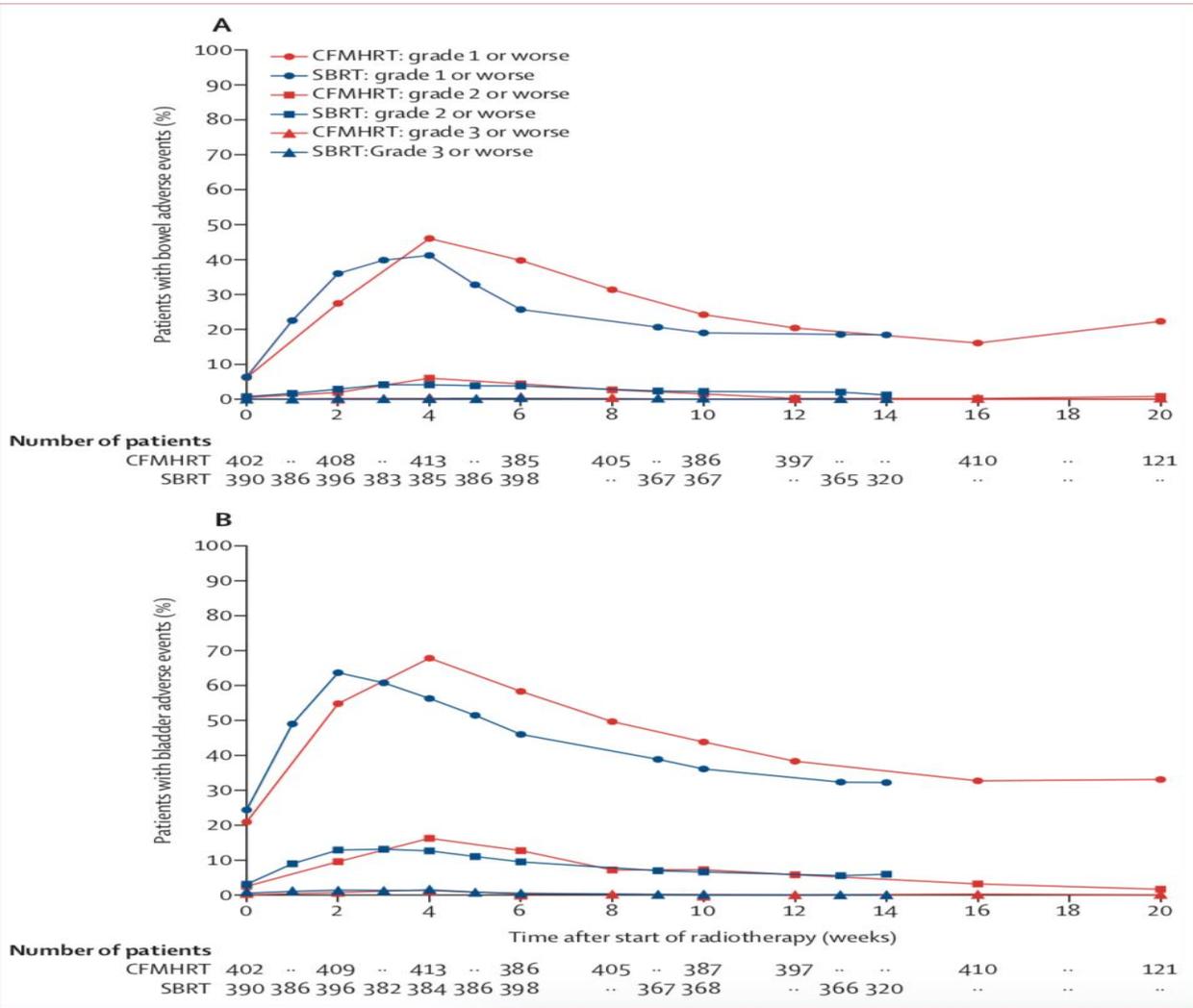
# Actualités dans le cancer de la prostate

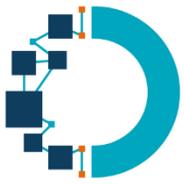
- 874 hommes inclus entre 2012 et 2018
- Analyse intermédiaire
- Dans le bras non stéréotaxie, majorité de patients avec hypofractionnement
- Plus de fiduciaires dans le bras stéréotaxie

