



Evolution des pratiques dans les cancers gynécologiques

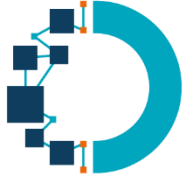
30 novembre 2021

Hôtel Mercure Chartrons

Adeline Petit, Institut Bergonié

RADIOTHÉRAPIE - QUOI DE NEUF ?

ACTUALITÉS DES CONGRÈS SFRO ET ASTRO 2021



CANCER DE L'ENDOMETRE

Evolution des facteurs clinico-pathologiques « classiques »

GRADE

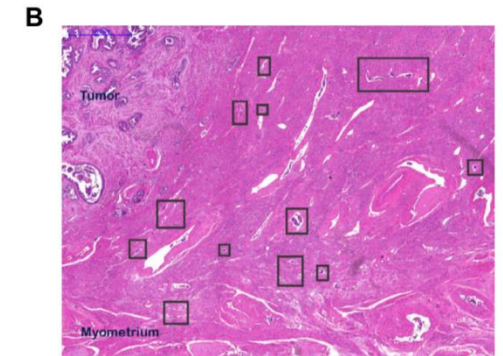
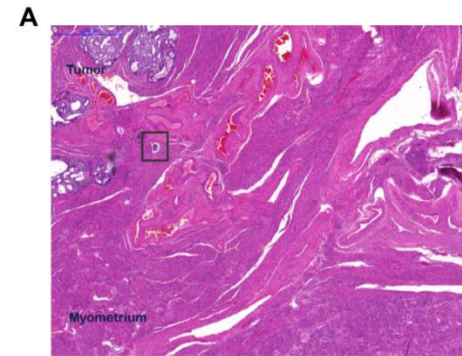
Importante variabilité inter-observateur

Le classement binaire du grade est recommandé :

- **carcinomes de grade 1 et 2 = carcinomes de bas grade**
- **carcinomes de grade 3 comme = carcinomes de haut grade**

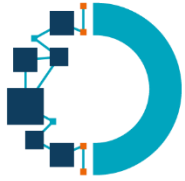
EMBOLS

Embols « substantiels » = agencement multifocal ou diffus d'embols ou présence de cellules tumorales **dans 5 espaces lymphovasculaire ou plus**



Facteur pronostique indépendant

- de la récurrence pelvienne (HR 6.19, $p < 0.001$),
- des métastases à distance (HR 3.61, $p < 0.001$)
- de la survie globale (HR 2.02, $p = 0.002$)



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Classification moléculaire

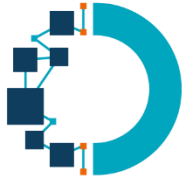
La valeur pronostique de la classification binaire (type 1/ type 2) reste sous-optimale:

- 20 % des CE de type I rechutent
- 15–20 % des CE type I sont en fait de haut grade
- 50 % des CE de type II ne rechutent pas

TCGA*: 4 sous-types moléculaires pour les types cancers endométrioïdes et séreux

Sous types de Bokhman	Type I			Type II
Sous types moléculaires	POLE	MSI	Bas nombre de copies, MSS	Haut nombre de copies, type Séreux
Sous-types histologiques	Endométrioïde			Séreux et endométrioïde
Grade	I, II, III	I, II, III	I, II	III
Nombre de copies altérées				
Taux de mutations				
Altérations PI3K				
Altérations KRAS				
Mutations TP53	35%	5%	1%	>90%
Pronostique	Bon	Intermédiaire		Mauvais

