Néoplasies infiltrantes de la vessie : indications de la radiothérapie

Jeudi 19 septembre 2024

Limoges

Xavier ZASADNY

Polyclinique de Limoges

Réunion « Actualités dans la prise en charge des cancers urologiques »

SOMMAIRE

Résultats
de la préservation vésicale
par Radiothérapie

Radiothérapie seule

Rétro POLLACK

IJROBP & CANCER

1994

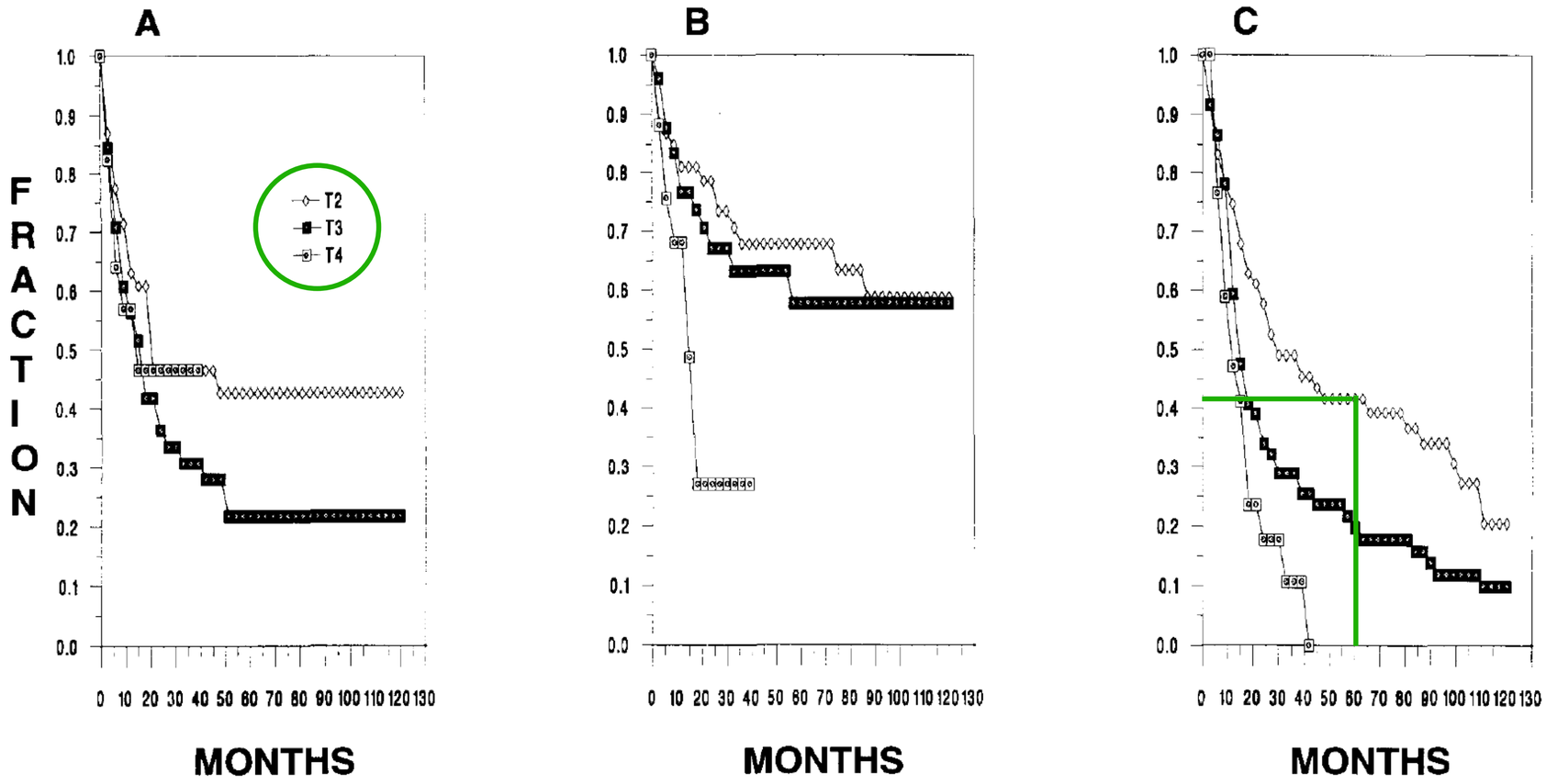


Fig. 1. Actuarial pelvic control (A), freedom from metastases (B), and overall survival (C) of bladder cancer patients categorized by stage.

Survie 5 ans : 49% avec vs 25% sans résection macroscopique préalable

43% de réponses complètes histologiques (série Radiothérapie suivi par Cystectomie)

Radiochimiothérapie concomitante (Trimodalités ou TMT) versus Radiothérapie seule (après RTUV)

Phase 3 JAMES NEJM 2012

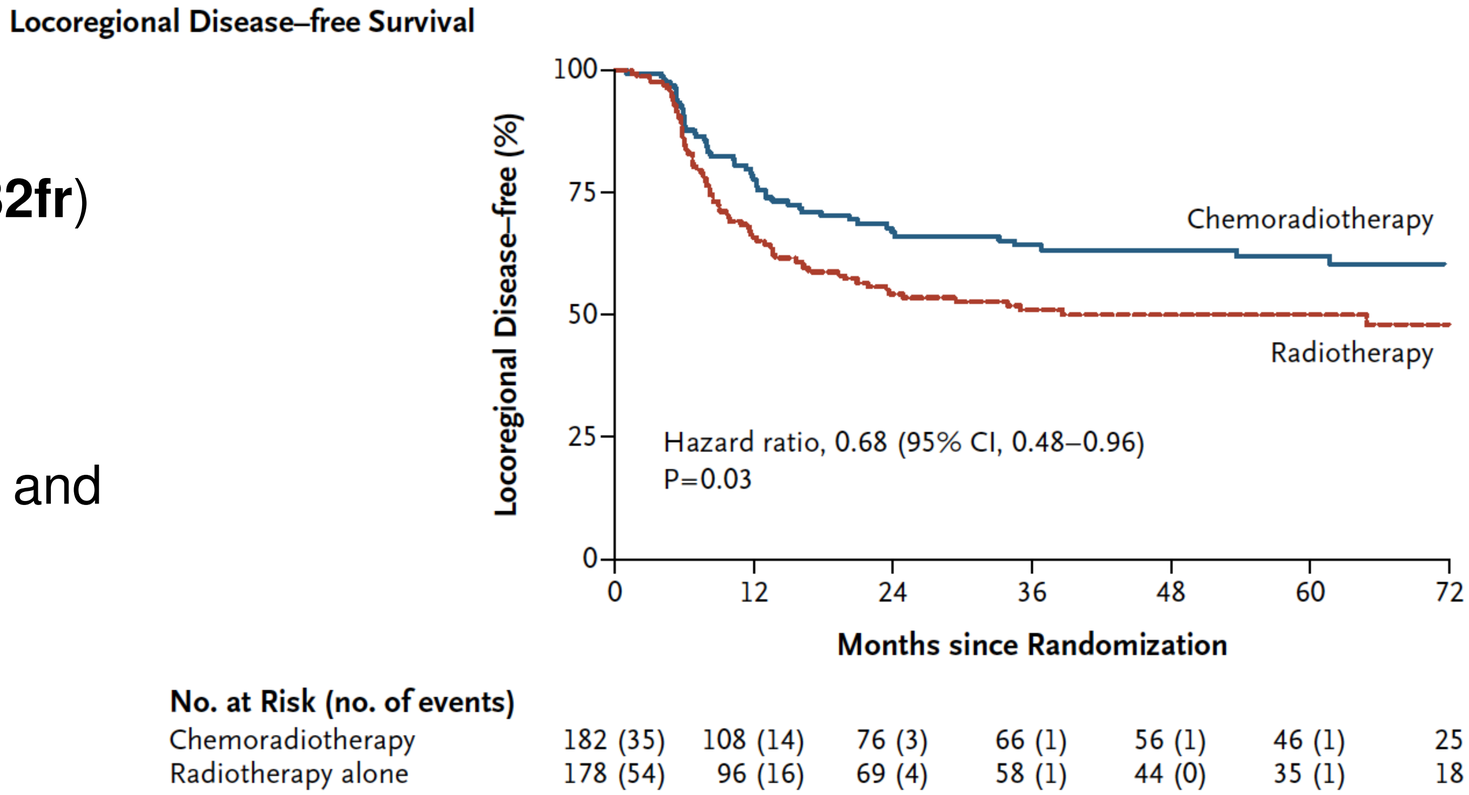
- Radiothérapie (**55Gy/20fr** versus **64Gy/32fr**)

versus

- Radiothérapie **+ Chimiothérapie**

5FU (500 mg/m2/J) during fractions 1 to 5 and 16 to 20 of radiotherapy and
Mitomycin C (12 mg/m2) on day 1

LRDFS 2 ans : 67% vs 54%

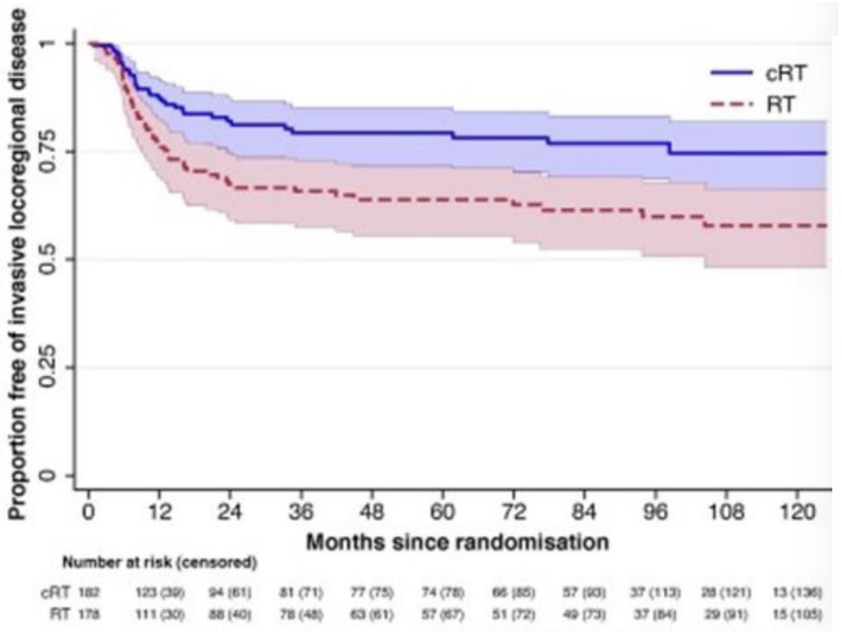


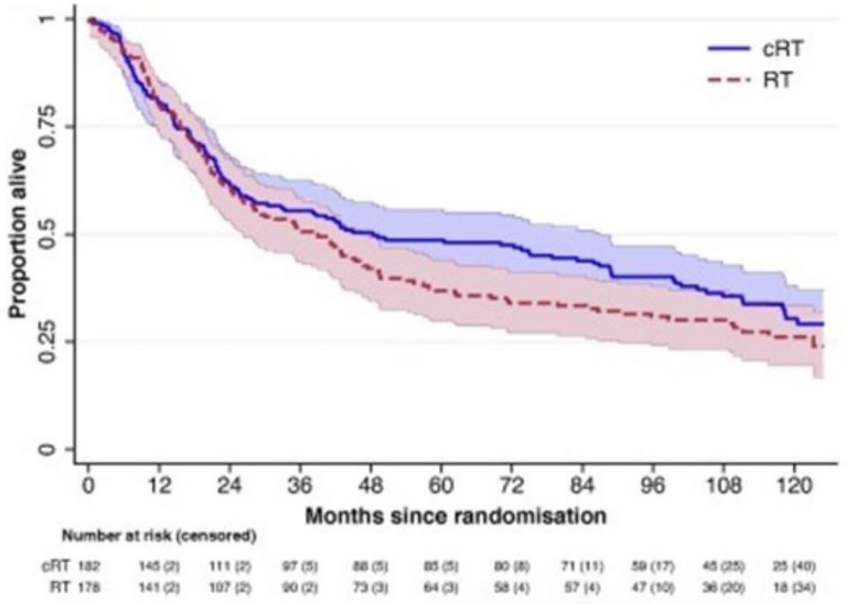
Radiochimiothérapie concomitante versus Radiothérapie seule

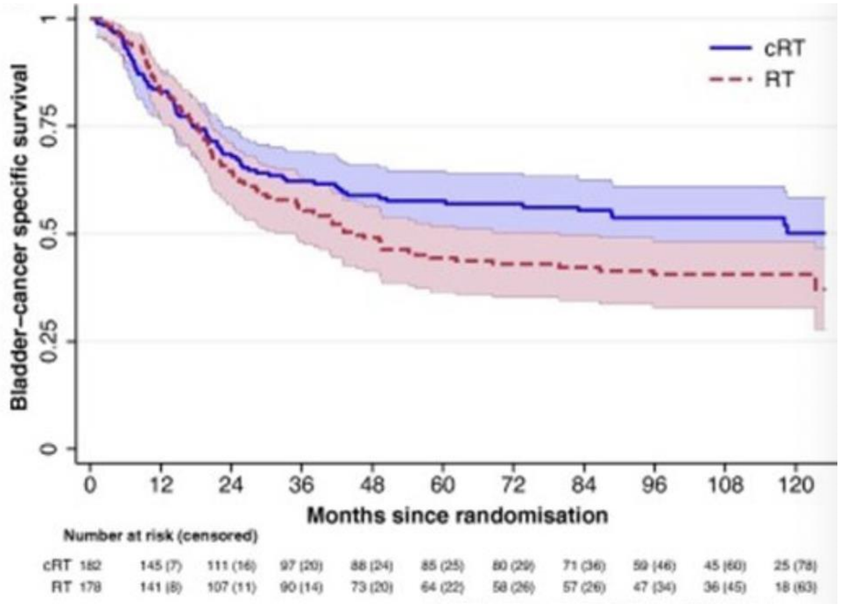
Phase 3 HALL Eur Urol 2022 = résultats après 10 ans de suivi