	Conventionally fractionated or moderately hypofractionated radiotherapy group (n=432)	Stereotactic body radiotherapy group (n=415)
(Continued from previous column)		
Prostate volume (mL)		
<40	153 (35%)	160 (39%)
40–<80	200 (46%)	170 (41%)
≥80	16 (4%)	21 (5%)
Unknown	63 (15%)	64 (15%)
α blockers at randomisation		
Yes	68 (16%)	67 (16%)
No	361 (84%)	344 (83%)
Unknown	3 (1%)	4 (1%)
Aspirin at randomisation		
Yes	74 (17%)	63 (15%)
No	355 (82%)	347 (84%)
Unknown	3 (1%)	5 (1%)
Statin at randomisation		
Yes	153 (35%)	126 (30%)
No	275 (64%)	283 (68%)
Unknown	4 (1%)	6 (1%)
Anticholinergic for bladder symptoms at randomisation		
Yes	16 (4%)	10 (2%)
No	414 (96%)	400 (96%)
Unknown	2 (<1%)	5 (1%)
5-α reductase inhibitor at randomisation		
Yes	9 (2%)	10 (2%)
No	416 (96%)	387 (93%)
Unknown	7 (2%)	18 (4%)
Phosphodiesterase-5 inhibitor at randomisation		
Yes	12 (3%)	6 (1%)
No	412 (95%)	392 (94%)
Unknown	8 (2%)	17 (4%)
Data are median (IQR), n (%), or mean (SD). PSA=prostate-specific antigen.		
<b>Table 1: Baseline characteristics</b>		