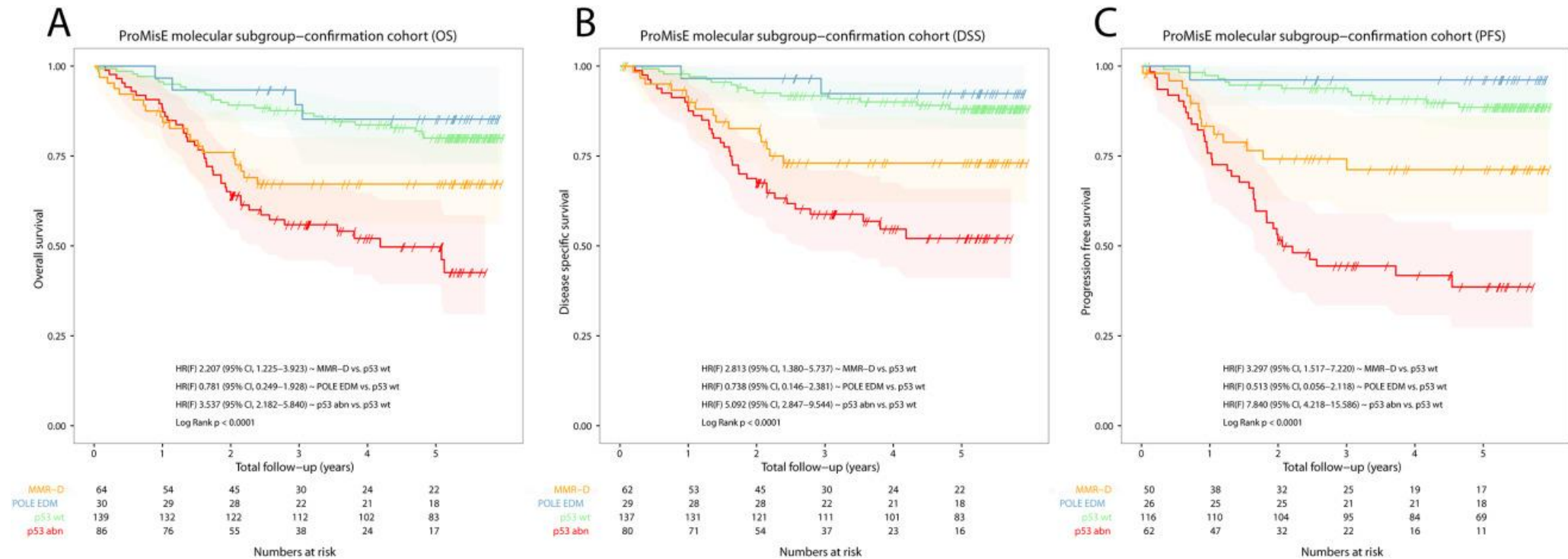
A



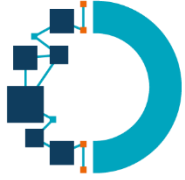
CANCER DE L'ENDOMETRE

Classification moléculaire: quelle valeur pronostique ?

Confirmation of ProMisE: A simple, genomics-based clinical classifier for endometrial cancer

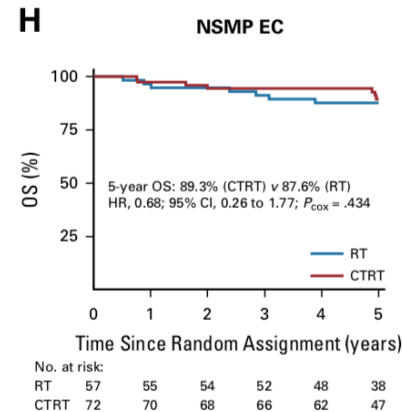
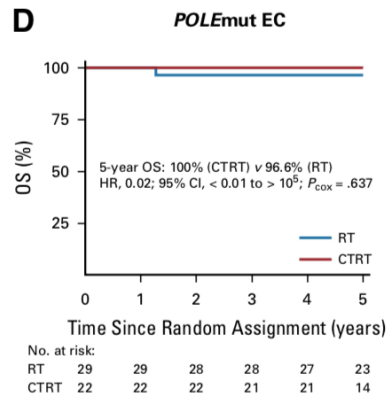
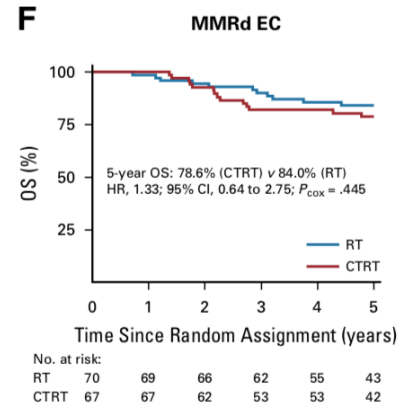
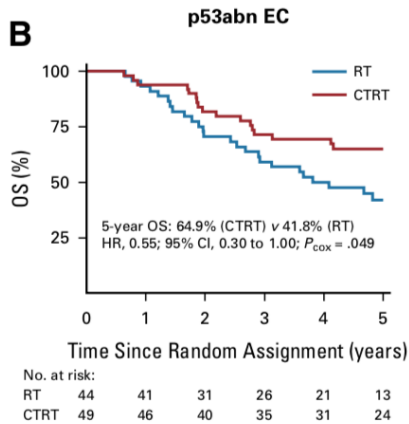


Radiothérapie - Quoi de neuf ? (2021)



CANCER DE L'ENDOMETRE

Classification moléculaire: quelle utilité clinique ?



Molecular Classification of the PORTEC-3 Trial for High-Risk Endometrial Cancer: Impact on Prognosis and Benefit From Adjuvant Therapy

Alicia León-Castillo, MD¹; Stephanie M. de Boer, MD²; Melanie E. Powell, MD³; Linda R. Mileskin, MBBS⁴; Helen J. Mackay, MD⁵; Alexandra Leary, MD, PhD⁶; Hans W. Nijman, MD, PhD^{6,7}; Naveena Singh, MD, MBBS⁸; Pamela M. Pollock, PhD⁹; Paul Bessette, MD¹⁰; Anthony Fyles, MD¹¹; Christine Haie-Meder, MD¹²; Vincent T. H. B. M. Smit, MD, PhD¹; Richard J. Edmondson, MD¹³; Hein Putter, MD¹⁴; Henry C. Kitchener, MD¹³; Emma J. Crosbie, MD, PhD¹³; Marco de Bruyn, PhD⁷; Remi A. Nout, MD²; Nanda Horeweg, MD, PhD²; Carlen L. Creutzberg, MD, PhD²; and Tjalling Bosse, MD, PhD¹ on behalf of the TransPORTEC consortium