Amélioration significative du contrôle local et régional à 5 ans = 63% vs 49%

Cystectomie de rattrapage à 5 ans = 14% vs 22%

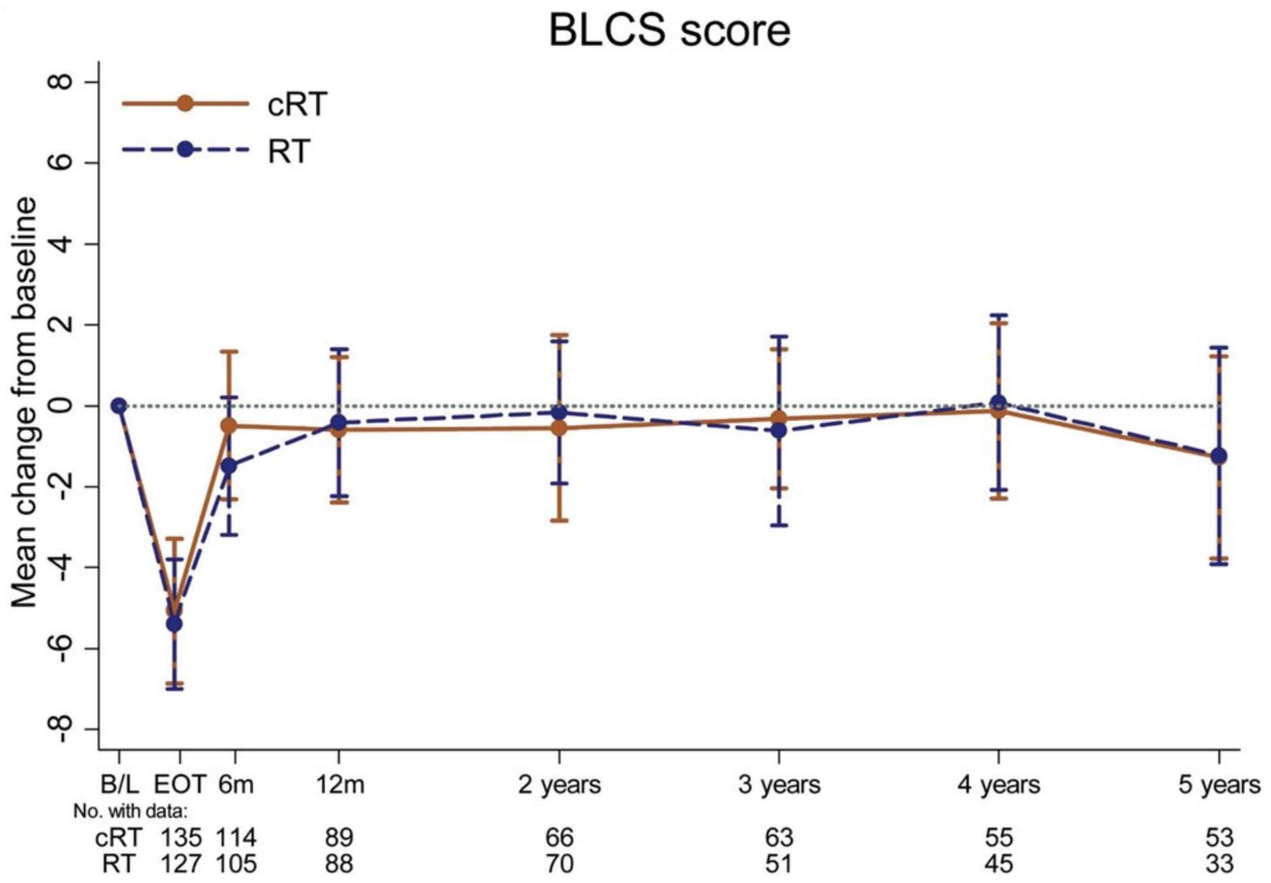






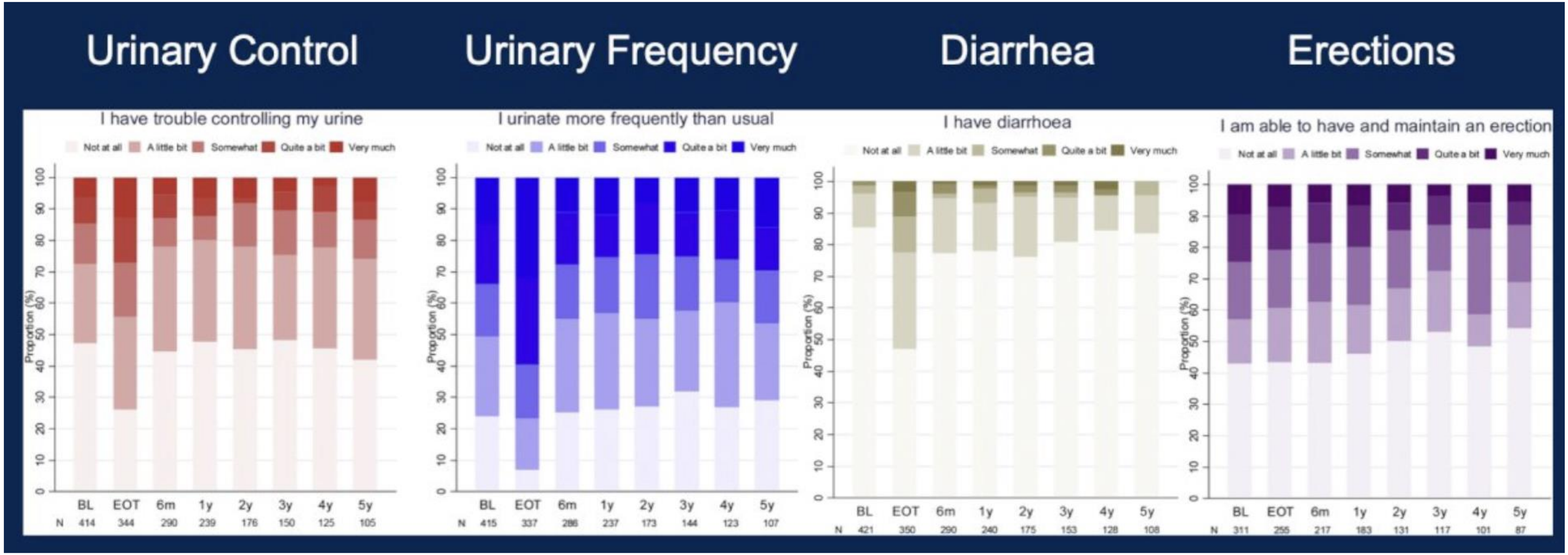
Radiochimiothérapie concomitante versus Radiothérapie seule

Phase 3 HALL Eur Urol 2022



Radiochimiothérapie concomitante versus Radiothérapie seule

Phase 3 HALL Eur Urol 2022



Meilleurs candidats à la préservation vésicale ?

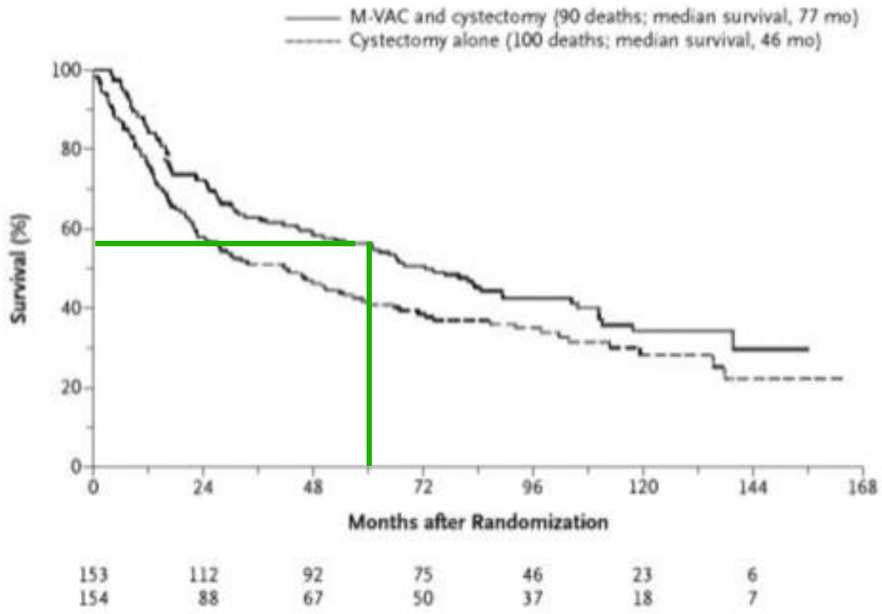
- Tumeur Urothéliale vs autres sous types
- cT2-T3a
- Unifocal
- **Résection préthérapeutique macroscopiquement complète**
- < 5-7cm
- Pas d’hydronéphrose
- **Pas de CIS étendu**
- Bonne fonction vésicale

CHIMIO améliore la survie avant CYSTECTOMIE

- **GROSSMAN NEJM 2003**
  SG 5 ans 57% vs 43% (3 MVAC versus non)

- **ABC Méta Analyse Eur Urol 2005**
  Bénéfice de 5% en SG à 5 ans (Platines versus non)

- **PFISTER GETUG-AFU V05 VESPER Trial JCO 2023**
  SG 5 ans 64% vs 56% DD MVAC (6) versus GEM CIS (4)
  10% au moins 1 complication sévère postopératoire



→ **NéoA > Adj**
90-95% cT2N0 => 22-37% pT3 ou N+
36-42% ypT0N0

Quid avant RADIOTHERAPIE + CHIMIO ? => TMT avec ou sans CT néoadj ?

CHIMIOTHERAPIE avant RADIOTHERAPIE +/- CT

Peu de données prospectives & Pas d'impact sur la survie globale

Study	Study Type	Study Design	N	NAC Regimen	Clinical CR	Overall Survival (OS)	Notes
RTOG 88-02	Ph 2	1: NAC -> ChemoRT	91	MCV x 2	75%	4-yr OS: 62%	Split course RT
RTOG 89-03	Ph 3	1: NAC -> ChemoRT 2: ChemoRT alone	123	MCV x 2	1: 61% 2: 55%	1: 5-yr OS 48% 2: 5-yr OS 49%	Split course RT
BA06 30894	Ph 3	1: NAC -> RT or surg 2: RT or surg	976	MCV x 3	--	NAC 10-yr OS by 6%	Included preop RT (n=66)
BC2001 (NAC subset, exploratory)	Ph 3	1: NAC-> RT 2: NAC -> ChemoRT	117	Varied; 69% Gem/Cis	--	1: 5-yr OS: 46% 2: 5-yr OS: 48%	No diff in any endpoints

57% survie à 5 ans / 20% de cystectomies

RADIOCHIMIOTHERAPIE
versus CHIMIOTHERAPIE PUIS CHIRURGIE ?

RADIOCHIMIOTHERAPIE
versus CHIMIOTHERAPIE PUIS CHIRURGIE ?

Radiothérapie avant Cystectomie versus (Chimio avant) Cystectomie

Rétro COLE

IJROBP 1995

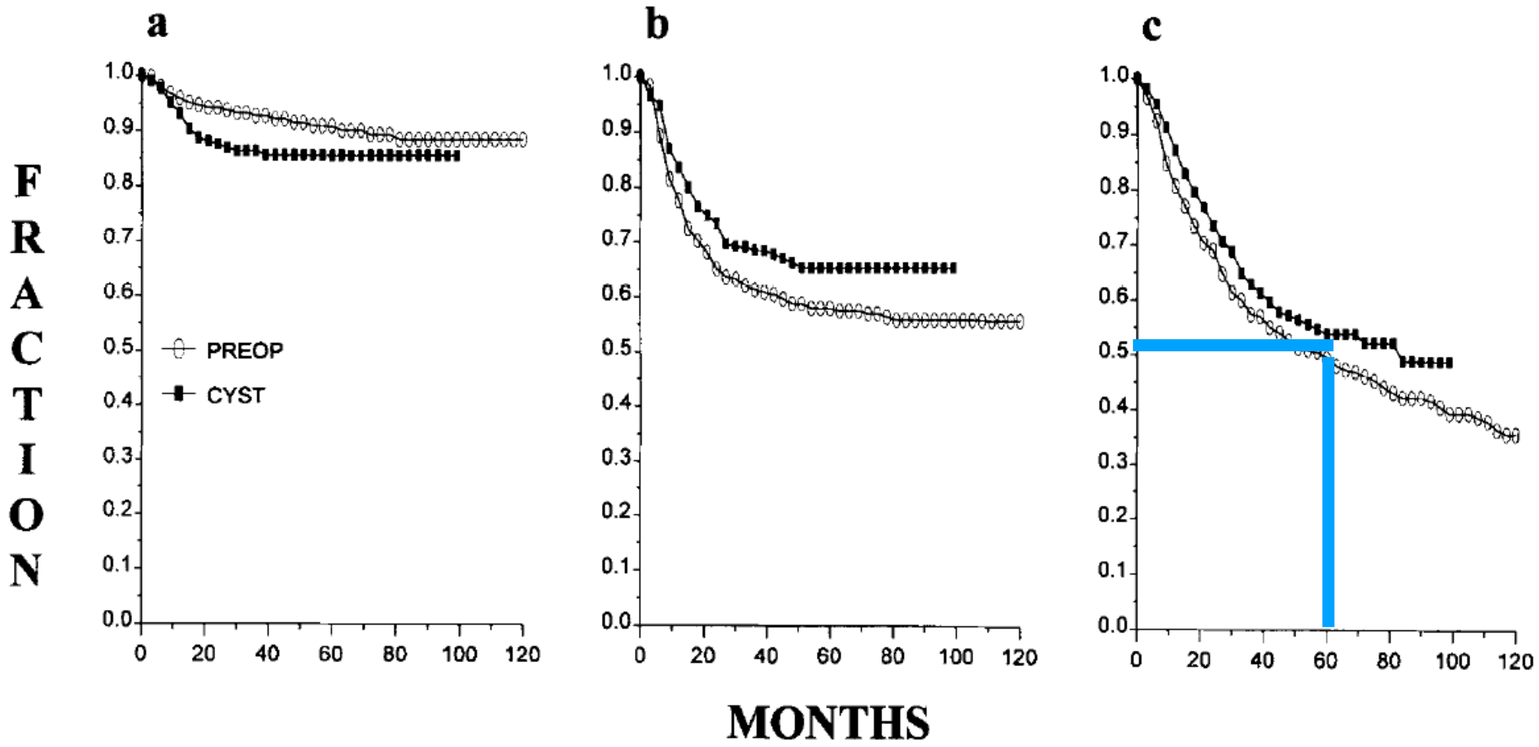


Fig. 1. Actuarial local control (a), disease freedom (b), and overall survival (c) for patients in the PREOP (open circles) and CYST groups (closed squares). The numbers of patients at risk at 5 years for the PREOP and CYST groups were 137 and 60 (a), 131 and 57 (b), and 141 and 61 (c).

Survies identiques à 5 ans 50% (Chimio MVAC associée dans le bras chir seule)

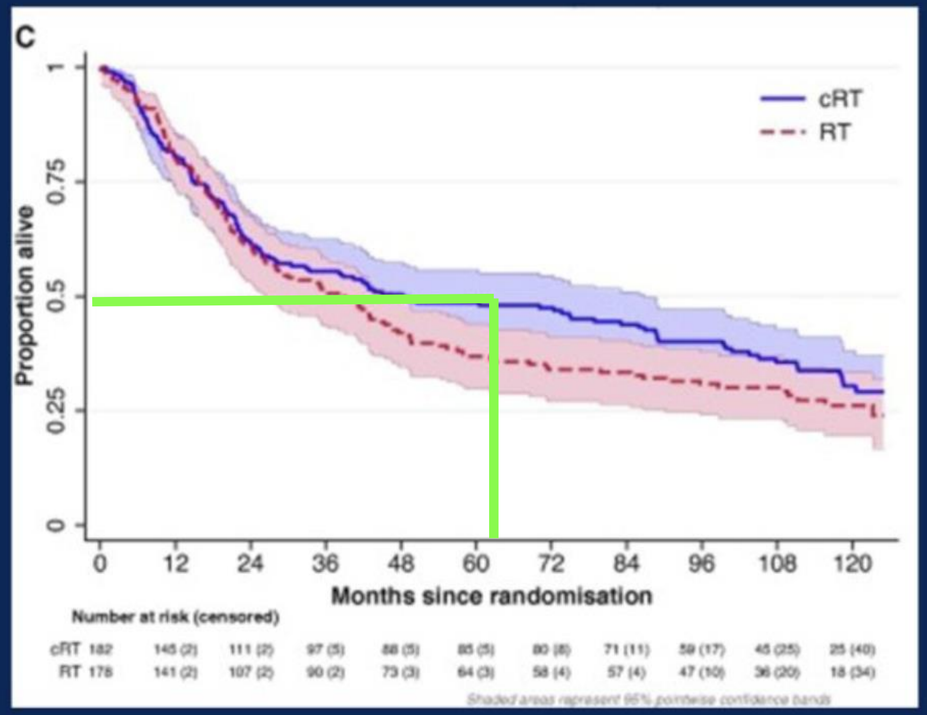
RADIOCHIMIOTHERAPIE
versus CHIMIOTHERAPIE PUIS CHIRURGIE ?