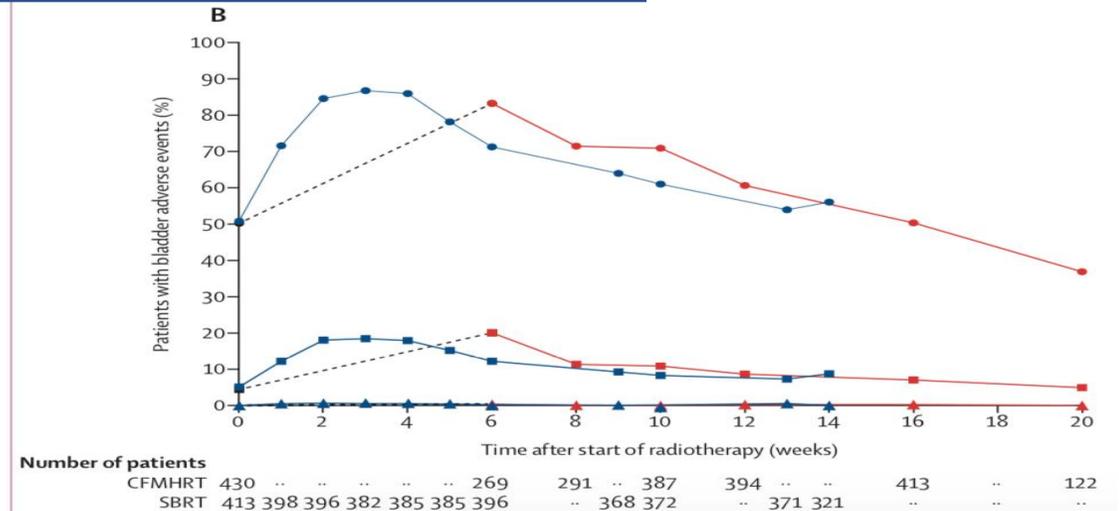
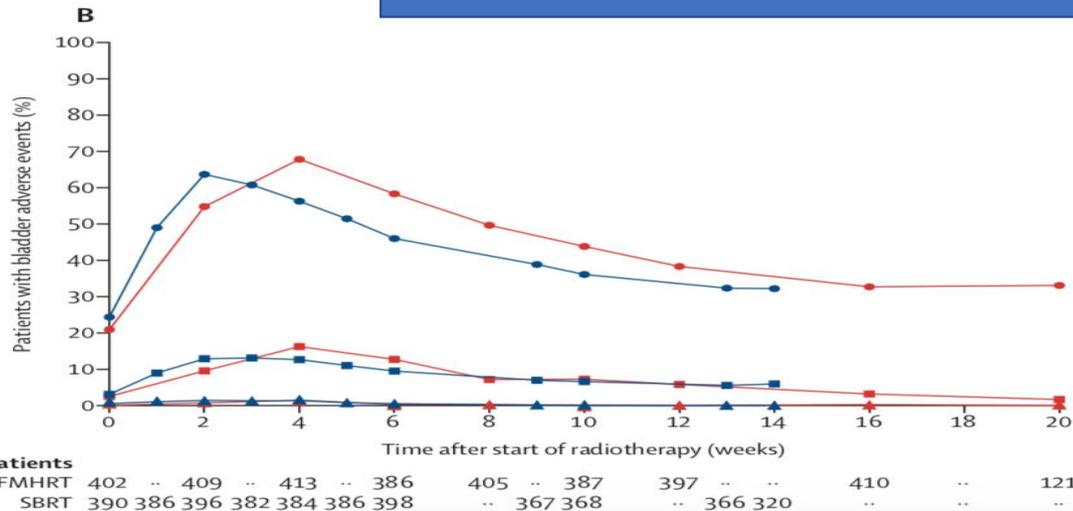
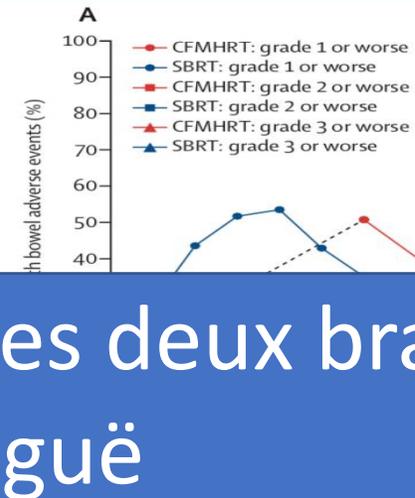
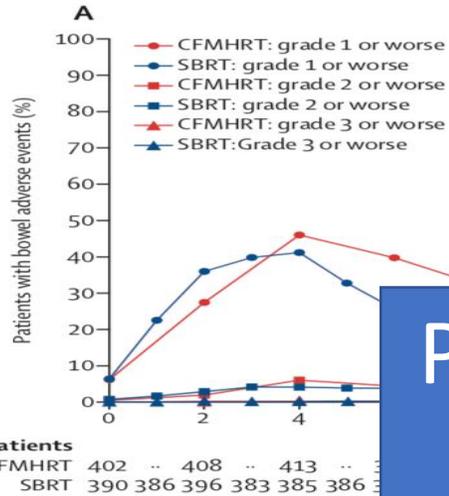
# Actualités dans le cancer de la prostate

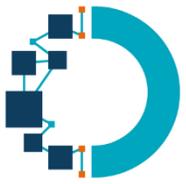




# Actualités dans le cancer de la prostate

Pas de différence entre les deux bras sur la toxicité aiguë





# Actualités dans le cancer de la prostate

LBA49\_PR

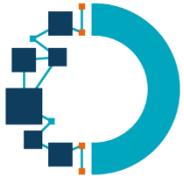
## Timing of radiotherapy (RT) after radical prostatectomy (RP): First results from the RADICALS RT randomised controlled trial (RCT) [NCT00541047] FREE

C Parker, N W Clarke, A Cook, H G Kynaston, P Meidahl Petersen, W Cross, R Persad, C Catton, J Logue, H Payne, F Saad, K Brasso, H Lindberg, A Zarkar, R Raman, M A Roder, C Heath, W R Parulekar, M K B Parmar, M R Sydes

*Annals of Oncology*, Volume 30, Issue Supplement\_5, October 2019, mdz394.042, <https://doi.org/10.1093/annonc/mdz394.042>

