

Complications post-traitement du cancer du rectum non métastatique

Pr Eddy COTTE
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Chirurgie du rectum en 2024

- **Chirurgie par voie mini-invasive : coelio ou Robot +++**



Ergonomie



Précision



Vision 3D HD

- **Programme RAAC**

- ↓ complications médicales, DMS ↓
- Reprise activité rapide

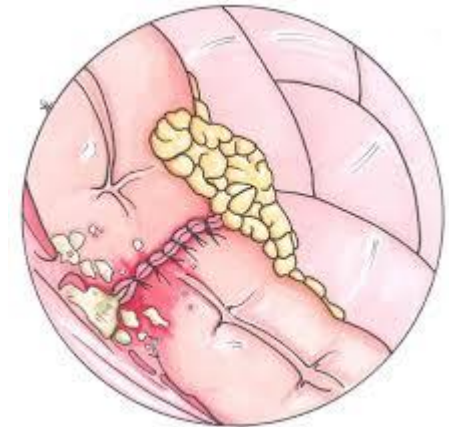




Moi, jamais de complications !!!

Morbidité post-opératoire

Reste un pb majeur



To Drain or Not to Drain Infraperitoneal Anastomosis After Rectal Excision for Cancer

The GRECCAR 5 Randomized Trial

Quentin Denost, MD, PhD,*† Philippe Rouanet, MD, PhD,‡ Jean-Luc Faucheron, MD, PhD,§¶
Yves Panis, MD, PhD,|| Bernard Meunier, MD,** Eddy Cotte, MD, PhD,†† Guillaume Meurette, MD, PhD,‡‡
Sylvain Kirzin, MD, PhD,§§ Charles Sabbagh, MD, PhD,¶¶||| J        , MD, PhD,***
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Bernard Lelong, MD,¶¶¶ Fran        , MD,||||| Beno        , MD,****
Marie-Line Barussaud, MD,†††† Christine Germain, MD,‡‡‡‡ Marie-Quitterie Picat, MD,††††§§§§¶¶¶¶
Eric Rullier, MD,*† and Christophe Laurent, MD, PhD*†,
for the French Research Group of Rectal Cancer Surgery (GRECCAR)

- **n=494 patients**
- **Morbidit   globale : 47,9%**
- **Mortalit      30j : 1,1%**



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- **Morbidit   chirurgicale (Dindo III-V) = 22%**

- III : 15,6%
- IV : 5,3%

- **Tx reprise chirurgicale = 18,8%**

- **DMS = 12,2 j**



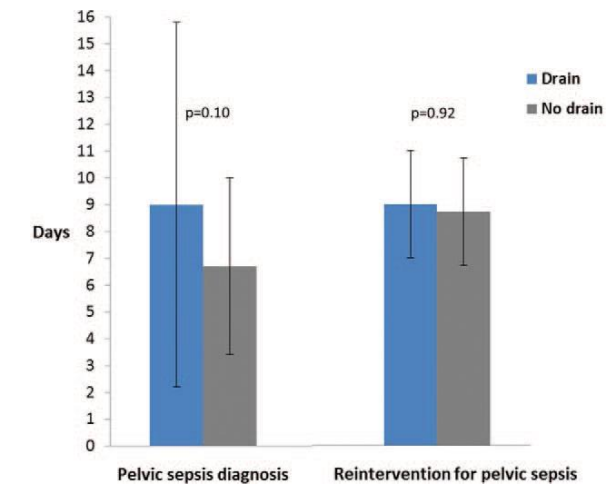
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The GRECCAR 5 Randomized Trial