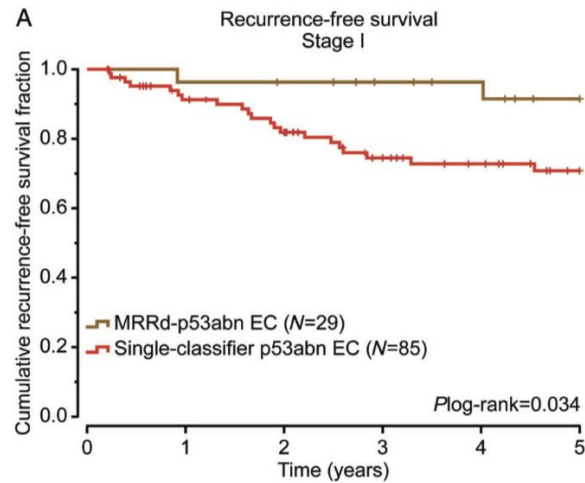


**Survie globale et DFS:
Seul le groupe p53abn bénéficie
de l'association RT-CT**

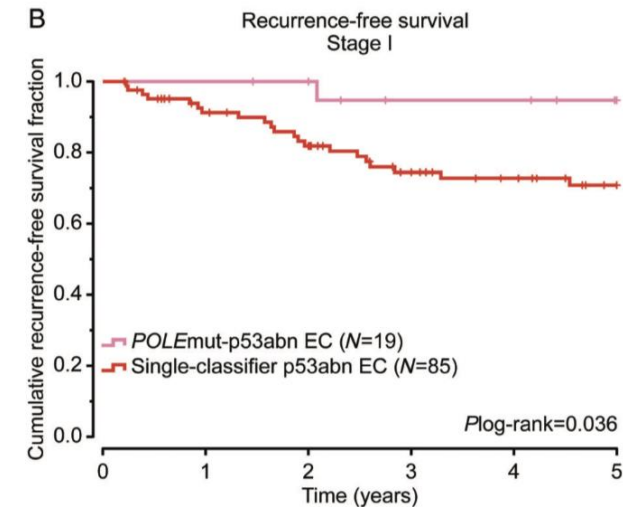


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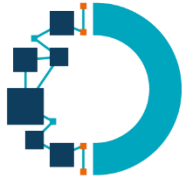
Comment prendre en charge les « multiple-classifier »?



MMRd ET p53 abn agrègent plutôt avec le groupe MMRd

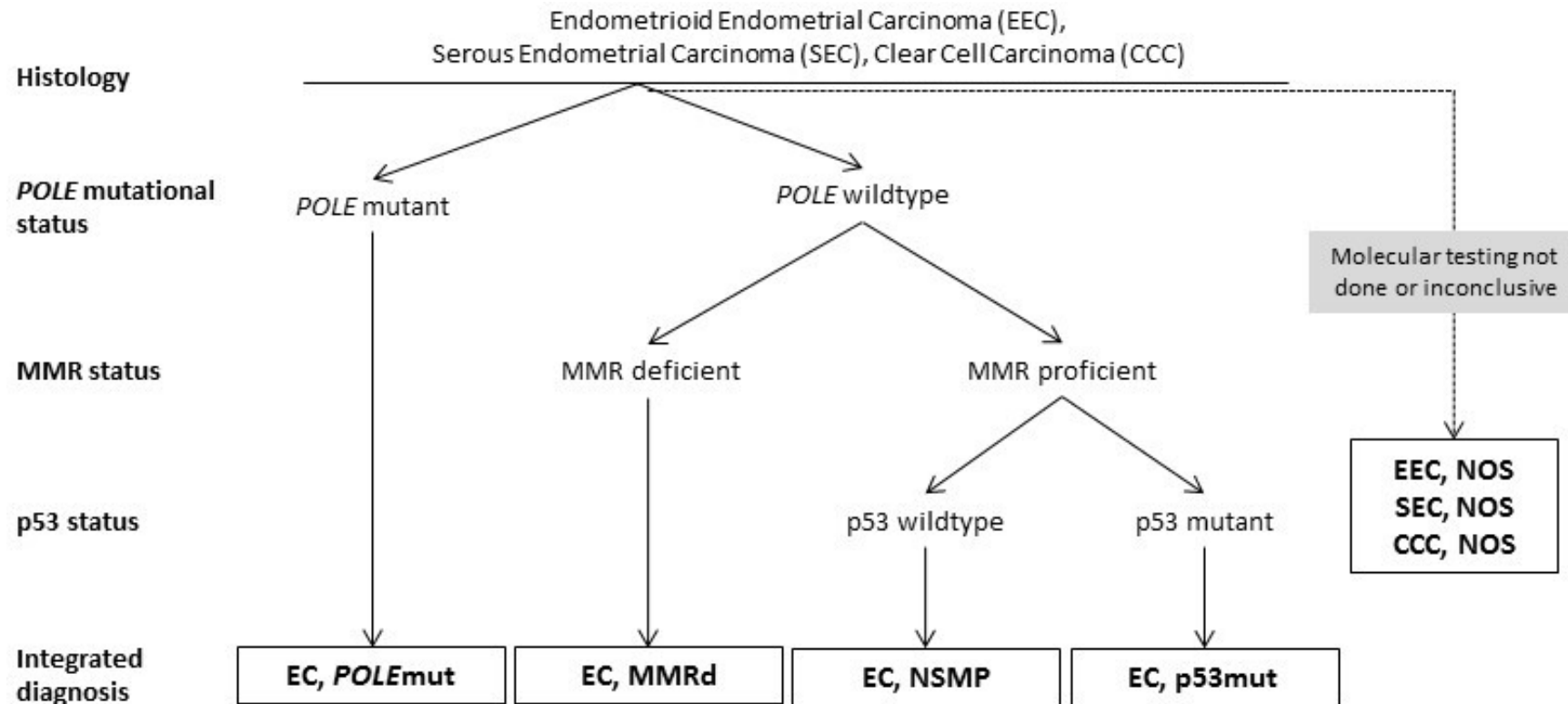


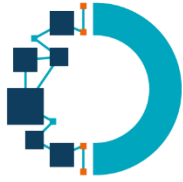
POLEmut ET p53 abn agrègent avec le POLEmut



CANCER DE L'ENDOMETRE

Classification moléculaire: en pratique ?