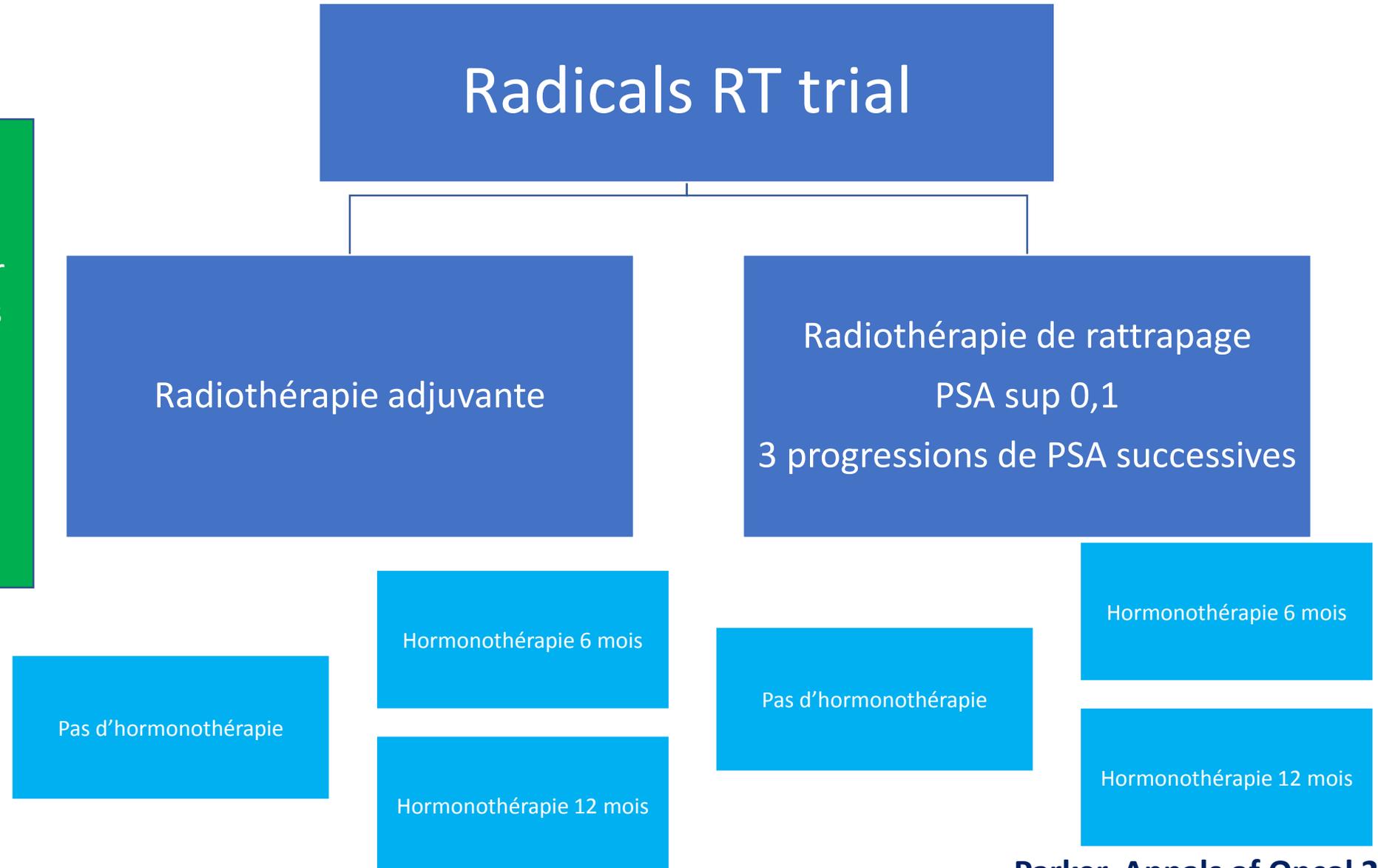
**Published:** 01 October 2019

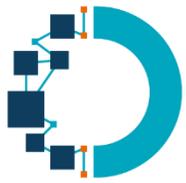
- Le Timing optimal de la radiothérapie complémentaire suite à une chirurgie
- 3 études antérieures avec des résultats contradictoires
  - SWOG 8794
  - EORTC 22911
  - ARO 9602
- 3 études en cours
  - RADICALS RT
  - GETUG 17
  - RAVES