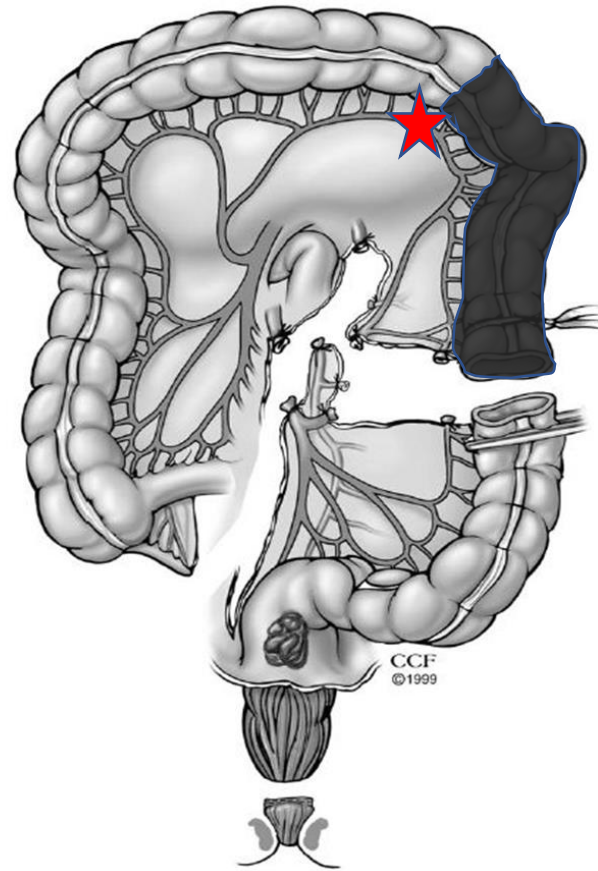
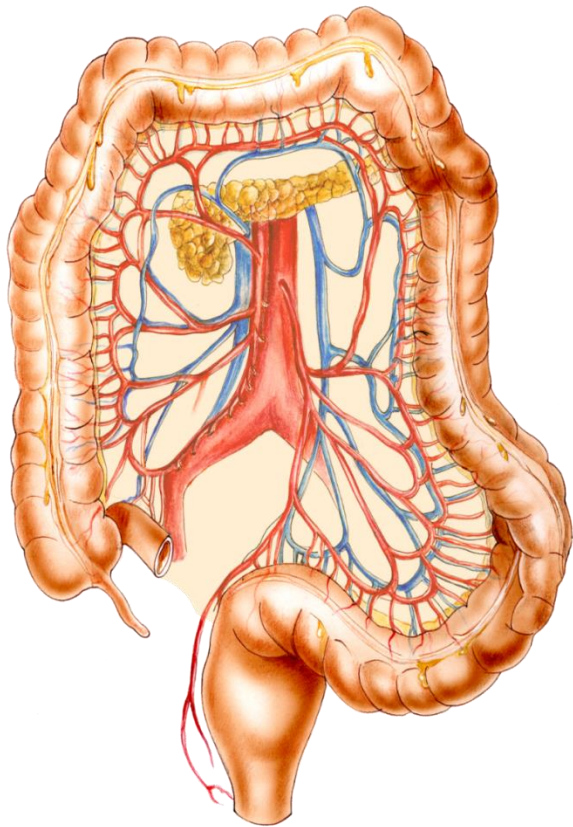
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- Taux sepsis pelvien = 17,1%
- Pas de différence avec ou sans drain



Nécrose colon



Nécrose colon

- **Risque faible <2%¹⁻³** (jusqu'à 10% colo-anale différée⁴)
- **Mais conséquence dramatique**
 - Péritonite
 - Choc hémodynamique +++
 - Colostomie
 - Difficulté +++ pour rétablissement ultérieur
 - Risque majeur de colostomie définitive



1- Sörelus K, et al. Colorectal Dis. 2019;21:925–931
2- Park MG, et al. Int J Colorectal Dis. 2012;27:671–675.
3- Tsujinaka S, et al. Scand J Surg. 2012;101:21–25.
4- GRECCAR group. Ann Surg 2023;278 (5)

Long Term Effects



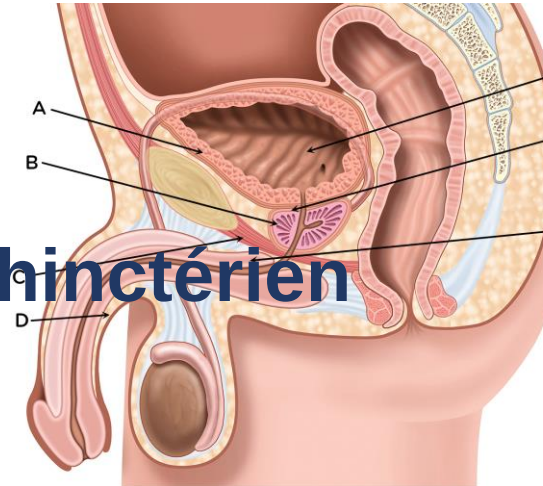
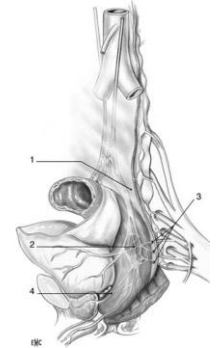
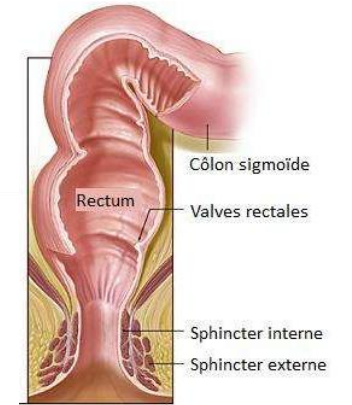
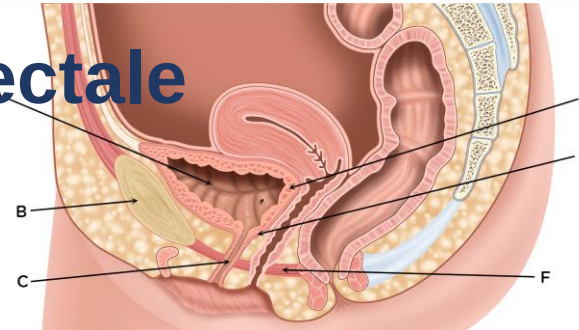
Séquelles à long terme