AUCUN essai randomisé « moderne » mené jusqu'à son terme

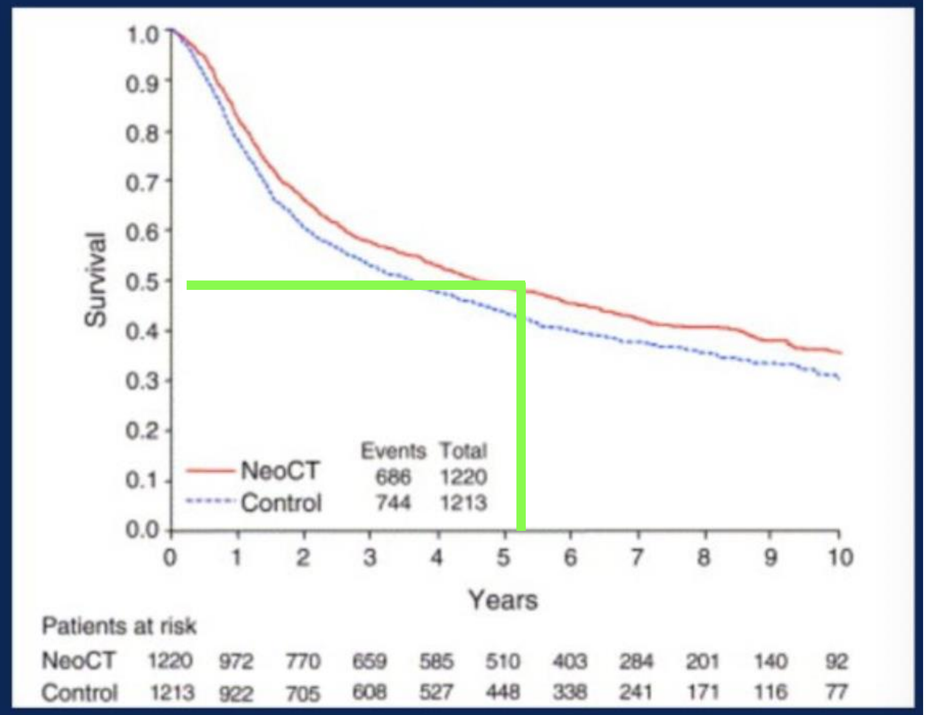
RADIOCHIMIOTHERAPIE
versus CHIMIOTHERAPIE PUIS CHIRURGIE ?

50-55% de survie globale à 5 ans

Bladder Preservation vs Radical Cystectomy



BC 2001
Hall et al. *Eur Urol* 2022



Neoadjuvant chemotherapy Meta-analysis
Vale et al. *Eur Urology* 2005

RADIOCHIMIOTHERAPIE
versus CHIMIOTHERAPIE PUIS CHIRURGIE ?

Nombreuses Méta analyses contradictoires :

ARCANGELI Crit Rev Oncol Hematol 2015	TMT > Cystectomie
FAHMY Urol Oncol 2018	TMT = Cystectomie
AL-QUDIMAT Front Surg 2023	TMT < Cystectomie

→ **Basées en majorité sur des Etudes rétrospectives avec nombreux biais :**

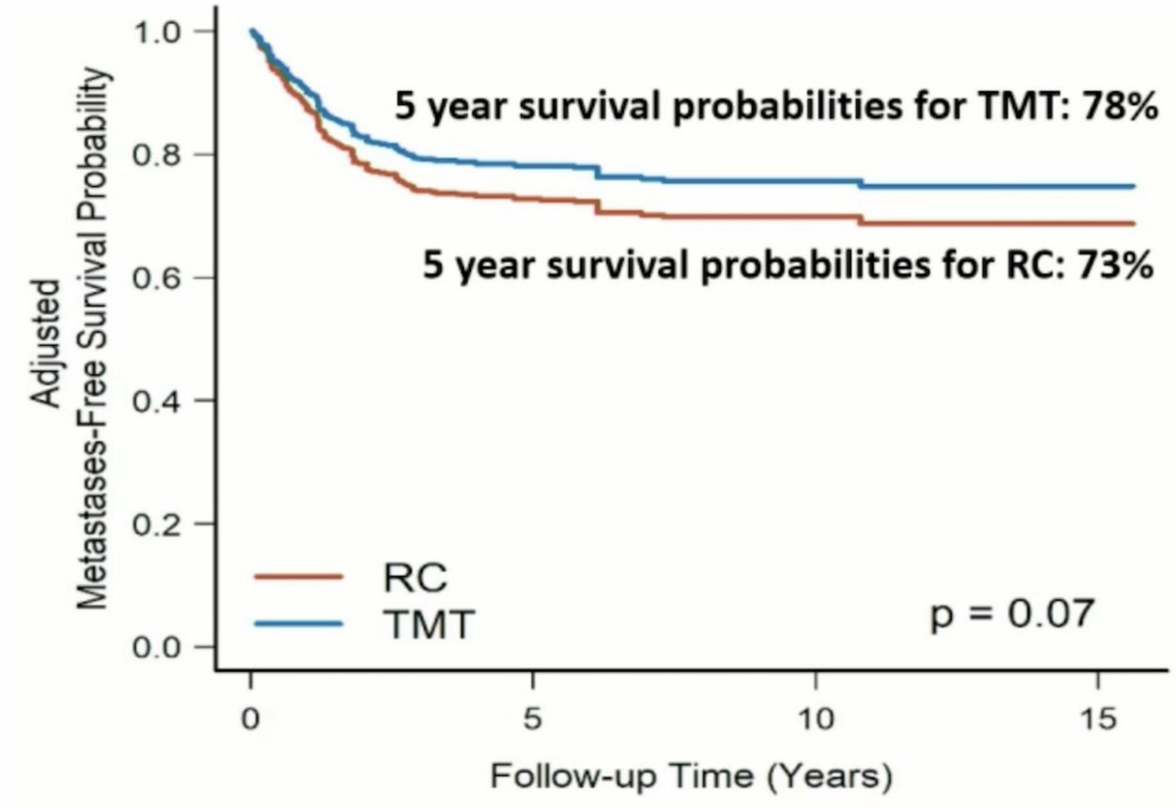
- TMT sous estime le risque T3-4 en N+
- Patients treated with TMT were generally older than those who underwent RC, and had more co-morbidities, thus they may have poorer prognosis

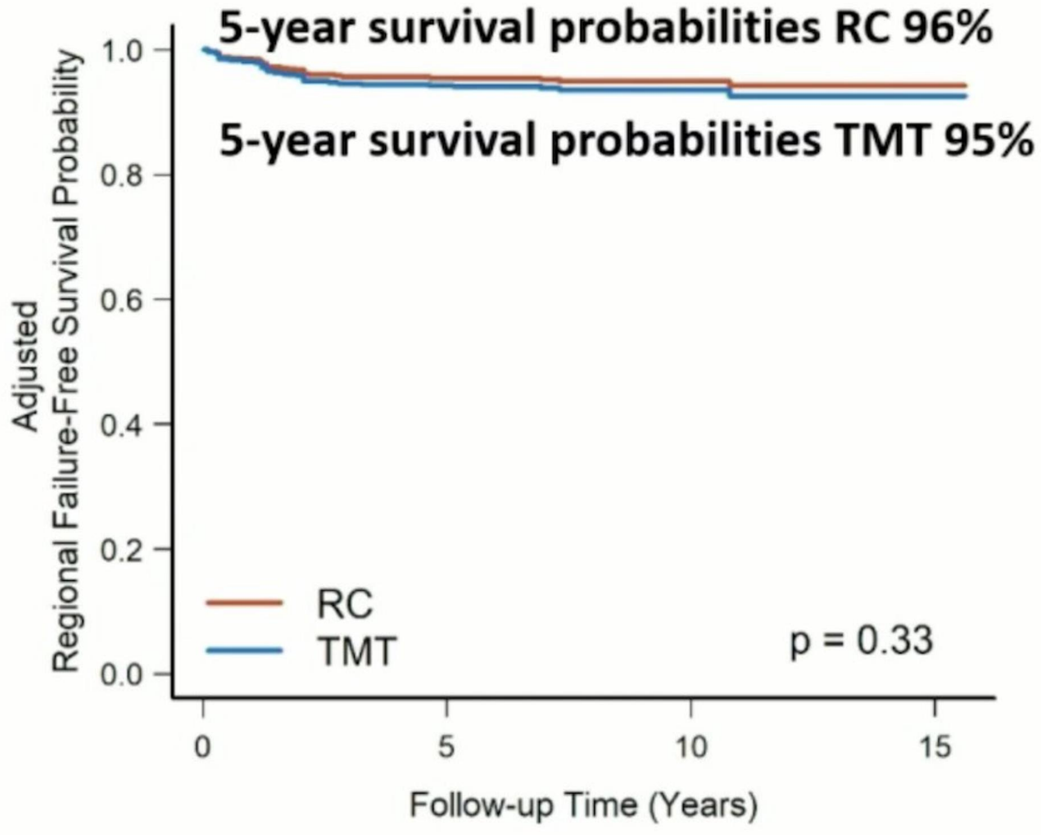
RADIOCHIMIOTHERAPIE versus CHIMIOTHERAPIE PUIS CHIRURGIE ?

Rétro ZLOTTA Lancet Oncol 2023 = 703 patients cT2-4N0M0

Cystectomie versus Trimodalité (debulking transurethral resection of the tumour, followed by concurrent radio-sensitizing chemotherapy and external beam radiation)

lésion unifocale <7cm / pas d'hydronéphrose bilat / pas de CIS étendu





NCCN Guidelines Version 4.2024
Muscle Invasive Bladder Cancer

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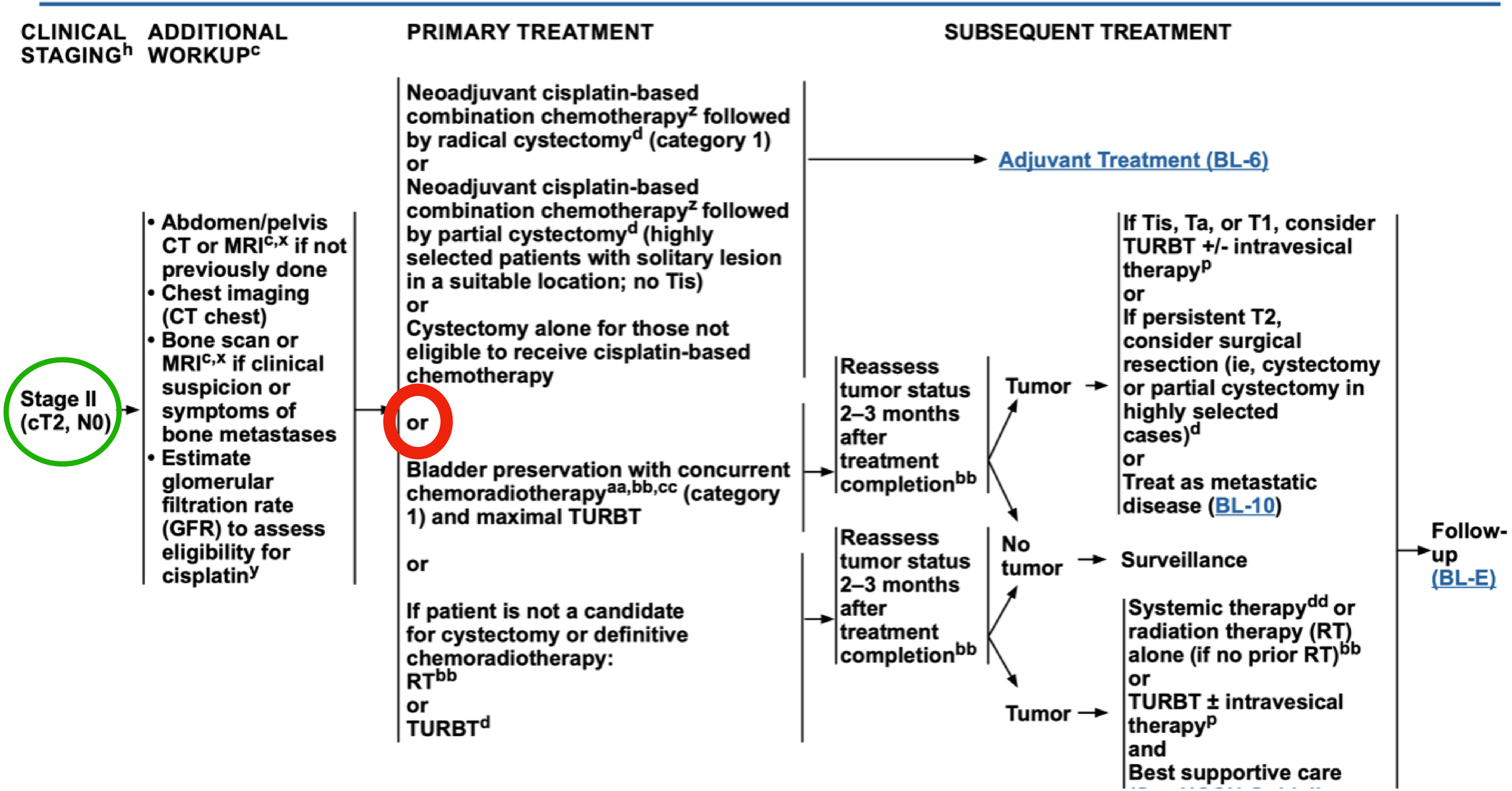

National Comprehensive Cancer Network®

NCCN Guidelines Version 4.2024
Muscle Invasive Bladder Cancer

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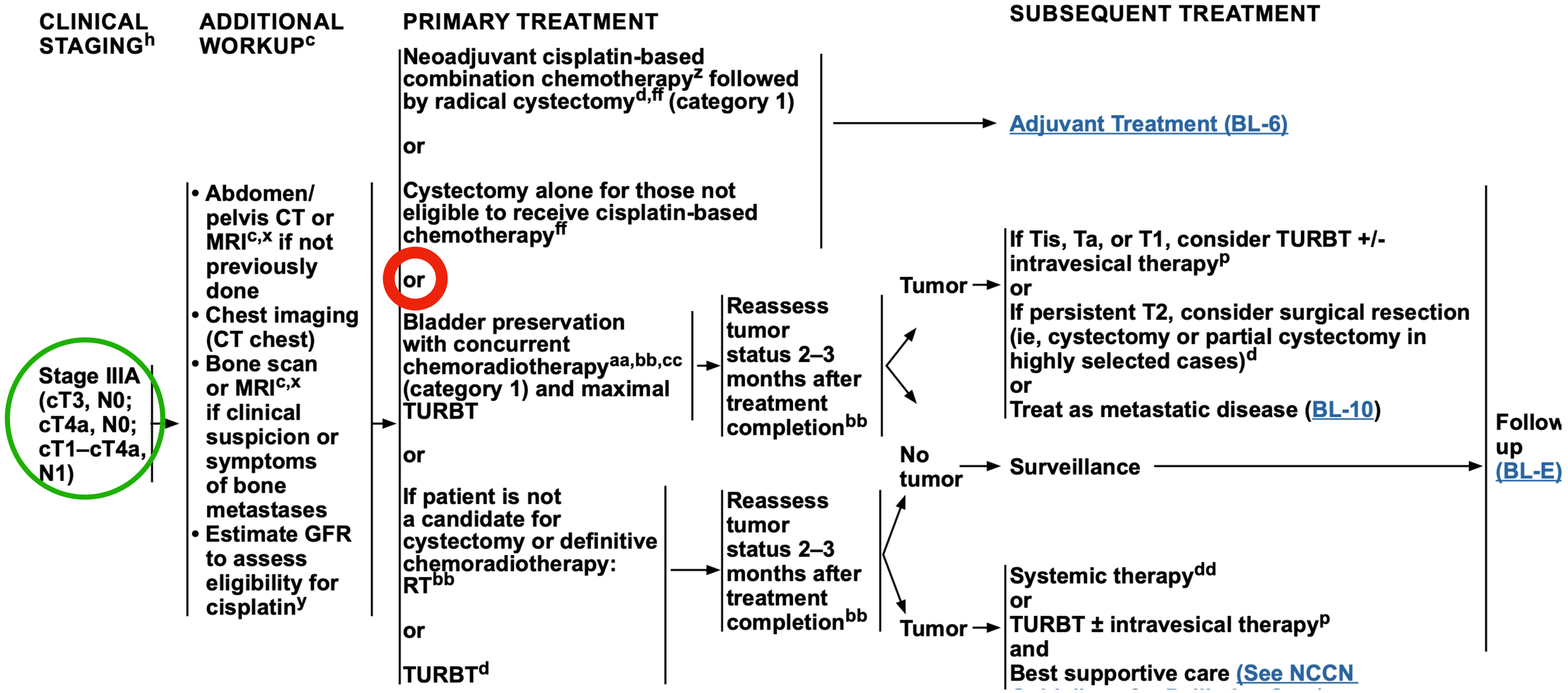


Association
de la Radiochimiothérapie
et de l’Immunothérapie

IMMUNOTHERAPIE avant CYSTECTOMIE

Table 2. Summary of completed, active, or currently recruiting studies with immunotherapy agents without chemotherapy.