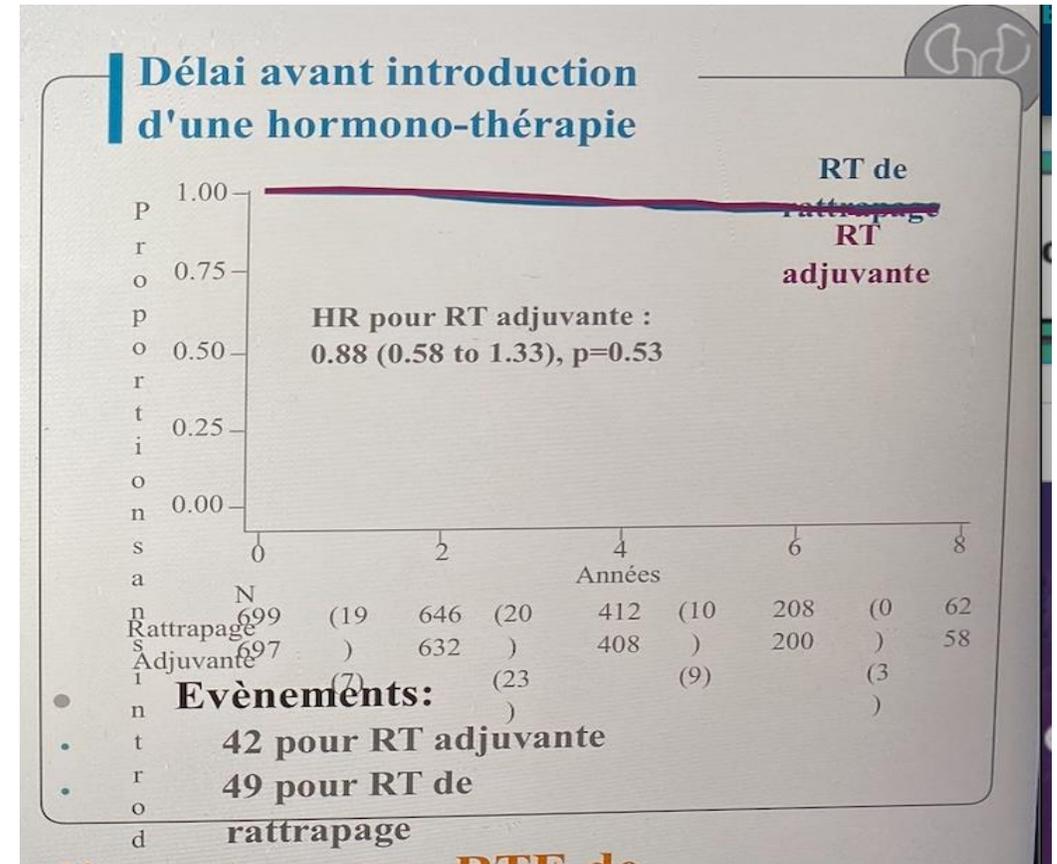
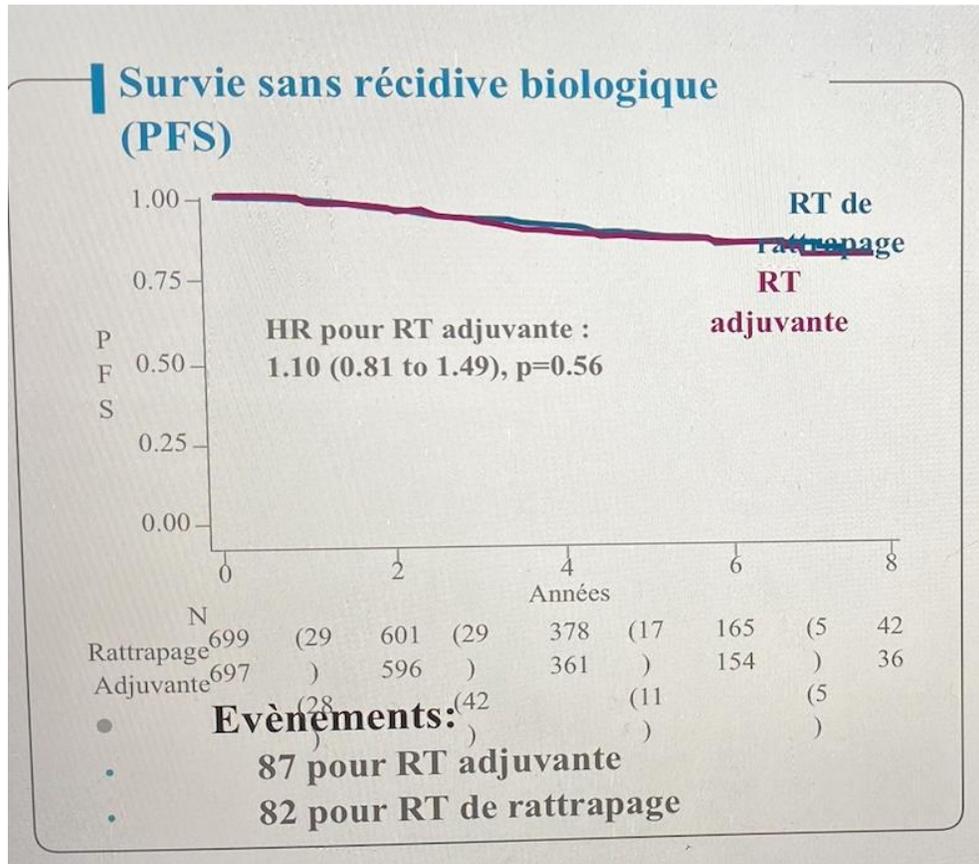
# Actualités dans le cancer de la prostate