CANCER DE L'ENDOMETRE

Recommandations ESGO-ESTRO-ESP 2020



ESGO/ESTRO/ESP guidelines for the management of patients with endometrial carcinoma

Nicole Concin ^{1,2}, Xavier Matias-Guiu ^{3,4}, Ignace Vergote ⁵, David Cibula ⁶, Mansoor Raza Mirza ⁷, Simone Marnitz ⁸, Jonathan Ledermann ⁹, Tjalling Bosse ¹⁰, Cyrus Chhagari ¹¹, Anna Fagotti ¹², Christina Fotopoulou ¹³, Antonio Gonzalez Martin ¹⁴, Sigurd Lax ^{15,16}, Domenica Lorusso ¹², Christian Marth ¹⁷, Philippe Morice ¹⁸, Remi A Nout ¹⁹, Dearbhaile O'Donnell ²⁰, Denis Querleu ^{12,21}, Maria Rosaria Raspollini ²², Jalid Sehoul ²³, Alina Sturdza ²⁴, Alexandra Taylor ²⁵, Anneke Westermann ²⁶, Pauline Wimberger ²⁷, Nicoletta Colombo ²⁸, François Planchamp ²⁹, Carlen L Creutzberg ³⁰

Table 2 Definition of prognostic risk groups

Risk group	Molecular classification unknown	Molecular classification known*†
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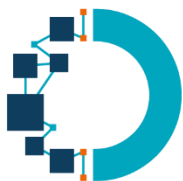


Table 2 Definition of prognostic risk groups

Risk group	Molecular classification unknown	Molecular classification known*†
Low	Stage IA endometrioid + low-grade‡ + LVSI negative or focal	- Stage I–II POLEmut endometrial carcinoma, no residual disease - Stage IA MMRd/NSMP endometrioid carcinoma + low-grade‡ + LVSI negative or focal
Intermediate	- Stage IB endometrioid + low-grade‡ + LVSI negative or focal - Stage IA endometrioid + high-grade‡ + LVSI negative or focal - Stage IA non-endometrioid (serous, clear cell, undifferentiated carcinoma, carcinosarcoma, mixed) without myometrial invasion	- Stage IB MMRd/NSMP endometrioid carcinoma + low-grade‡ + LVSI negative or focal - Stage IA MMRd/NSMP endometrioid carcinoma + high-grade‡ + LVSI negative or focal - Stage IA p53abn and/or non-endometrioid (serous, clear cell, undifferentiated carcinoma, carcinosarcoma, mixed) without myometrial invasion
High–intermediate	- Stage I endometrioid + substantial LVSI regardless of grade and depth of invasion - Stage IB endometrioid high-grade‡ regardless of LVSI status - Stage II	- Stage I MMRd/NSMP endometrioid carcinoma + substantial LVSI regardless of grade and depth of invasion - Stage IB MMRd/NSMP endometrioid carcinoma high-grade‡ regardless of LVSI status - Stage II MMRd/NSMP endometrioid carcinoma
High	- Stage III–IVA with no residual disease - Stage I–IVA non-endometrioid (serous, clear cell, undifferentiated carcinoma, carcinosarcoma, mixed) with myometrial invasion, and with no residual disease	- Stage III–IVA MMRd/NSMP endometrioid carcinoma with no residual disease - Stage I–IVA p53abn endometrial carcinoma with myometrial invasion, with no residual disease - Stage I–IVA NSMP/MMRd serous, undifferentiated carcinoma, carcinosarcoma with myometrial invasion, with no residual disease
Advanced metastatic	- Stage III–IVA with residual disease - Stage IVB	- Stage III–IVA with residual disease of any molecular type - Stage IVB of any molecular type

*For stage III–IVA **POLEmut** endometrial carcinoma and stage I–IVA **MMRd** or **NSMP** clear cell carcinoma with myometrial invasion, insufficient data are available to allocate these patients to a prognostic risk group in the molecular classification. Prospective registries are recommended.

†See text on how to assign double classifiers (eg, patients with both **POLEmut** and **p53abn** should be managed as **POLEmut**).

Pas de traitement adjuvant

Curiethérapie vaginale HDR

Option: surveillance, en particulier si patiente âgée de moins de 60 ans ou pour tumeurs intramuqueuses strictes

cN0: Radiothérapie

Curiethérapie seule si stade II, bas grade

pN0: Curiethérapie

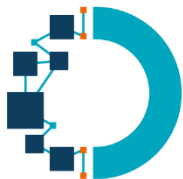
Radiothérapie si embols ou stades II

Option: Chimiothérapie (haut grade, embols)