Study	Phase	Treatment	Patients Included	pCR	Survival
PURE-01 [1] [21]	2	PEM	80	39%	-
PURE-01 (VH)	2	PEM	19	16%	-
PANDORE [30]	2	PEM	34	29.4%	-
ABACUS	2	AZ	95	31%	1 y RFS: 79%
AURA (Cohort 2)	2	A; PG + A	56	36% (A) vs. 18% (PG + A)	-
NABUCCO (cohort 1)	2	N + IPI	24	46%	-
NABUCCO (cohort 2)	2	2a: N (1) + IPI (3) 2b: N (3) + IPI (1)	15 15	43% 7%	-
MDACC	2	DU + TRE	28	37.5%	1 y RFS: 82.8% 1 y OS: 88%
MDACC (VH)	2	DU + TRE	7	57%	-
DUTRENEO	2	DU +TRE, PG	61	"Hot" arm: 34.8% (DU + TRE) vs. 36.4 (PG) "Cold" arm: 68.8% (PG)	-
CA209-9DJ	2	Cohort 1: N (3)/Cohort 2: N(1) + I(3)	30	Cohort 1: 13% Cohort 2: 7%	12 m RFS C1: 77% 12 m RFS C2: 68%.

30-40% pCR

IMMUNOTHERAPIE + CHIMIO avant CYSTECTOMIE

Table 3. Summary of completed, active, or currently recruiting studies with immunotherapy agents in combination with chemotherapy.

Study	Phase	Treatment	Patients Included	pCR	Survival
HCRN GU 114-88 (Cohort 1)	1b/2	CG + PEM	43	44.4%	Estimated 36 m RFS: 63% Estimated 36 m OS: 82%
HCRN GU 114-88 (Cohort 2)	1b/2	G + PEM	37	45.2%	Estimated 12 m RFS: 74.9% Estimated 12 m OS: 93.8%
lccc1520 trial	2	C (35)G + PEM	39	36%	-
BLASST-1	2	CG + N	41	65.8 (≤ypT1N0)	12 m PFS: 85.4%
SAKK 06/17	2	CG + DUR	61	34%	OS at 2 years: 87.3%
NCT02989584	2	AZ → CG + AZ → AZ	44	41%	No relapse in <ypT2N0 patients.
AURA (cohort 1)	2	CG + Av vs. dd-MVAC +Av	28 28	32% 43%	- -
NIAGARA	3	CG + DUR → DUR	1050 to include	-	-
KEYNOTE 866	3	PG + PEM → PEM	870 to include	-	-
ENERGIZE	3	PG + N ± LM	1200 to include	-	-
SWOG-GAP	2	Ca + G + Av	196 to include	-	-
NEMIO	2	ddMVAC + DUR	120 to include	-	-
RETAIN-2	2	AMVAC + N	71 to include	-	-
NCT04383743	2	MVAC + PEM	17 to include	-	-

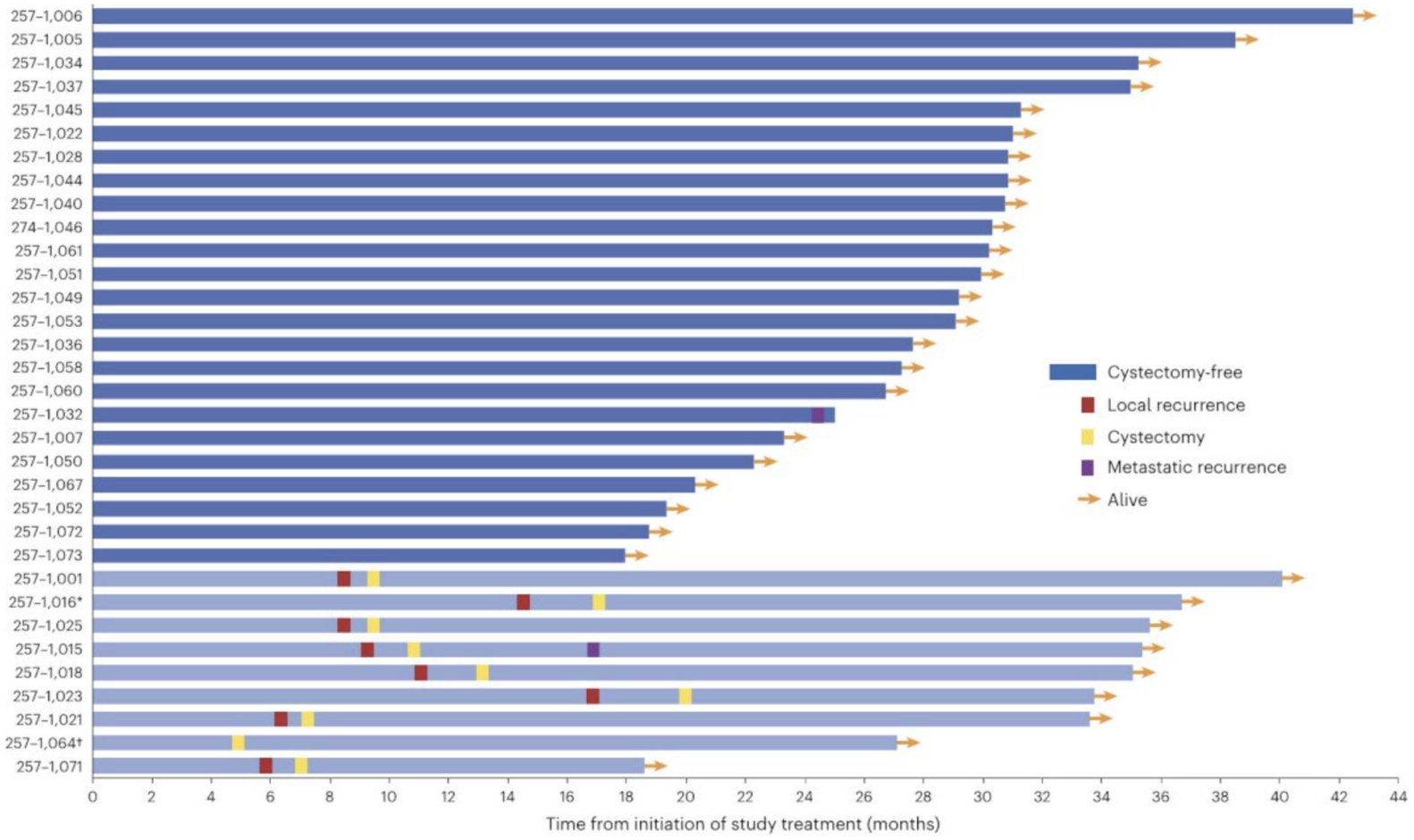
Abbreviations: Av: avelumab, AMVAC: accelerated MVAC, C: cisplatin, Ca carboplatin, ddMVAC: dose-dense MVAC, DUR: durvalumab, G: gemcitabine, LM: linrodostat mesylate, N: nivolumab, OS: overall survival, pCR: pathological complete response PEM: pembrolizumab, RFS: recurrence-free survival.

35-45% pCR

Traitement Systémique SANS traitement local ?

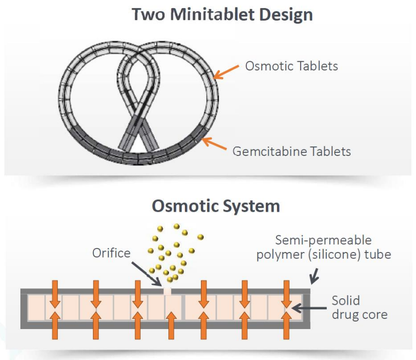
Phase 2 GALSKY Nat Med 2023 = 76 patients GEM CIS NIVOLUMAB néoadj

Moreover 23/33 patients avoided local therapy and 9/33 eventually underwent a radical cystectomy:

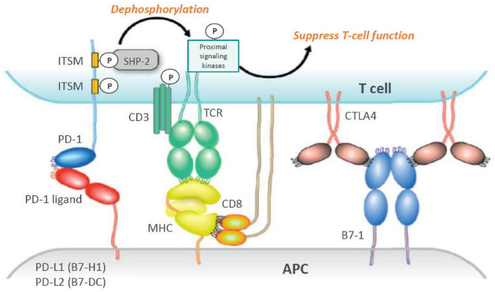


Traitement Systémique SANS traitement local ?

TAR-200 (Gemcitabine)



Immunotherapy- PD-1 Inhibition



Study Schema

Initial Diagnosis Pre-screening
TURBT (within 90 days of randomization)
(Note: This is outside of the clinical trial)

Population:
- MIBC, cT2-T4a, N0, M0, not receiving RC
- Stratification factors (based on screening re-TURBT):
  1. **Completeness**: Visibly complete vs. incomplete (residual tumor must be <3-cm)
  2. **Tumor Stage:** T0 vs. Ta/T1/Tis vs. T2-T4a

1:1

Arm 1: TAR-200 + Cetrelimab
- Cetrelimab will be dosed every 3 weeks through 18 months.
- TAR-200 will be dosed every 3 weeks (indwelling) for the first 18 weeks, on Week 24, and then every 12 Weeks through Study Year 3.

Arm 2: Investigator's Choice of Chemotherapy (cisplatin or gemcitabine) + Radiation Therapy
- Cisplatin once weekly for 6 weeks or Gemcitabine twice weekly for 6 weeks
- Radiation Therapy: conventional over 6.5 weeks or hypo-fractionated over 4 weeks

Efficacy Assessments:
- Assessments until participant develops histologically proven presence of muscle-invasive bladder cancer (MIBC), clinical evidence of nodal or metastatic disease (as assessed by RECIST 1.1 criteria), radical cystectomy (RC), death or at end of study, whichever occurs later
- Cystoscopy & Imaging* (CT/MRI): Weeks 18, 24, 36, 48, 60, 72, 84, 96, 120, 144, 168, 192, 216, and 240.

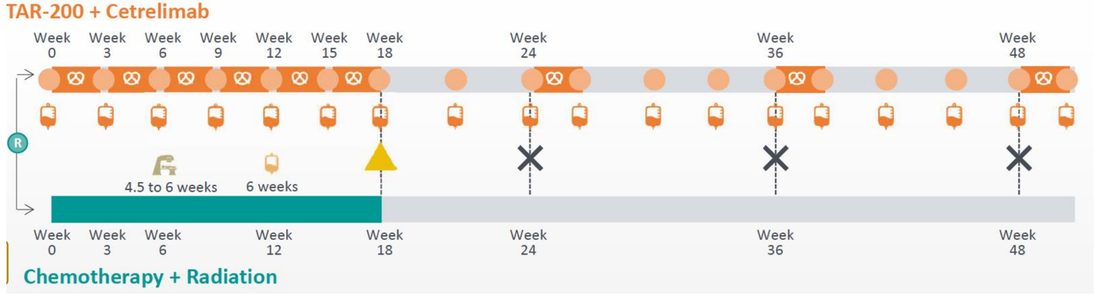
*Participants with local disease recurrence or progression only (with absence of N+ M+ disease) should continue to undergo imaging assessments per protocol timepoints. TURBT: Week 18 and when clinically indicated

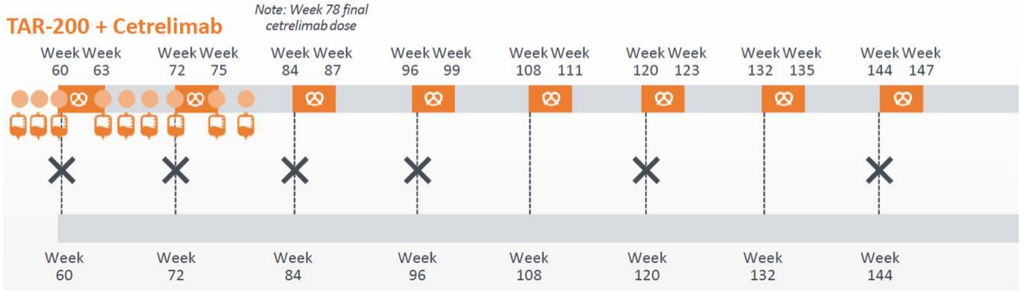
N=550 randomized:
Treatment Arm 1: 275/ Treatment Arm 2: 275

Janssen Research & Development, LLC

SunRISe-2

janssen | Pharmaceutical Companies of Johnson & Johnson





Association Radiochimiothérapie & Immunothérapie ?

Augmenter le taux de préservation vésicale et Réduire le risque de récidive M+ ?

BALAR
J Clin Oncol 2021

Pembrolizumab in combination with gemcitabine and concurrent hypofractionated radiation therapy

85% de réponses complètes à 12 semaines

WEICKHARDT
J Clin Oncol 2020

Whole bladder radiation therapy (RT; 64 Gy in 32 daily fractions, over 6.5 wk, combined with cisplatin (35 mg/m2 intravenously [IV] weekly, six doses) and pembrolizumab (200 mg IV q3 weeks, seven doses), both starting with RT

The DMFS at 2 yr is 78% with LRPFS at 2 yr of 87%

GUPTA
J Clin Oncol 2020

ADJUVANT TREATMENT
Nivolumab 480 mg IV q 4 weeks X 12 cycles
Starting within 90 days of completing radiation

Median follow-up is 8.9 months.