- Prostatectomie radicale
- PSA post op inf 0,2
- 4-22 semaines après chir
- Au moins un des critères suivant:
  - pT3/4
  - Gleason 7-10
  - PSA ini sup 10
  - R1



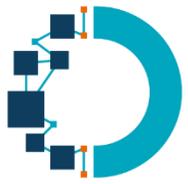


# Actualités dans le cancer de la prostate



**Pas d'avantage à une Radiothérapie adjuvante vs une radiothérapie de rattrapage**

Parker, Annals of Oncol 2019



# Actualités dans le cancer de la prostate

**LBA48\_PR**

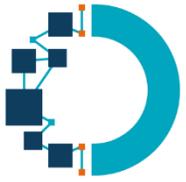
**Adjuvant or salvage radiotherapy for the treatment of localised prostate cancer? A prospectively planned aggregate data meta-analysis** FREE

C L Vale, M Brihoum, S Chabaud, A Cook, D Fisher, S Forcat, C Fraser-Browne, A Herschtal, A Kneebone, S Nénan, C Parker, M K B Parmar, M Pearse, P Richaud, E Rogozińska, P Sargos, M R Sydes, J F Tierney

*Annals of Oncology*, Volume 30, Issue Supplement\_5, October 2019, mdz394.041, <https://doi.org/10.1093/annonc/mdz394.041>

**Published:** 01 October 2019

- **Méta-analyse à partir des données de**
  - **GETUG 17**
  - **RAVES**
  - **RADICAL RT**
- **Pas d'intérêt à une irradiation adjuvante**
  - **HR 1,09 ( IC 95 0,86-1,39 p=0,47)**



# Actualités dans le cancer de la prostate

- Prostatectomie radicale pT2-T4 (col vésicale)
- PSA post op inf 0,1
- PSA en aug sur 3 dosages
- PSA entre 0,2 et 2 à plus de 6 mois chir