Radiothérapie externe et Chimiothérapie

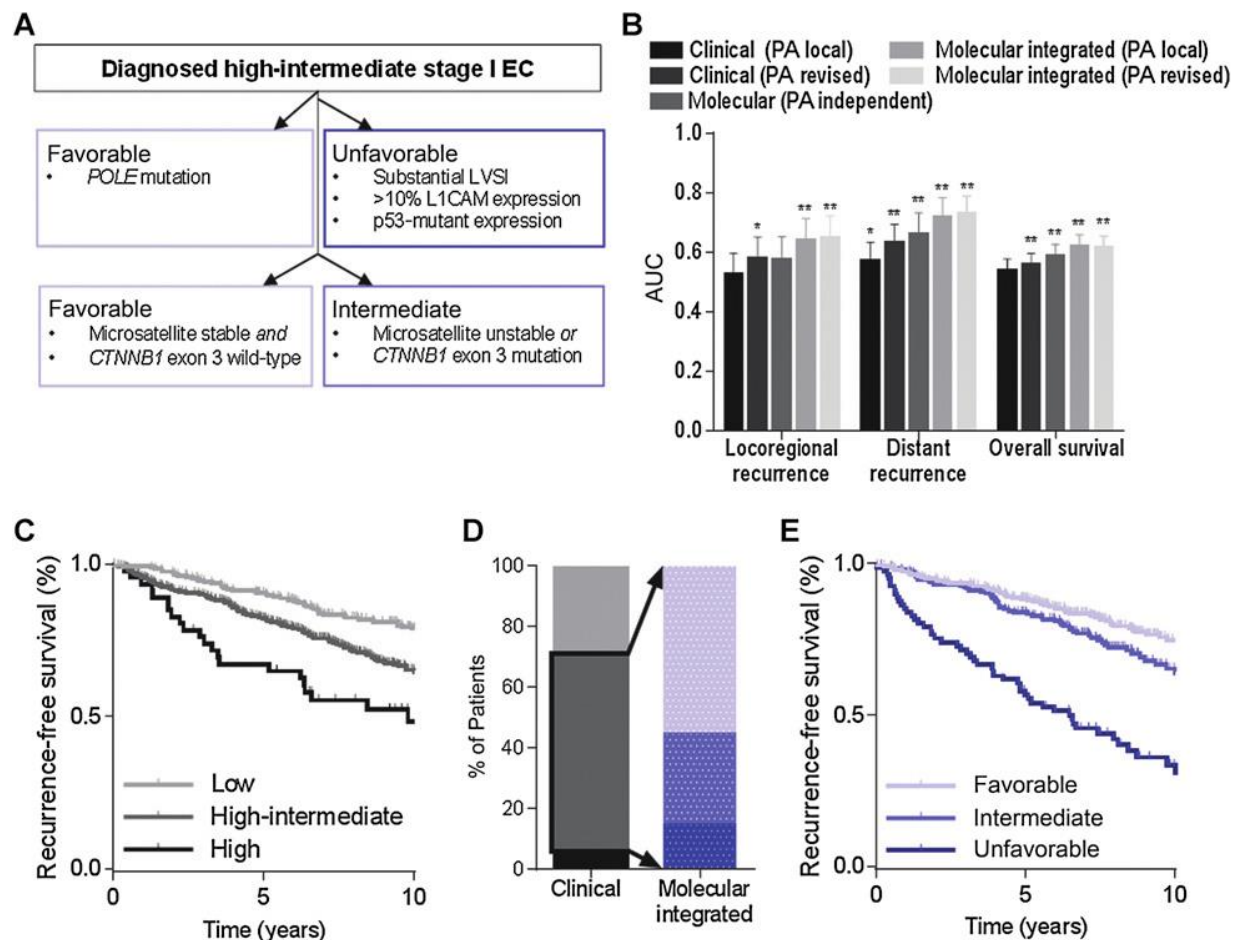
: concomitante et adjuvante ou traitement CT et EBRRT séquentiel

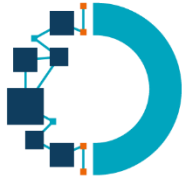
+/- **Boost en Curiethérapie** à considérer en cas d'embols nombreux, d'atteinte du stroma cervical, de stade IIIB/IIIC



CANCER DE L'ENDOMETRE

Vers un risque moléculaire intégré ?





CANCER DU COL

EMBRACE 1

FU : 51 mois

n= 1341

- ✓ IABT : 98% dosimétrie sur IRM
- ✓ OTT: 50 jours
- ✓ D90 CTV-HR: 87-90 Gy (EQD2)
- ✓ Chimiothérapie concomitante : 92%

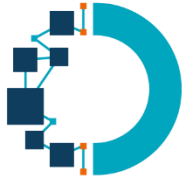
	Number of patients	CTV _{HR} volume, cm ³ *	CTV _{HR} D _{90%} EQD2 ₁₀ Gy	Local failure (n)	Pelvic failure (n)	Any failure (n)	Patients dead (n)	5-year local control (95% CI)	5-year pelvic control (95% CI)	5-year disease-free survival (95% CI)	5-year overall survival (95% CI)
IB1	124	22 (17-27)	91 (87-95)	2	6	20	24	98% (94-100)	95% (87-98)	76% (67-83)	83% (75-89)
IB2	119	26 (20-38)	89 (84-93)	9	18	36	35	92% (84-96)	84% (75-90)	65% (56-73)	73% (64-81)
IIA1	38	23 (14-31)	91 (85-96)	3	4	6	7	91% (73-97)	88% (71-95)	75% (58-86)	80% (63-90)
IIA2	31	34 (24-42)	87 (80-91)	3	6	10	8	89% (68-96)	77% (55-89)	65% (44-79)	74% (53-87)
IIB	693	27 (19-36)	90 (86-95)	55	78	146	152	91% (88-93)	88% (85-90)	73% (69-76)	78% (75-82)
IIIA	13	30 (24-35)	84 (82-88)	0	0	2	3	100%	100%	76% (43-92)	76% (42-91)
IIIB	190	40 (30-56)	88 (83-91)	15	24	61	78	92% (86-95)	86% (79-90)	59% (52-66)	64% (57-71)
IVA	34	57 (39-89)	86 (78-89)	3	6	10	17	91% (75-97)	81% (62-91)	47% (28-63)	52% (33-68)
IVB	98	34 (22-47)	89 (85-92)	8	16	40	38	89% (79-95)	81% (70-88)	48% (37-58)	61% (49-70)
Total	1341†	28 (20-40)	90 (85-94)	98	158	331	363†	92% (90-93)	87% (85-89)	68% (65-70)	74% (72-77)

Data are n, median (IQR), or Kaplan-Meier estimates (95% CI). *Mean dose delivered over all fractions. †One patient with unknown FIGO stage. FIGO=The International Federation of Gynaecology and Obstetrics. CTV_{HR}= high-risk clinical target volume. D_{90%}=minimal dose to 90% of the clinical target volume. EQD2₁₀=equi-effective dose in 2 Gy per fraction of 10 Gy.