The estimated 6-month FFS rate is 88.2%

Association Radiochimiothérapie & Immunothérapie ?

Augmenter le taux de préservation vésicale
et Réduire le risque de récidive M+ ?

Phase 3 KEYNOTE-992 <u>en cours</u> :

CRT + either PEMBROLIZUMAB every 6 weeks or placebo
Treatment will continue with pembro or placebo Q6W for up to 9 doses

Radiotherapy regimens are :

- **conventional radiotherapy** consisting of 64 Gy at 2 Gy/fraction over 6.5 weeks (whole bladder with or without pelvic nodes)
- **hypofractionated radiotherapy** consisting of 55 Gy at 2.75 Gy/fraction over 4 weeks (whole bladder only).

Accepted concurrent radiosensitizing chemotherapy regimens are :

- **cisplatin monotherapy** (35 mg/m ² IV weekly)
- **5-fluorouracil** (500 mg/m ² on days 1-5 and days 22-26) **+ mitomycin C** (12 mg/m² on day 1)
- **gemcitabine monotherapy** (27 mg/m ² IV twice weekly).

Association Radiochimiothérapie & Immunothérapie ?

Augmenter le taux de préservation vésicale
et Réduire le risque de récidive M+ ?

Phase 3 RADIO <u>en cours</u> :

CRT + either DURVALUMAB every 4 weeks or placebo
Treatment will continue with pembro or placebo for up to 1 year

Radiotherapy regimens are :

- **hypofractionated radiotherapy** consisting of 55 Gy at 2.75 Gy/fraction over 4 weeks (whole bladder only).

Accepted concurrent radiosensitizing chemotherapy regimens are :

- **5-fluorouracil** (500 mg/m ^{2} on days 1-5 and days 22-26) **+ mitomycin C** (12 mg/m^2 on day 1)

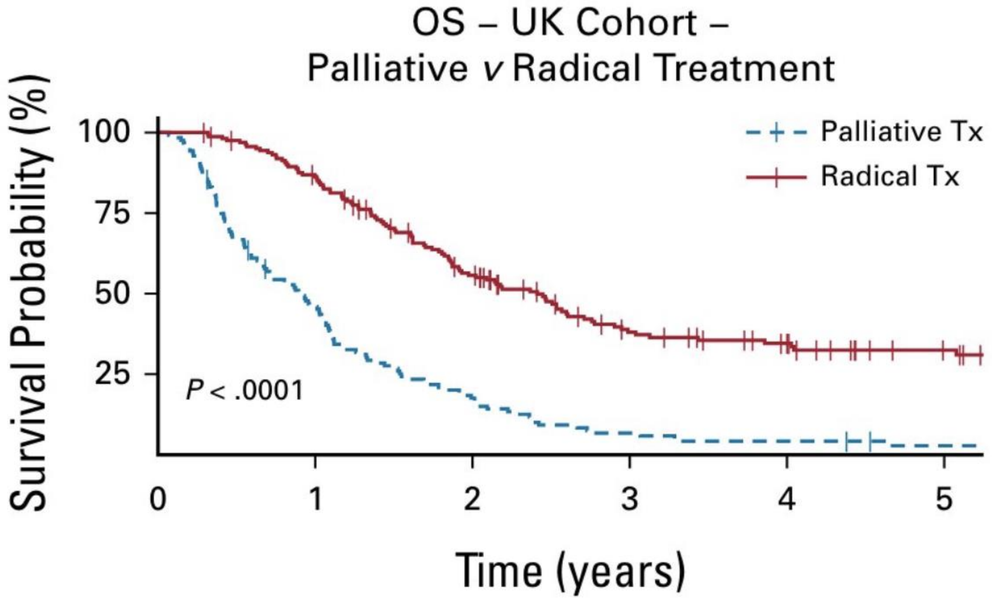
N+ cliniques et M+ candidats à un traitement local ?

Patients N+ sur le bilan préthérapeutique

Rétro SWINTON JCO 2023 = 287 patients

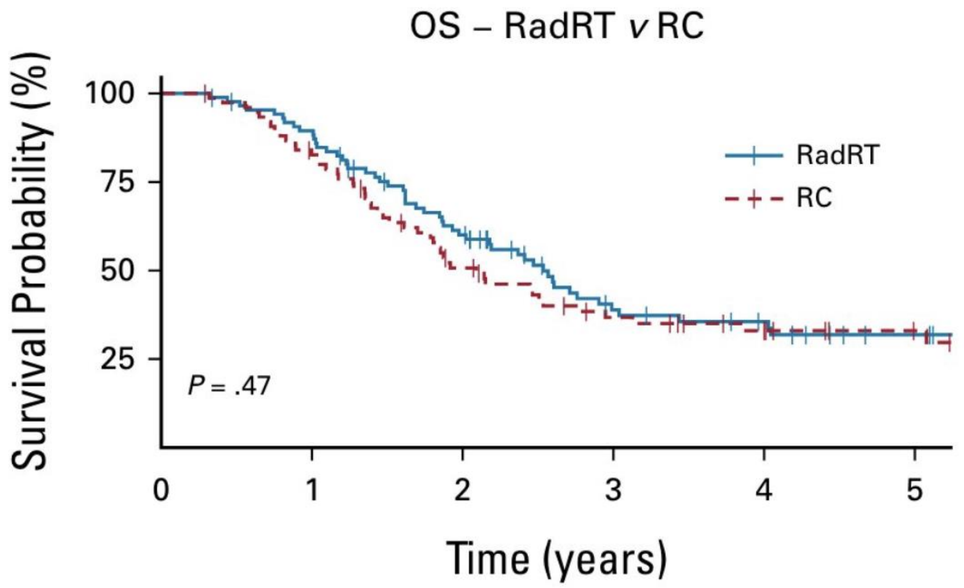
Cystectomie + 45% CTnéoadj (47% pT3-4 et 45% pN1-2 / 42% pNx)
ou Radiothérapie + 69% CTnéoadj (68% cT3-4 et 93% cN1-2)

versus CT ou Radiothérapie à dose palliative



No. at risk:

Palliative Tx	124	55	21	8	5	2
Radical Tx	163	137	83	46	35	22



No. at risk:

RadRT	87	76	48	24	19	12
RC	76	61	35	22	16	10

Patients N+ sur le bilan préthérapeutique

Phase 2 JOSHI J Immunotherapy Cancer 2023 = RXTH + Durvalumab 7 sem

Immune Checkpoint Inhibitors & RT in N+ Disease

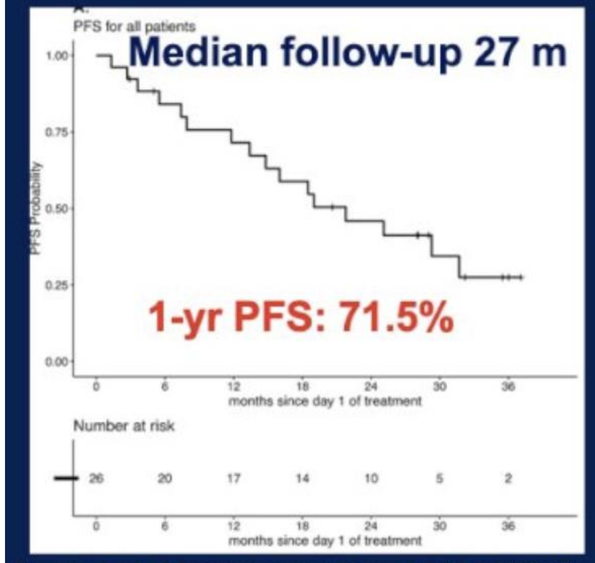
15

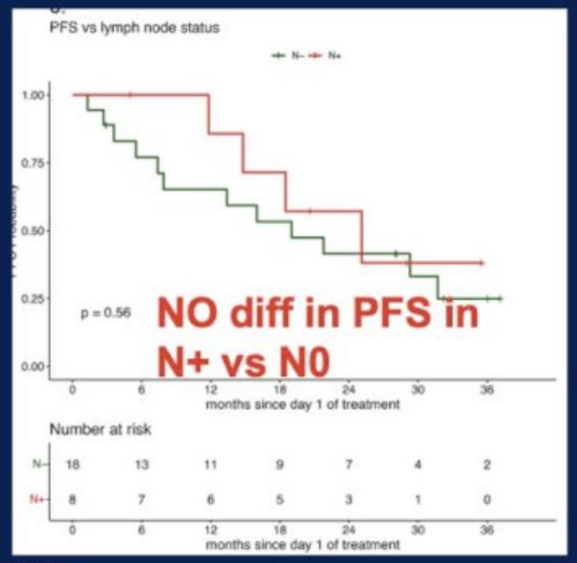
- DUART (NCT02891161) a phase II study (n=26)

cT2 (39%)
cT3 (23%)
cT4 (8%)
Any T N+ (30%)

→ durvalumab + RT (7 weeks) → Adjuvant durvalumab for 1 year

Primary endpoints: (A) 1-yr PFS and (B) disease control rate (DCR) post adjuvant durvalumab





Other Ongoing Trial in N+ Disease

PLUMMB (NCT02560636)
- now enrolling in RT dose reduced arms with pembrolizumab

INSPIRE (NCT04216290)
- cT2-4 N0-3
- Randomized: TMT +/- durvalumab followed by adjuvant durvalumab

Joshi et al. J Immunother Cancer 11:e006551, 2023

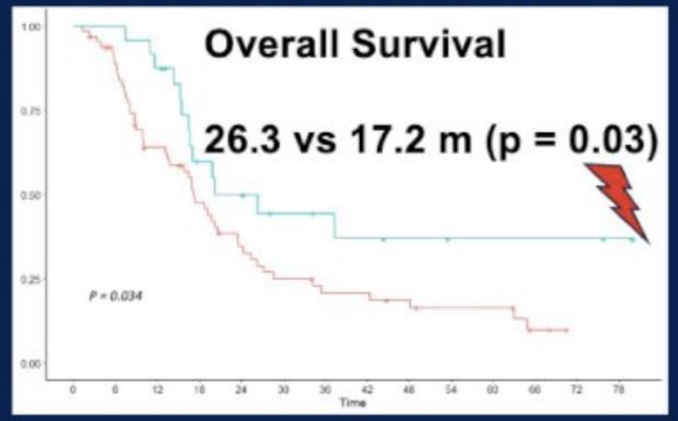
Patients N+ sur le bilan préthérapeutique

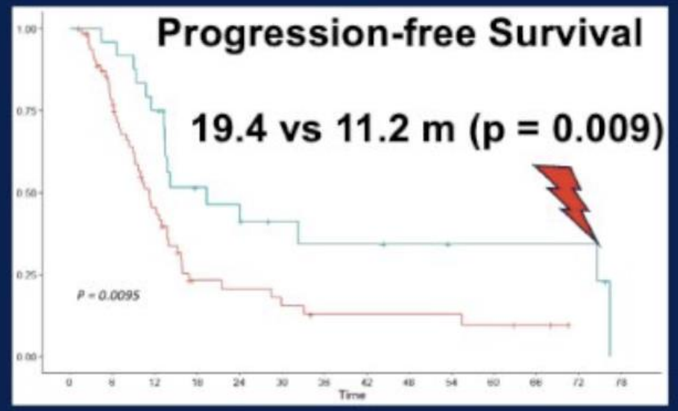
Rétro BERTUCCI Cancers 2023 = bénéfice en SSP et OS avec Radiothérapie

Consolidative RT for Metastases Confined to Pelvic & Retroperitoneal LNs after First-line Chemo

9

- 91% with urothelial histology & 61% with de novo metastatic disease
- **RTCT** = chemoRT or RT with > 30 Gy (n=24)
  - First line chemo response: PR (64%) & CR (17%)
  - 79% received chemoRT
  - LN distribution: pelvis (88%) & RP (29%)
- **CT** = RT (< 30 Gy) or no RT (n=65)
  - First line chemo response: PR (29%) & CR (17%)
  - LN distribution: pelvis (77%). & RP (51%)