GETUG 16

Techniques:  
Non précisé  
Loge et loge pelvis

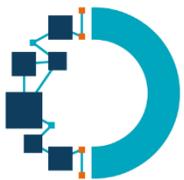
Radiothérapie de  
rattrapage

Objectif principal:  
Survie sans progression  
clinique et/ou biologique

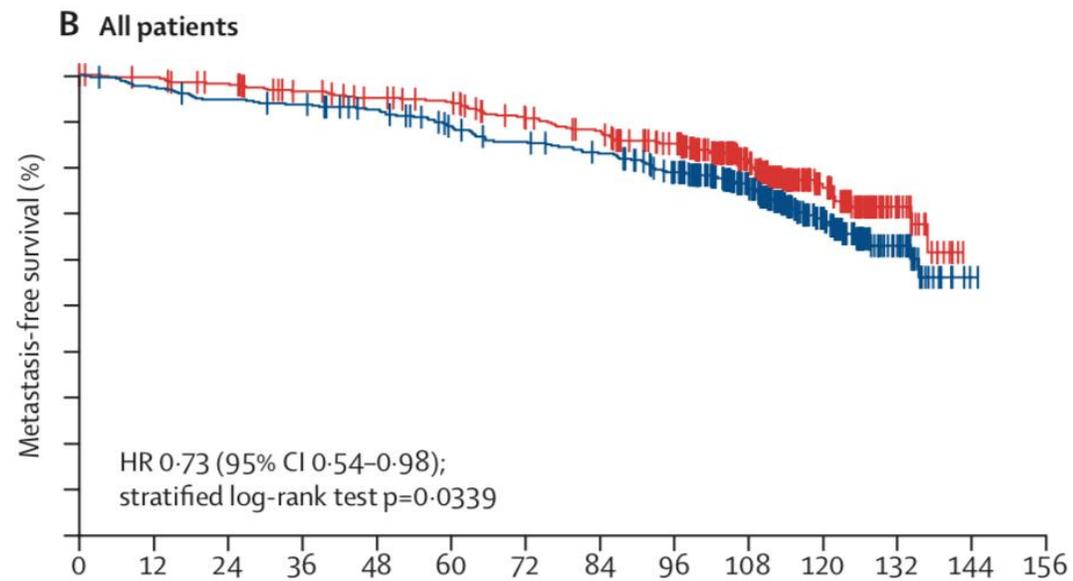
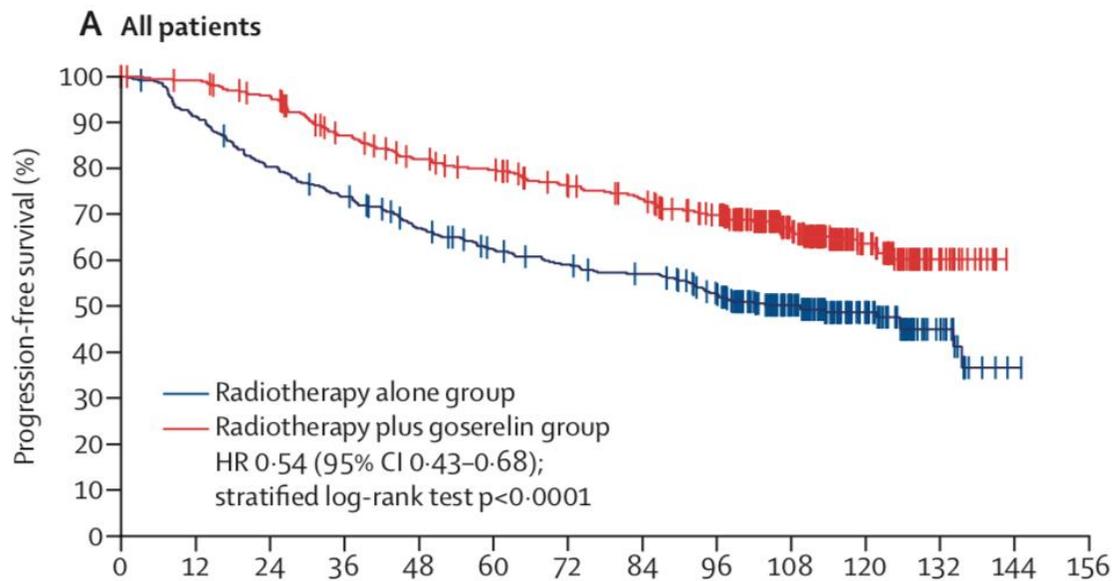
Radiothérapie de  
rattrapage  
+ 6 mois  
d'hormonothérapie

Objectifs secondaires:  
Survie sans Métastase  
SG/ Toxicité

Carrie et al, Lancet Oncol 2019



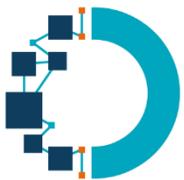
# Actualité dans le cancer de la prostate