Table 3: CTV_{HR} volume, and dose and clinical outcomes according to FIGO₂₀₀₉ stage

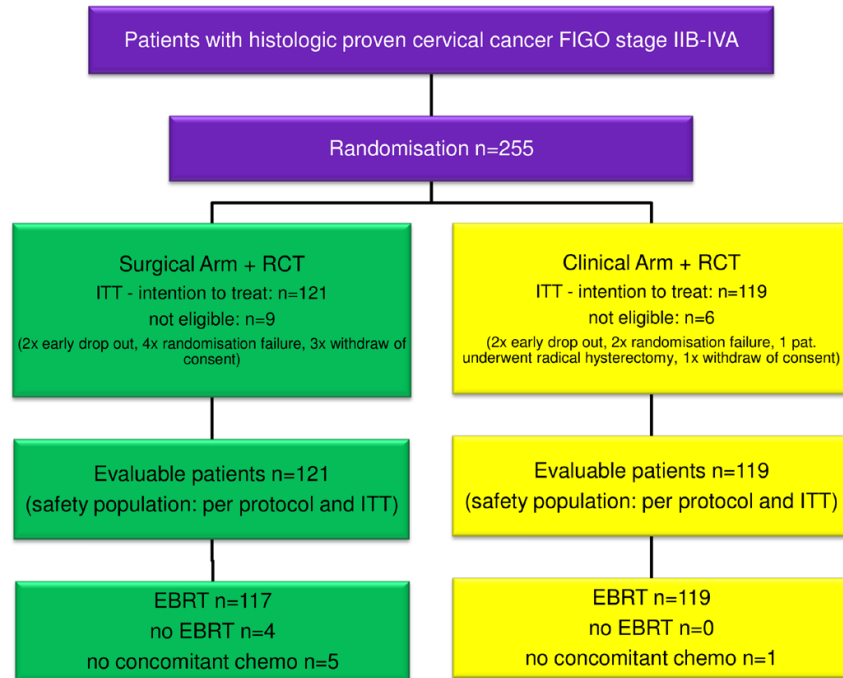
Morbidité G ≥3:

- GU: 6.8% (95% CI 5.4-8.6)
- GI: 8.5% (6.9-10.6)
- Vaginale: 5.7% (4.3-7.6)
- Fistule: 3.2% (2.2-4.5)



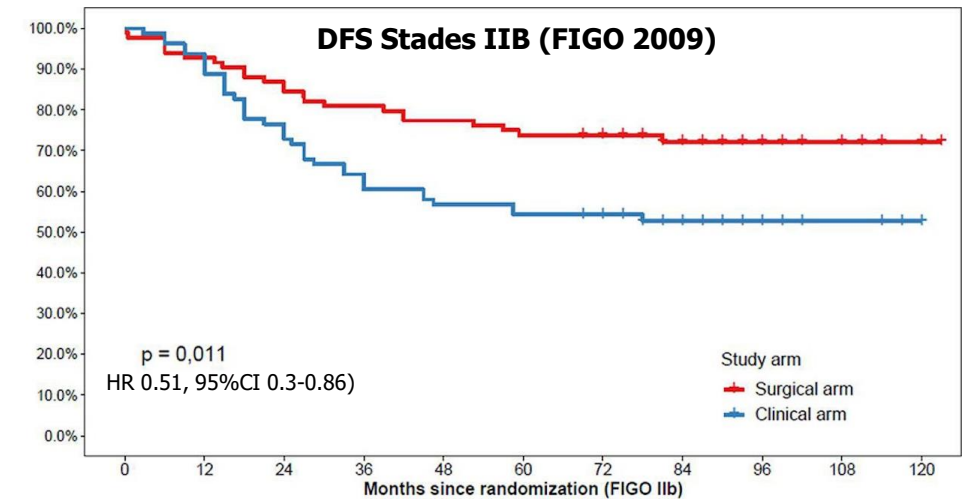
CANCER DU COL: LYMPHADENECTOMIE ?

UTERUS 11



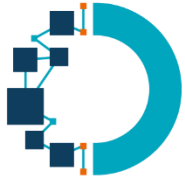
**Pas de différence de DFS (95%CI 0.48-1.05)
p=0.084, sauf pour les stades IIB**

Upstaging : 33% dans le bras lymphadénectomie
Champs étendus: 23% (bras lymphadénectomie) vs 12%, p=0.02