Bertucci et al. Cancers 15: 2069, 2023

Patients M+ bons répondeurs à la CT

POWLES NEJM 2020 AVELUMAB en maintenance = SSP médiane de 5,7 mois

Potential Treatment Options in Multi-D Conversation

12

#1: Elect for Cystectomy

Radical Cystectomy

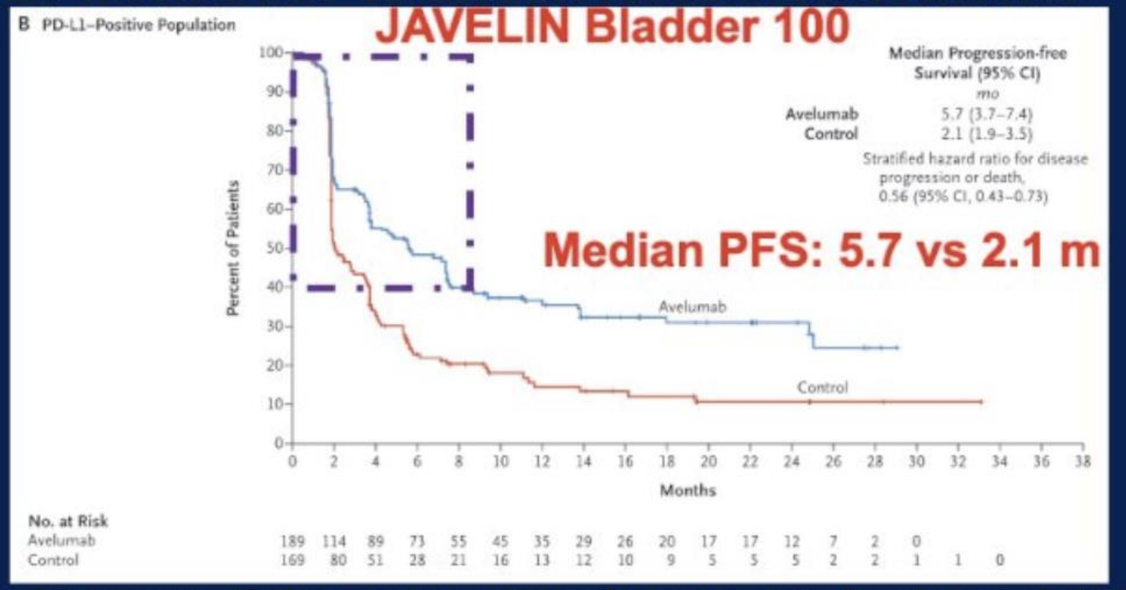
LOW RISK
≤ pT2
5-yr LR risk ~ 8%

≥ pT3

INTERMEDIATE RISK
(-)ve margins **AND**
LN yield ≥ 10
5-yr LR risk ~ 19-21%

HIGH RISK
(+)ve margins **OR**
LN yield < 10
5-yr LR risk ~ 41-46%

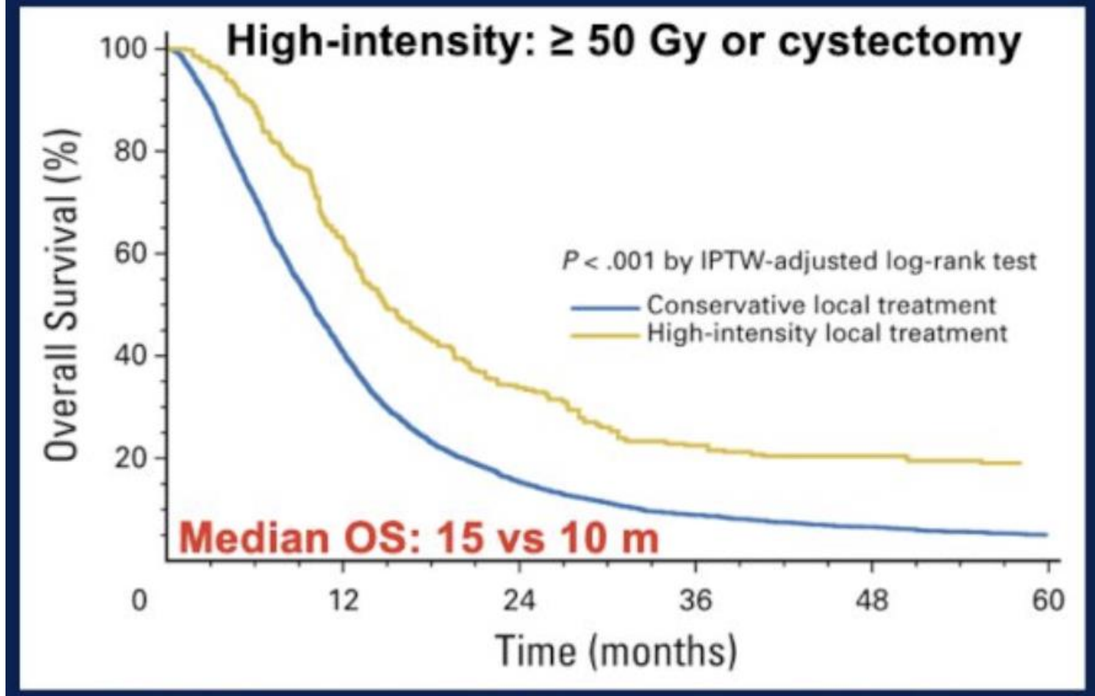
#2: Elect for maintenance avelumab



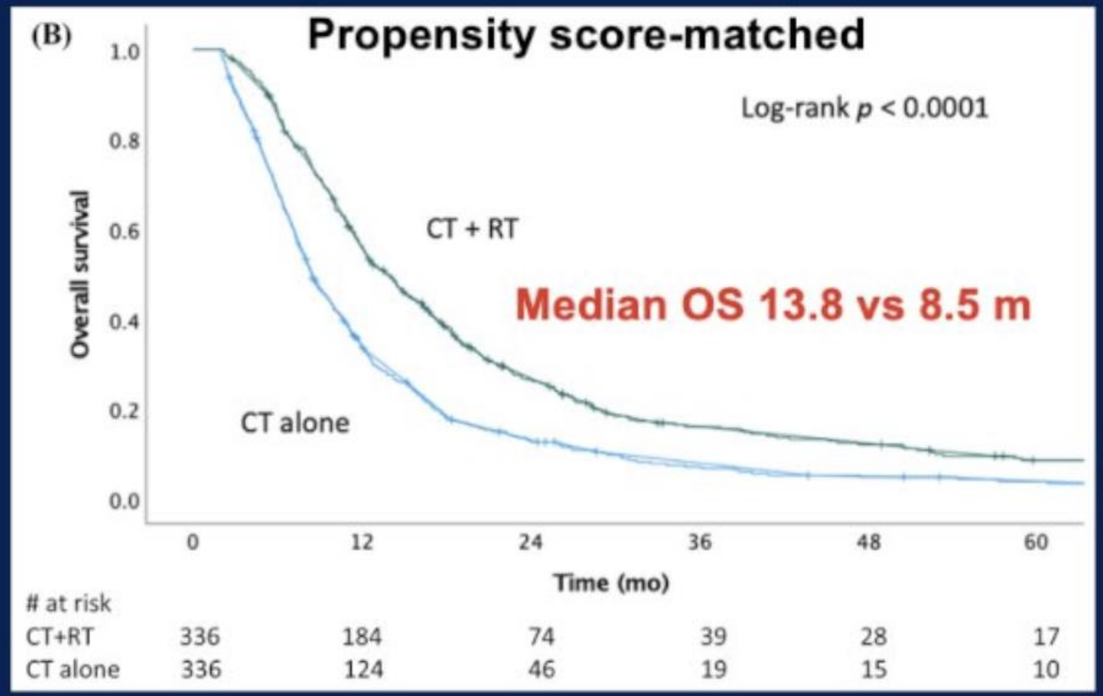
Are any of these progressive events in the pelvis?

Patients M+ bons répondeurs à la CT

Rétro NCBD JCO 2016 = Avantage en survie si traitement local associé



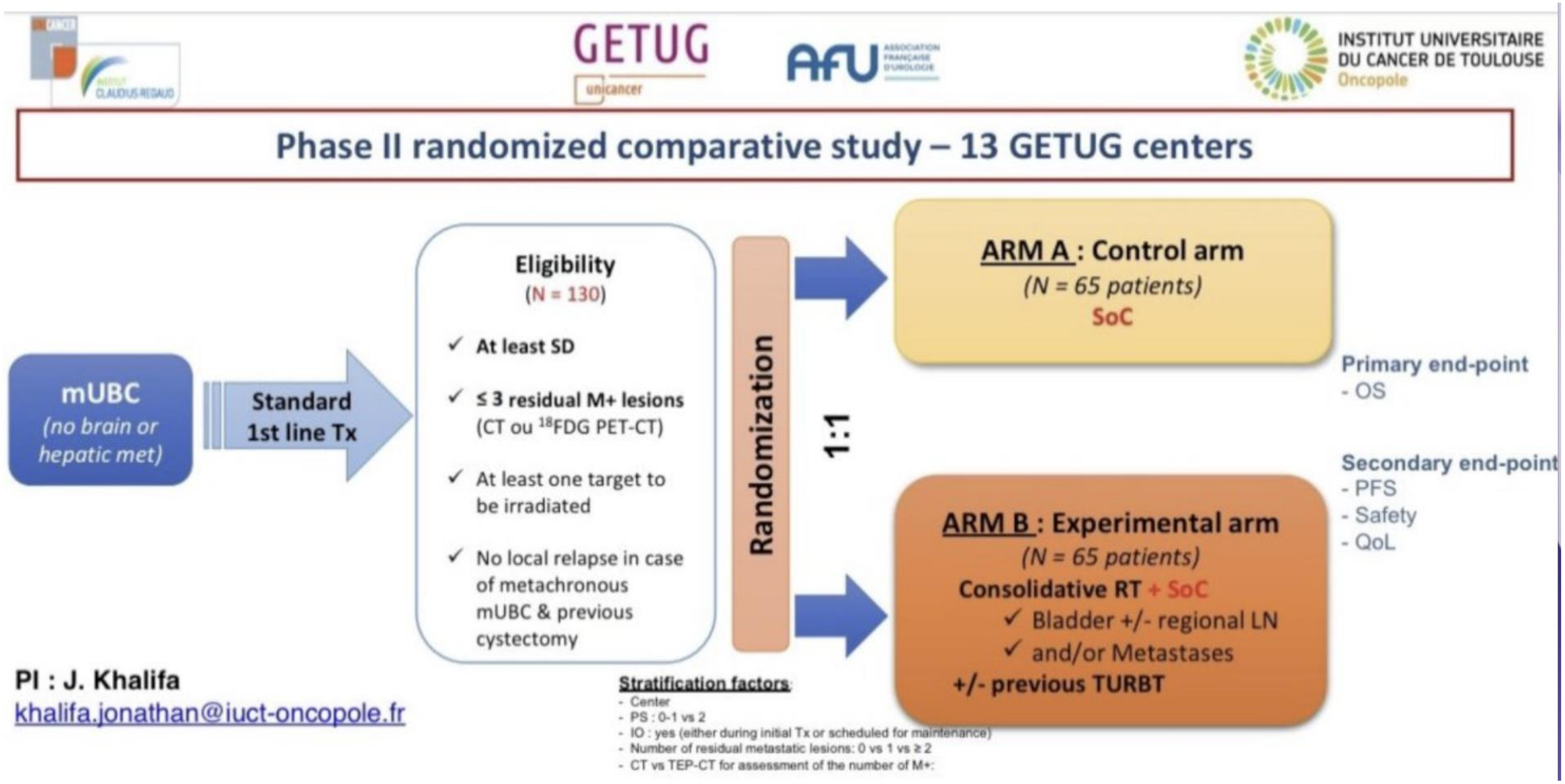
- NCDB analysis: ~3,500 pts with n=297 with high-intensity therapy s/p first line chemotherapy in metastatic bladder



- NCDB analysis: ~4,500 pts with n= 4122 with chemo alone vs n=337 (chemoRT)

Seisen et al. JCO 34(29): 3529-3536, 2016

Patients M+ bons répondeurs à la CT



Meilleurs candidats à la préservation vésicale ?

- Tumeur Urothéliale vs autre sous types
- cT2-T3a
- Unifocal
- **Résection préthérapeutique macroscopiquement complète**
- < 5-7cm
- Pas d'hydronéphrose
- **Pas de CIS étendu**
- Bonne fonction vésicale

★ cN+ ?

★ M+ bon répondeurs au traitement systémique ?

Radiothérapie adjuvante après Cystectomie

Radiothérapie adjuvante après Cystectomie

SARGOS Transl Androl Urol 2016

Table 1 Five-year cumulative incidence rates of loco-regional failure from published series according to the risk group

Group	Characteristics	LRR according to the published series (%)			
		Philadelphia	SWOG	Seoul	Europe
Low-risk	pT0–2	8	8	8	6
Intermediate-risk	pT3–4 with ≥ ten nodes and R0	19	20	21	18
High-risk	pT3–4 with < ten nodes or R1	41	41	46	45

R0, negative margins; R1, positive margins. LRR, loco-regional recurrence; SWOG, Southwest Oncology Group.

Radiothérapie adjuvante après Cystectomie

Phase 3 ZAGHLOUL
Int J Radiat Oncol Biol Phys 1992

Chirurgie +/- Radiothérapie adjuvante

236 patients cT3-4 / **80% carcinomes épidermoides**

LC 5 ans 87-93% versus **50% chirurgie seule**
DFS 5 ans 44-49% versus **25% chirurgie seule**

Phase 3 ZAGHLOUL
JAMA Surg 2018 / JCO 2019

Chimiothérapie adjuvante (4 Gmz Cis) +/- Radiothérapie adj

153 patients cT3 ou N+ R0 / **53% carcinomes urothéliaux**

LRFS 2 ans 96% versus **69% chimio seule**
DFS 2 ans 68% versus **56% chimio seule**
OS 2 ans 71% versus **60% chimio seule**

Radiothérapie adjuvante après Cystectomie

Phase 3 BART trial (India) <u>en cours</u> :

The key eligibility criteria include :

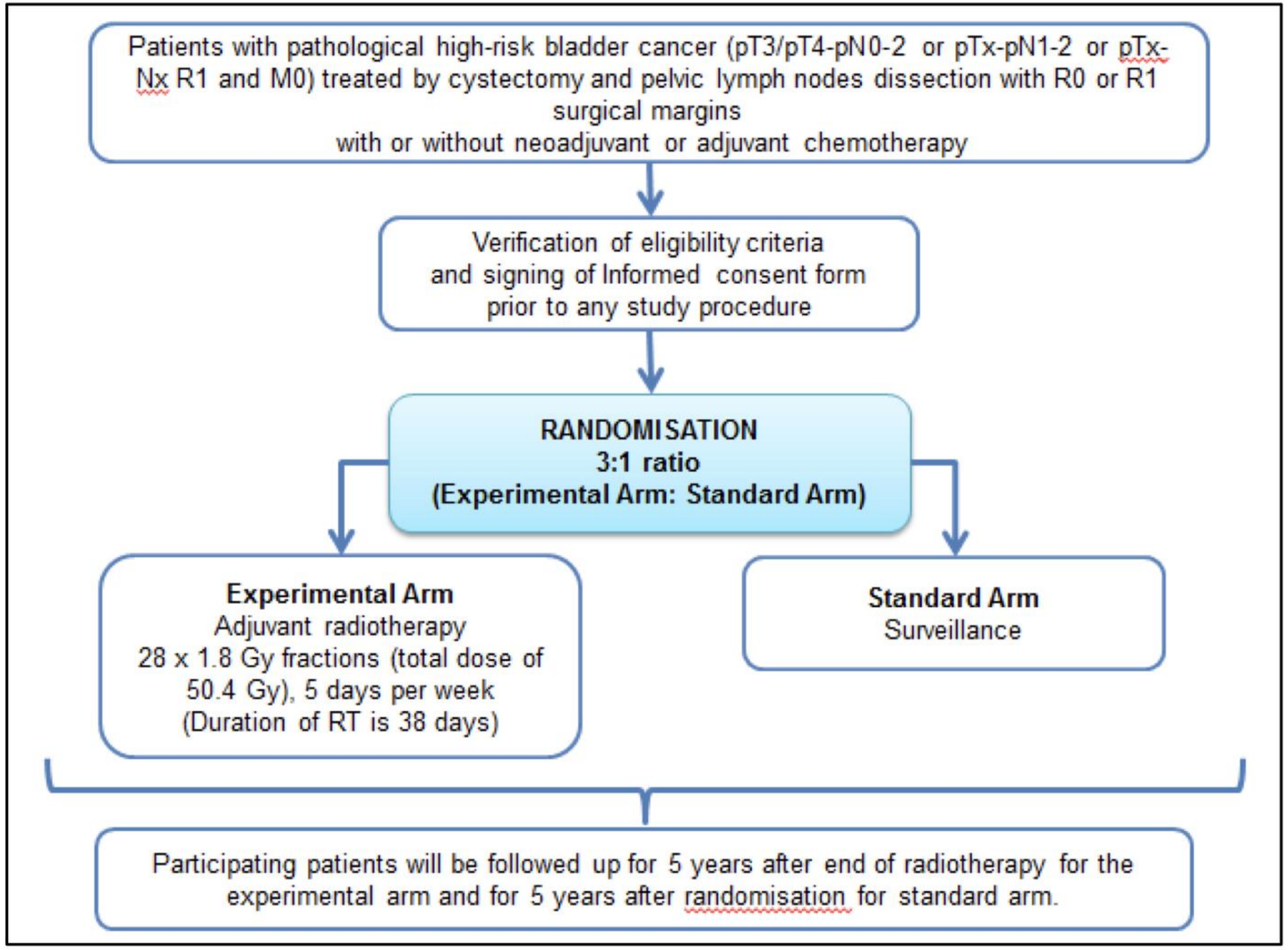
- ≥pT3
- node-positive (pN+)
- positive margins and/or nodal yield <10
- or neoadjuvant chemotherapy for cT3/T4/N+ disease

Adjuvant radiotherapy to cystectomy bed and pelvic nodes is planned with intensity-modulated radiotherapy to a dose of 50.4 Gy in 28 fractions using daily image guidance

Radiothérapie adjuvante après Cystectomie

« GETUG-AFU30 »

Adjuvant radiotherapy in patients with pathological high-risk bladder cancer: A randomised multicentre phase II study: Bladder-ART study