**Number at risk  
(number censored)**

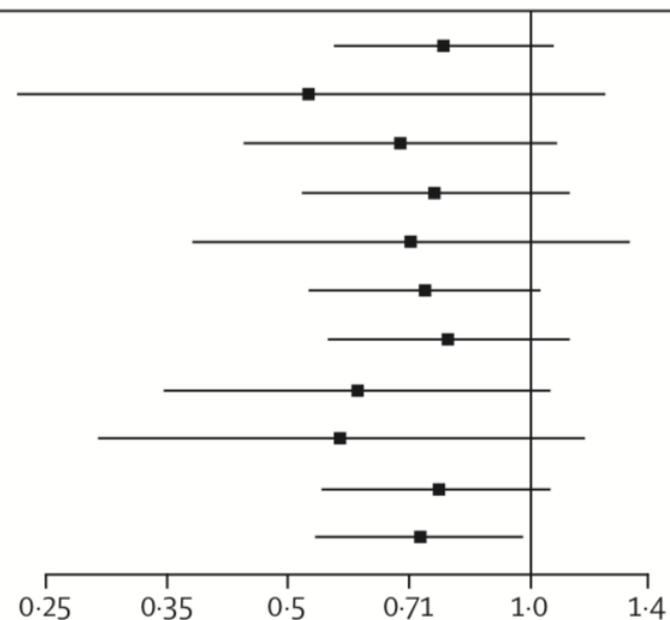
Radiotherapy alone group	373 (0)	298 (2)	242 (9)	206 (17)	171 (30)	53 (138)	1 (185)
Radiotherapy plus goserelin group	369 (2)	346 (8)	284 (21)	251 (34)	214 (51)	66 (186)	0 (249)

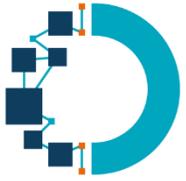
	373 (0)	351 (2)	336 (9)	302 (18)	264 (33)	92 (183)	1 (266)
	369 (2)	354 (8)	330 (21)	302 (34)	263 (55)	85 (213)	0 (292)



# Actualité dans le cancer de la prostate

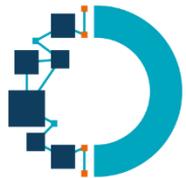
	n (%)	10-year MFS (95% CI)		Hazard ratio (95% CI)	p value
		Radiotherapy plus goserelin group	Radiotherapy alone group		
Gleason score <8	661 (89%)	75% (69-80)	70% (64-75)	0.78 (0.57-1.07)	0.120
Gleason score ≥8	81 (11%)	80% (61-90)	62% (43-76)	0.53 (0.23-1.24)	0.138
Positive surgical margin	373 (50%)	80% (72-86)	73% (64-79)	0.69 (0.44-1.08)	0.105
Negative surgical margin	373 (50%)	71% (63-78)	65% (56-72)	0.76 (0.52-1.12)	0.160
Seminal vesicle involvement	112 (15%)	68% (52-80)	57% (42-70)	0.71 (0.38-1.33)	0.279
No seminal vesicle involvement	630 (85%)	77% (70-82)	71% (64-76)	0.74 (0.53-1.03)	0.074
PSA doubling time >6 months	546 (74%)	75% (68-81)	71% (64-77)	0.79 (0.56-1.12)	0.181
PSA doubling time ≤6 months	196 (26%)	77% (64-85)	63% (50-73)	0.61 (0.35-1.06)	0.076
Low-risk subgroup	221 (30%)	86% (76-92)	77% (67-85)	0.58 (0.29-1.17)	0.125
High-risk subgroup	521 (70%)	72% (65-78)	65% (58-72)	0.77 (0.55-1.06)	0.107
<b>Overall</b>	<b>742 (100%)</b>	<b>75% (70-80)</b>	<b>69% (63-74)</b>	<b>0.73 (0.54-0.98)</b>	<b>0.034</b>





## A retenir

- Ultra Hypo-fractionnement
  - À prendre avec recul pour les haut risques
  - Avenir probable dans les risques faibles à intermédiaires bas
  - Attente des résultats définitifs de PACE B et de PACE A....
- Irradiation adjuvante de prostate n'est plus recommandée
  - PSA sup à 0,1 ou 0,2?
- Ajout d'hormonothérapie dans la radiothérapie de rattrapage?
  - Radical RT



**Merci pour votre attention**