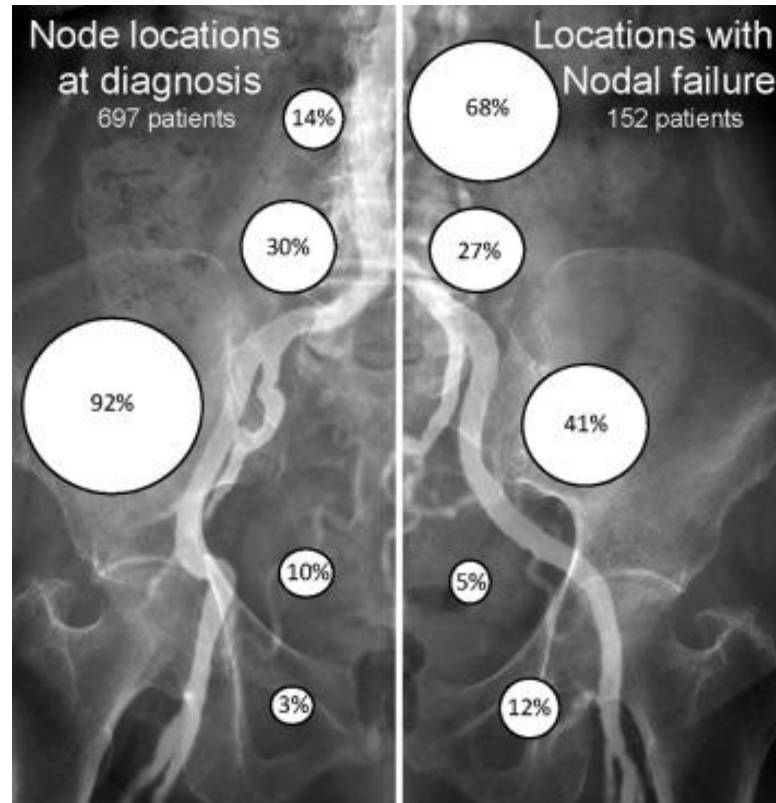
No. at Risk											
Surgical arm	84	78	73	68	65	62	60	39	20	8	2
Clinical arm	81	76	62	52	46	44	42	28	11	5	1

Radiothérapie - Quoi de neuf ? (2021)



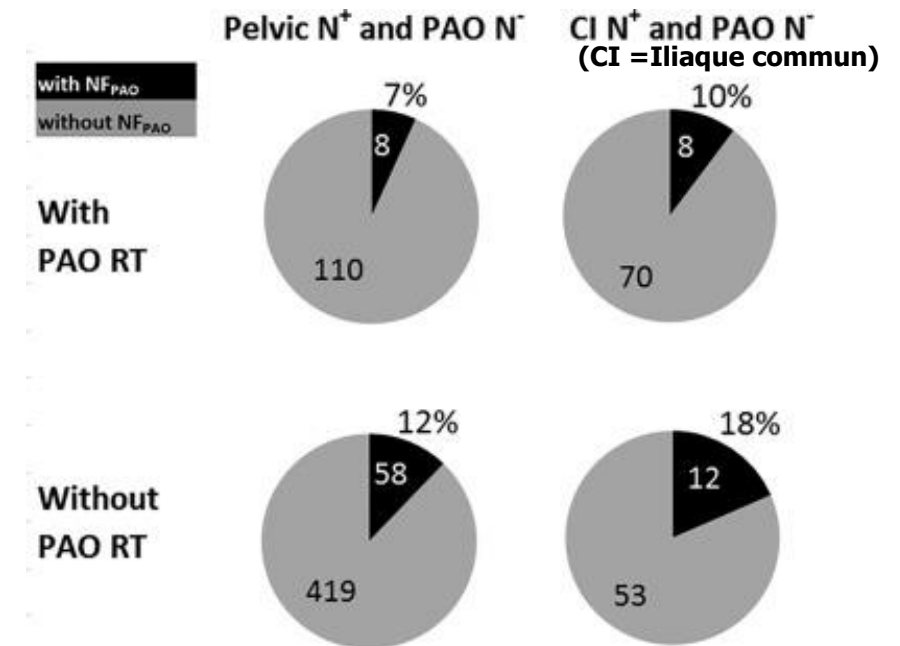
CANCER DU COL

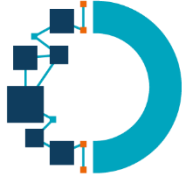
RECHUTE GANGLIONNAIRE



Taux de contrôle ganglionnaire à 3 ans et 5 ans: 87% et 86%
À 3 ans: 92% patientes N0- vs 82% patientes N+, $p < 0.001$