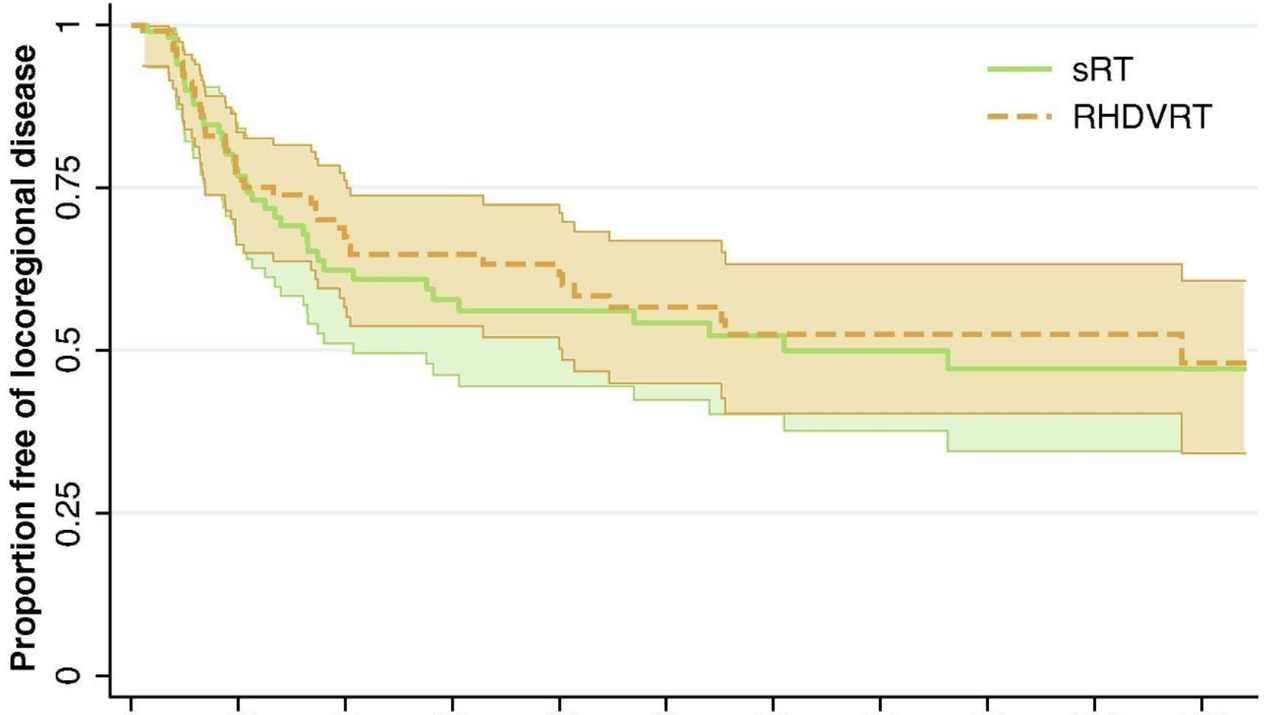
Evolutions en Radiothérapie

Quel volume de vessie traiter ?

Phase 3 HALL Eur Urol 2022

Radiothérapie Vessie entière versus Boost localisé

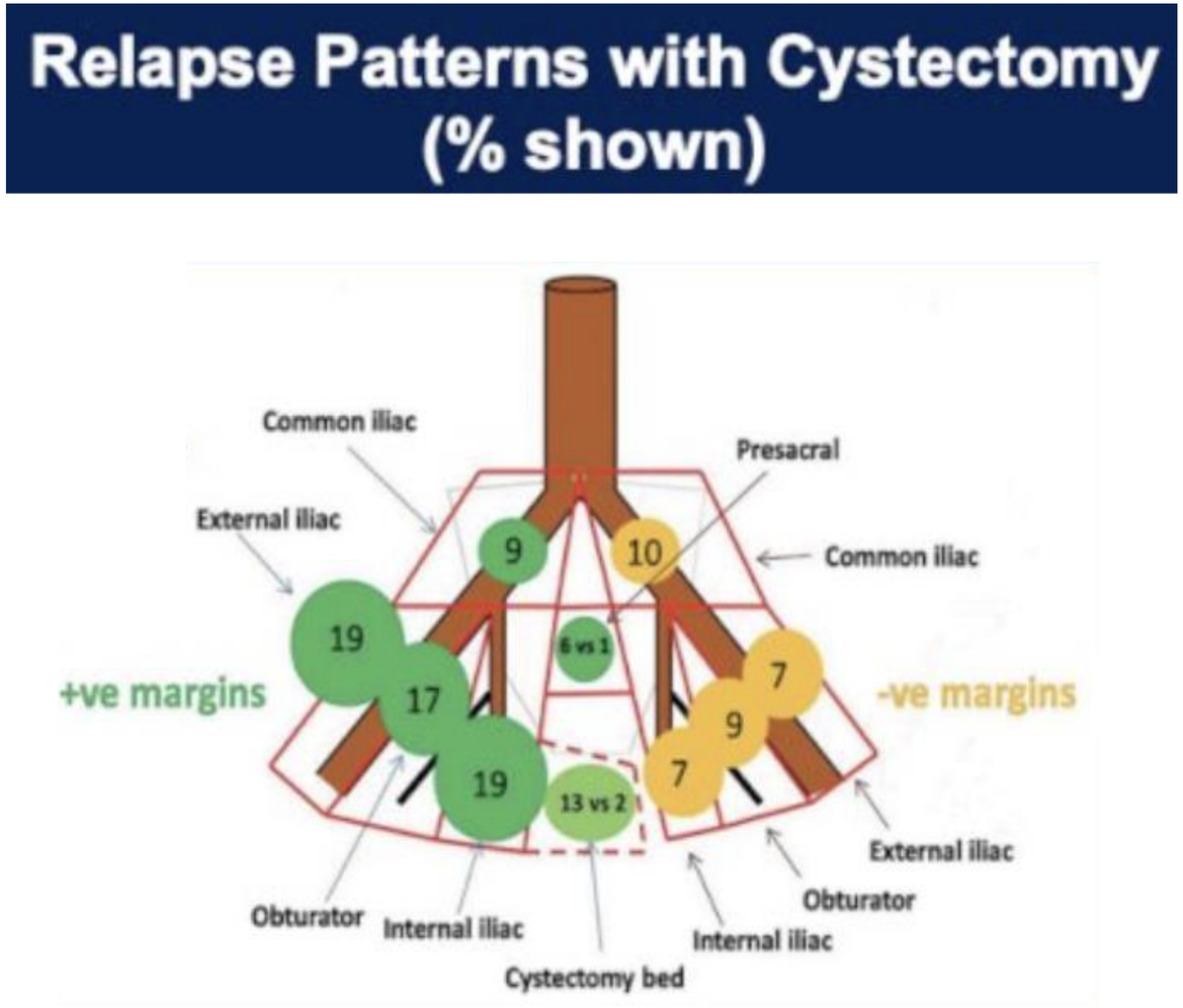
=> Efficacité et Toxicité urinaire et digestive identiques (14 vs 19% G3/4)

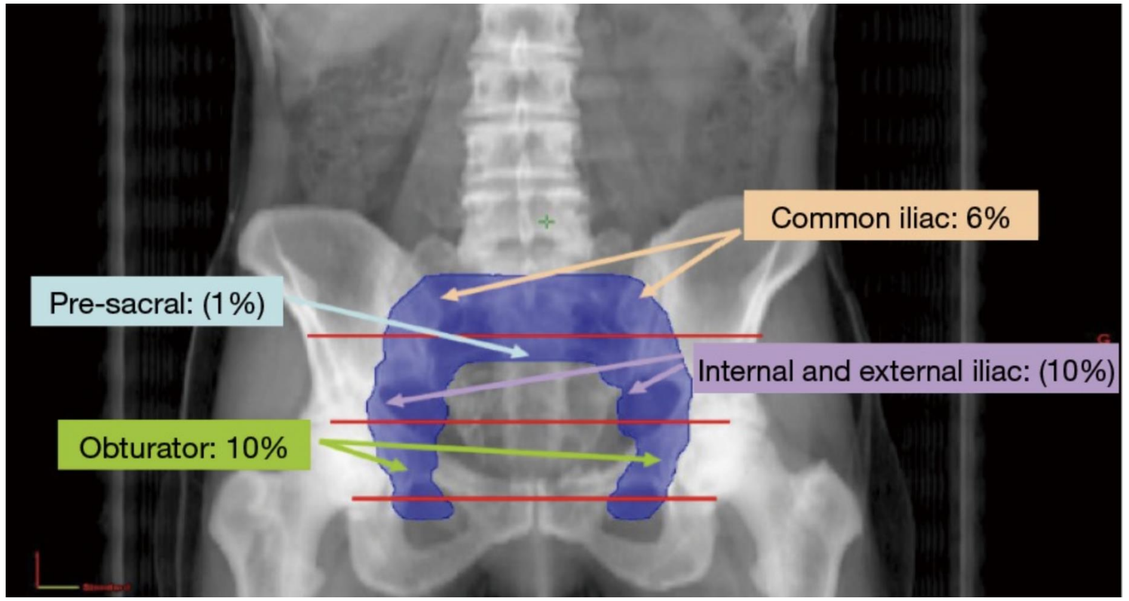


Number at risk (censored)

sRT	108	67 (19)	44 (31)	34 (38)	30 (41)	28 (42)	24 (45)	20 (48)	16 (51)	13 (54)	5 (62)
RHDVRT	111	66 (22)	50 (31)	43 (36)	38 (39)	31 (43)	25 (47)	21 (51)	18 (54)	15 (57)	9 (62)

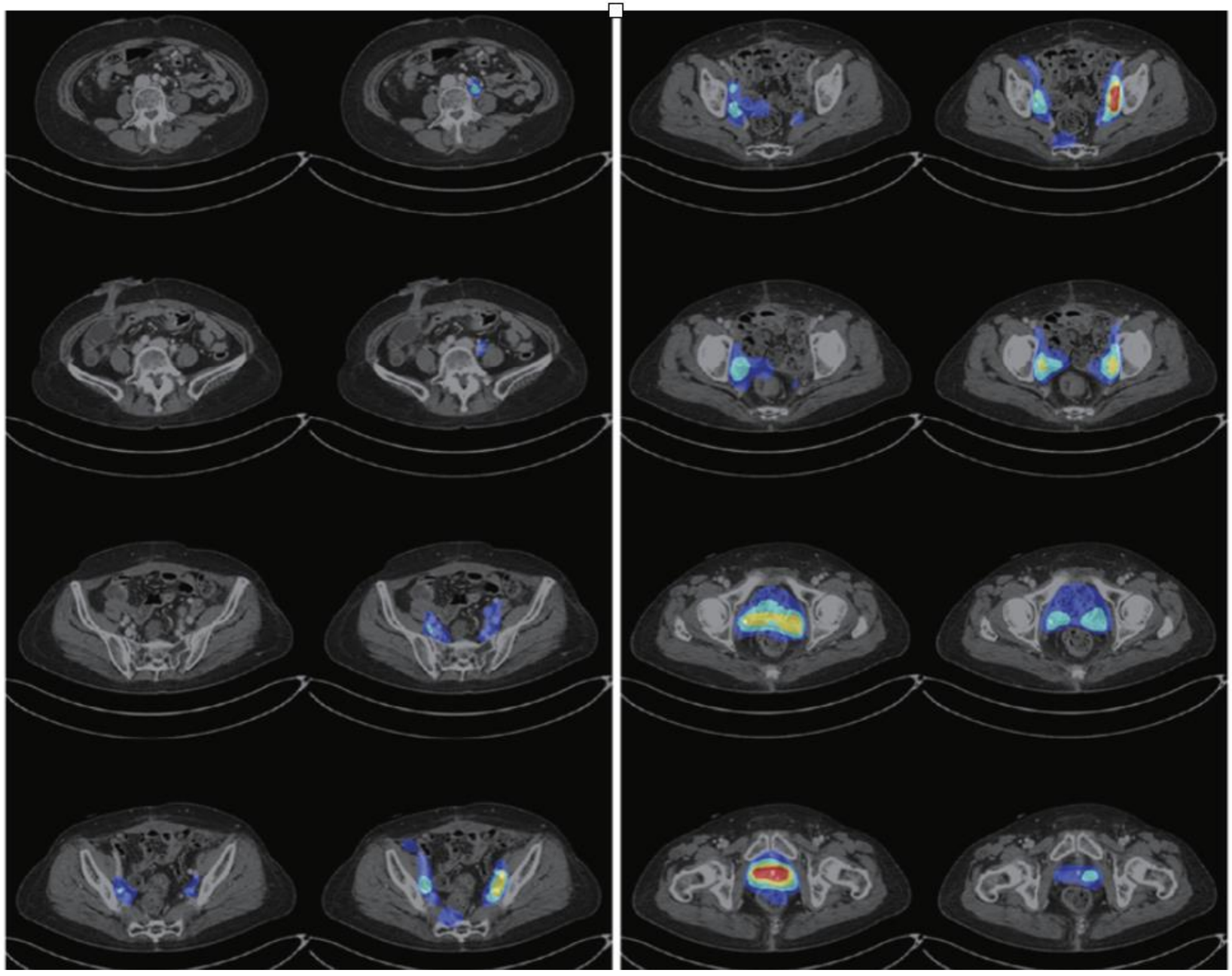
Radiothérapie des Aires ganglionnaires pour les cN0 ?





Radiothérapie des Aires ganglionnaires pour les cN0 ?

KIM Yonsei Med J 2021



Radiothérapie des Aires ganglionnaires pour les cN0 ?

Phase 3 HALL Eur Urol 2022

Radiation was administered to the bladder only

pelvic relapse rate with RT only to the bladder were merely 5.8%

=> indicating that not all patients need RT to the pelvic LNs ?

- **84% were T2N0M0 with a low LN metastases rate**
- **Marges recommandées autour de la vessie délivrent une dose non négligeable**

Radiothérapie des Aires ganglionnaires pour les cN0 ?