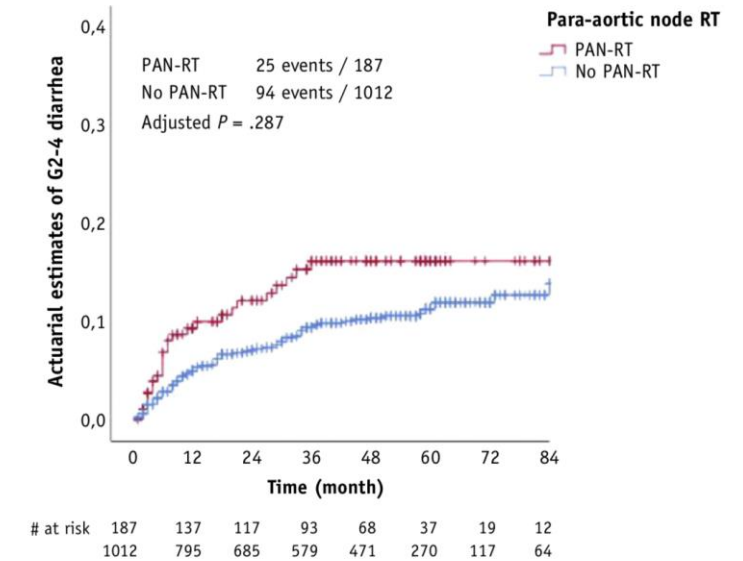
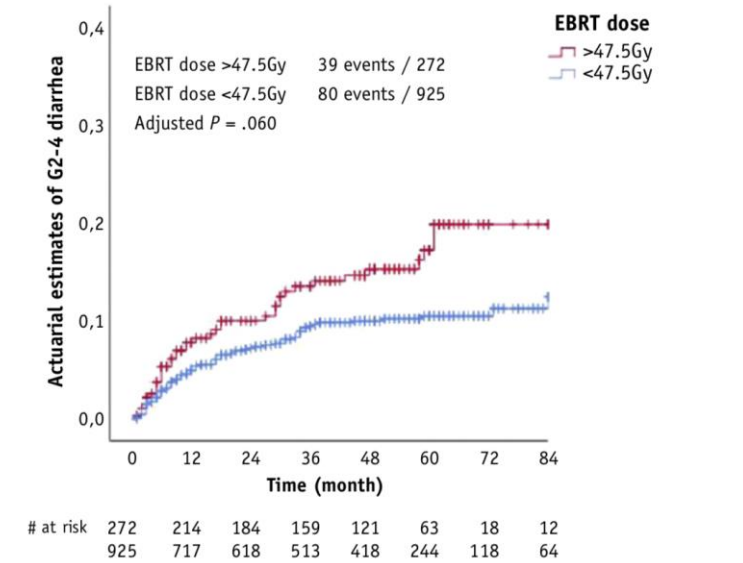
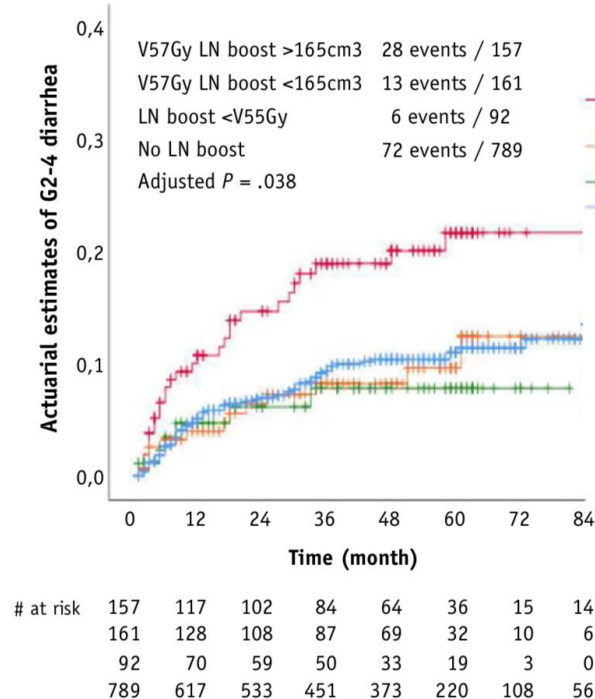
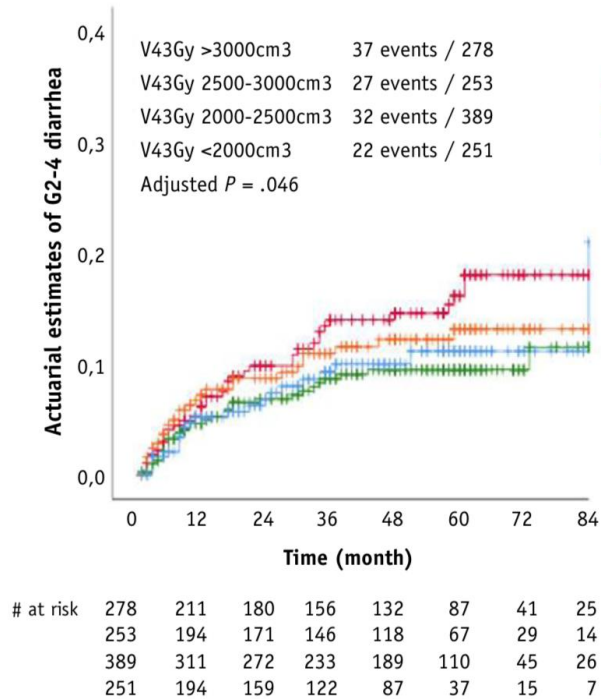
24% des rechutes ganglionnaires sont associées à une rechute locale

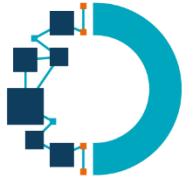




CANCER DU COL

TOXICITÉ DIGESTIVE





CANCER DU COL

QUEL VOLUME/DOSES DE RADIOTHÉRAPIE EXTERNE ?

Irradiation lomboaortique prophylactique ?

- Indication ajustée au résultat du staging chirurgical (notamment en cas d'atteinte des paramètres)
- Et/ou indication adaptée au risque ganglionnaire

Risque ganglionnaire	Stades	Volume ganglionnaire prophylactique
Bas risque	stades IA IB1, IIA1, taille < 4 cm, N0, pas d'extension utérine C. épidermoïdes	Petit pelvis = iliaques internes; externes, obturateurs, pré-sacrés
Risque intermédiaire		Pelvis large (= petits pelvis + iliaque primitif, incluant la bifurcation aortique)
Haut risque	≥ 3 ganglions ≥ 1 ganglion iliaque commun	Pelvis large + LAO jusqu'à la veine rénale G ou + 3cm au dessus de l'atteinte macroscopique ganglionnaire

Optimisation dosimétrique ?

- Marges de PTV du CTV-E réduites à 5 mm
- Dose de radiothérapie externe limitée à 45 Gy
- IGRT quotidienne voire radiothérapie adaptative
- Boost intégré ganglionnaire
- Optimiser le V57 Gy du boost : CovP (coverage probability dose planning)