Phase 3 TUNIO IJROBP 2012 = 230 patients cT2-4N0M0

Radiothérapie vessie (+2cm) seule versus Vessie + Pelvis (L5/S1)

=> **pas de différence :**

DFS 5 ans 46,9% vs 47,1%

OS 5 ans 51% vs 52,9%

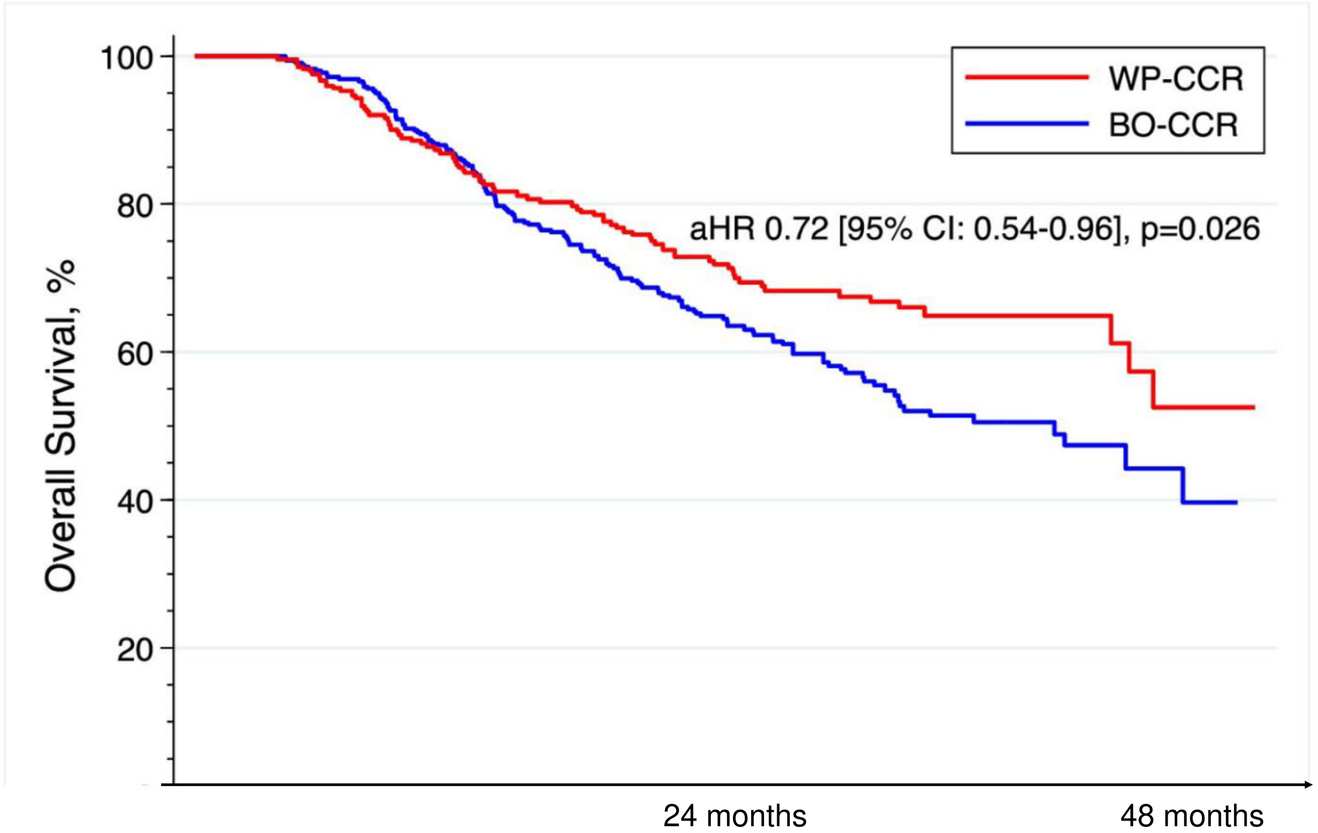
- **23% sans résection macroscopique maximale avant la radiothérapie**
- **53% au moins cT3**
- **Superposition des champs**

Radiothérapie des Aires ganglionnaires pour les cN0 ?

Rétro RIVEROS Canad Urol Ass J 2023 = 604 patients (NCDB) **92% cT2**

TMT avec Radiothérapie Vessie versus Vessie + Aires ganglionnaires pelviennes

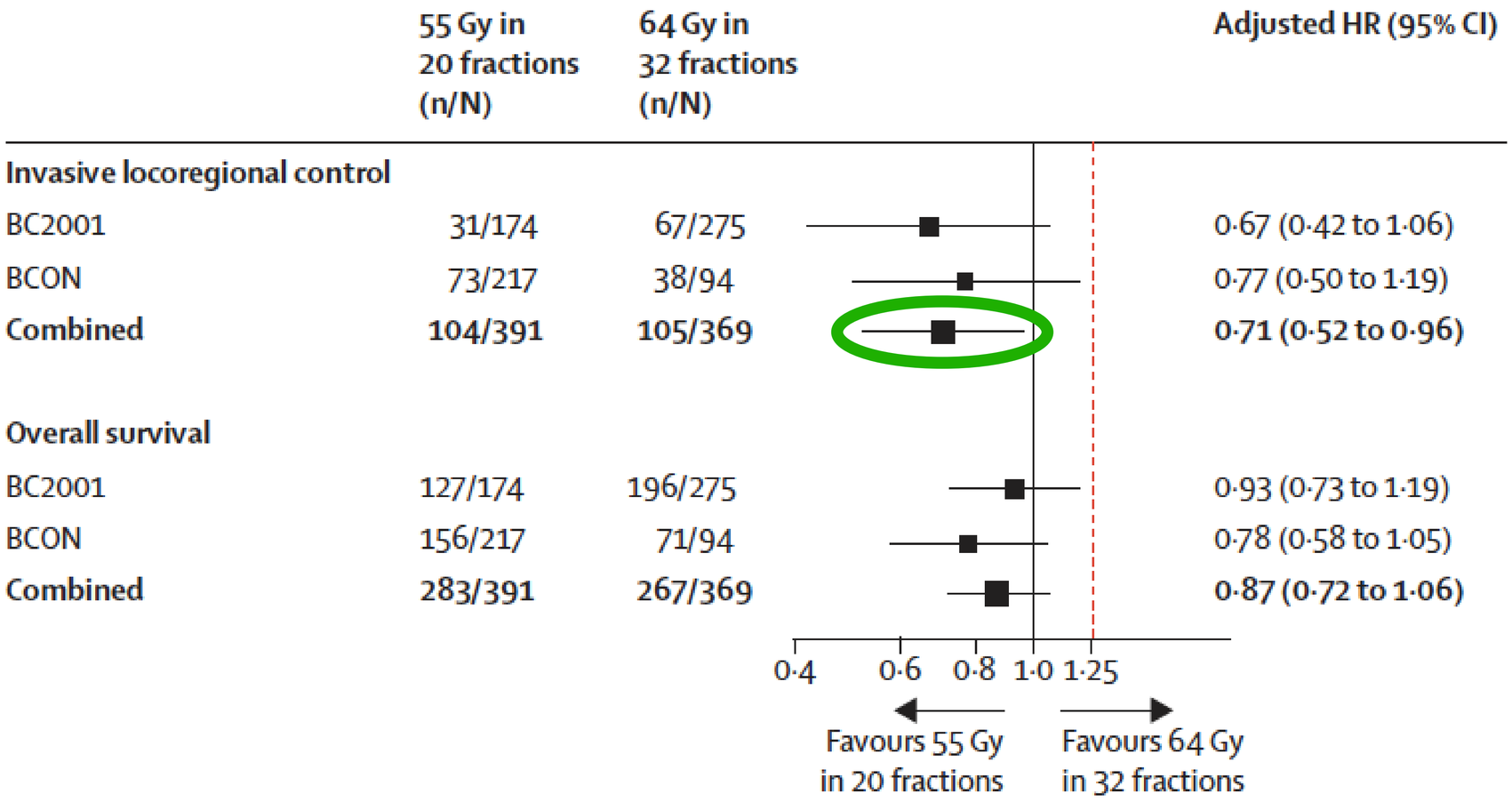
=> OS médiane 49,1 mois vs 38,9 mois



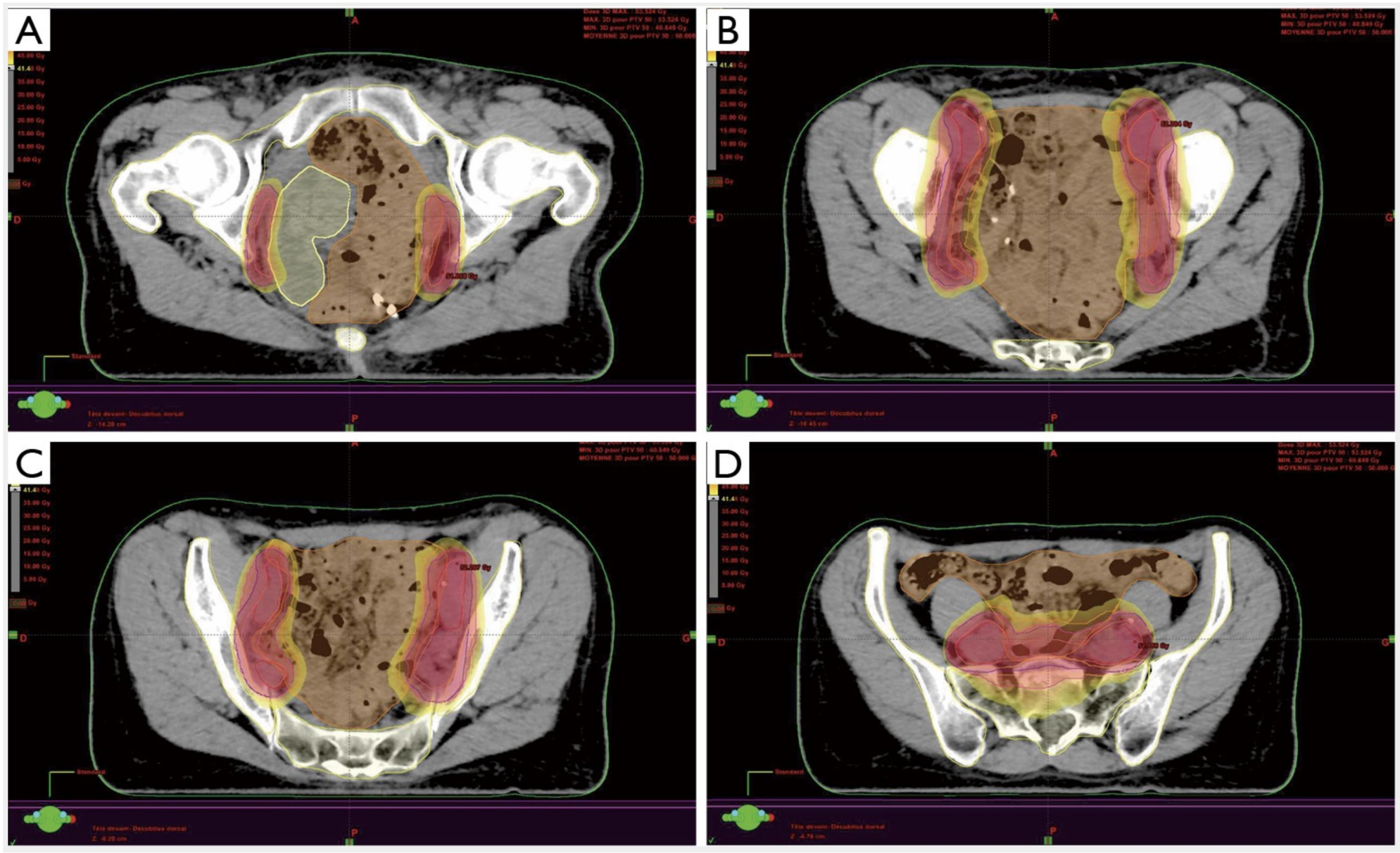
Radiothérapie HYPOfractionnée ?

MétaAnalyse CHOUDHURY Lancet Oncol 2021 = 55Gy en 20 versus 64Gy en 32

=> Amélioration du contrôle local avec toxicité identique



Technique moderne de Radiothérapie (IMRT) ?



Technique moderne de Radiothérapie (IMRT) ?

Rétro SHERRY J Radiat Oncol 2020 = 19 patients

Comparaison des dosimètres 3D versus IMRT (VMAT)

Réduction de la dose des volumes rectaux et intestinaux de 50%

Phase 2 TAN Clin Oncol 2019 = 38 patients 58% cN+ 63% >cT2

Radiothérapie vessie et pelvis en IMRT + Chimiothérapie

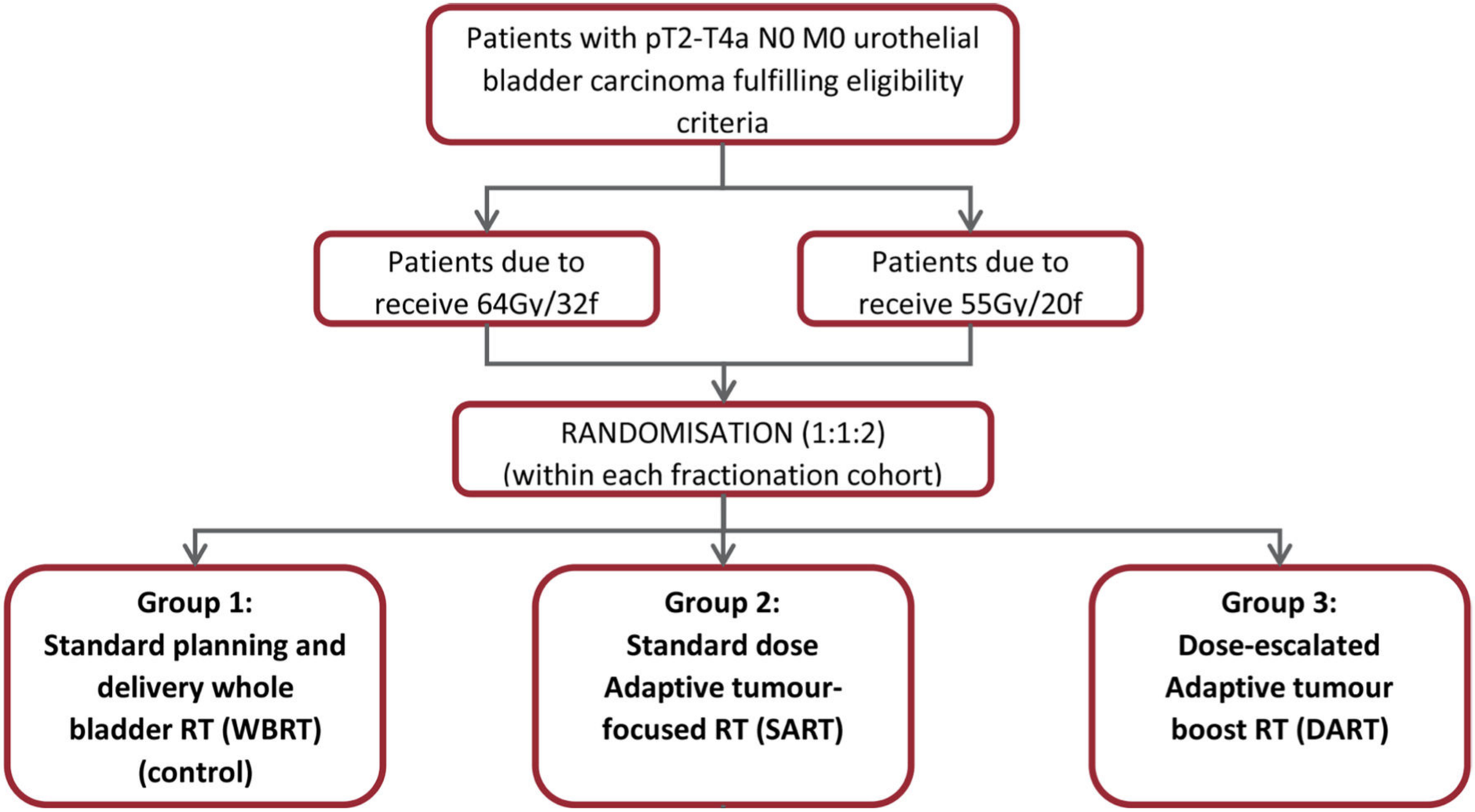
Toxicité aigue Grade 3 : digestive 5,4% urinaire 20,6%

Toxicité tardive Grade 3 : 5% à 1 an / 0% à 2 ans

=> Meilleure protection des organes à risque et réduction de la toxicité p/r à la Radiothérapie 3D

Augmentation de la dose de Radiothérapie ?

Phase 2 randomisée HAFEEZ en cours = T2-4aN0M0



70Gy en 32 ou **60Gy en 20**

CONCLUSIONS

TMT vs Cystectomie précédée de chimiothérapie ? *probablement pas de réponse mais patients différents*

Association Radiochimiothérapie & Immunothérapie ? *en cours*

N+ cliniques et les M+ : candidats à un traitement local ? *données suffisantes ?*

Radiothérapie après Cystectomie ? *en cours*

Evolutions en Radiothérapie *moins toxique, moins contraignante et plus efficace*