- Perte ampoule rectale

- Traumatisme plexus nerveux

- Traumatisme sphinctérien



Syndrome de résection antérieure du rectum



Polyexonération

**Fragmentation
selles**



Faux besoins



Impériosités



Incontinence

Conséquences



Dépendance toilette



Préoccupation transit



Insatisfaction transit



Stratégies et compromis

Conséquences



Dépendance toilette



Préoccupation transit



Insatisfaction transit



Stratégies et compromis

Impact



**Bien être mental et
émotionnel**



Vie sociale



Vie intime



**Vie professionnelle et
responsabilités**

Low Anterior Resection Syndrome Score

Development and Validation of a Symptom-Based Scoring System for Bowel Dysfunction After Low Anterior Resection for Rectal Cancer

Katrine J. Emmertsen, MD,*† and Søren Laurberg, MD*

Score de syndrome de résection antérieure du rectum (LARS score)^{1,2}

Le but de ce questionnaire est d'évaluer le fonctionnement de votre intestin. Cochez une seule case pour chaque question. Vous pouvez avoir du mal à choisir une réponse car votre état varie d'un jour à l'autre. Dans ce cas, choisissez la réponse qui vous correspond globalement le mieux. Si pour une raison autre votre intestin a été perturbé récemment, n'en tenez pas compte et notez les réponses qui correspondent à votre état habituel.

1. Vous arrive-t-il de ne pas pouvoir contrôler vos flatulences (gaz intestinaux) ?
☐ Non, jamais 0
☐ Oui, moins d'une fois par semaine 4
☐ Oui, au moins une fois par semaine 7
2. Avez-vous des fuites accidentelles de selles liquides ?
☐ Non, jamais 0
☐ Oui, moins d'une fois par semaine 3
☐ Oui, au moins une fois par semaine 3
3. A quelle fréquence allez-vous à la selle ?
☐ Plus de 7 fois par jour 4
☐ 4 à 7 fois par jour 2
☐ 1 à 3 fois par jour 0
☐ Moins d'une fois par jour 5
4. Vous arrive-t-il de retourner à la selle moins d'une heure après y être allé ?
☐ Non, jamais 0
☐ Oui, moins d'une fois par semaine 9
☐ Oui, au moins une fois par semaine 11
5. Vous arrive-t-il d'avoir une envie très forte au point de vous précipiter pour aller à la selle ?
☐ Non, jamais 0
☐ Oui, moins d'une fois par semaine 11
☐ Oui, au moins une fois par semaine 16

Ajouter les résultats de chaque question pour obtenir un score final

Résultats:

0-20 : LARS absent

21-29 : LARS mineur

30-42 : LARS majeur

1. Emmertsen KJ, Laurberg S. Low anterior resection syndrome score: development and validation of a symptom-based scoring system for bowel dysfunction after low anterior resection for rectal cancer. *Ann Surg*. 2012;255:922-928.
2. Juhl T, Ahlberg M, Blom S, et al. International validation of the low anterior resection syndrome score. *Ann Surg*. 2014;259:728-734.

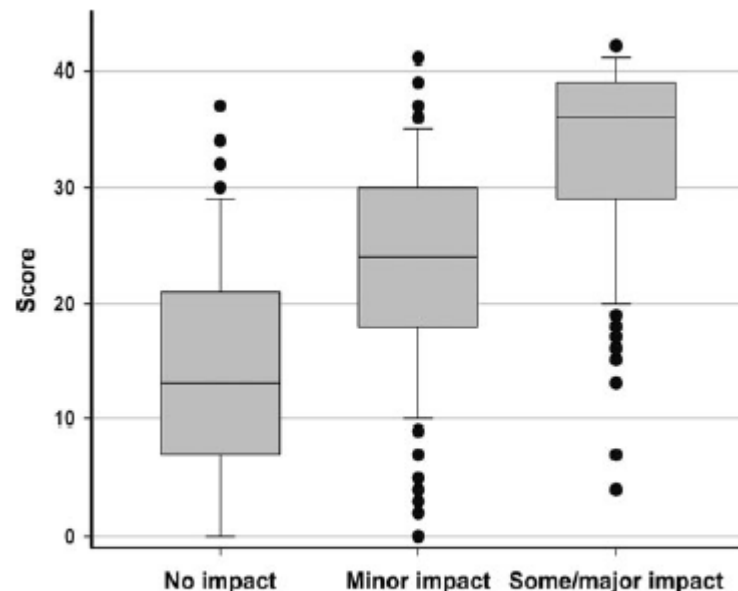
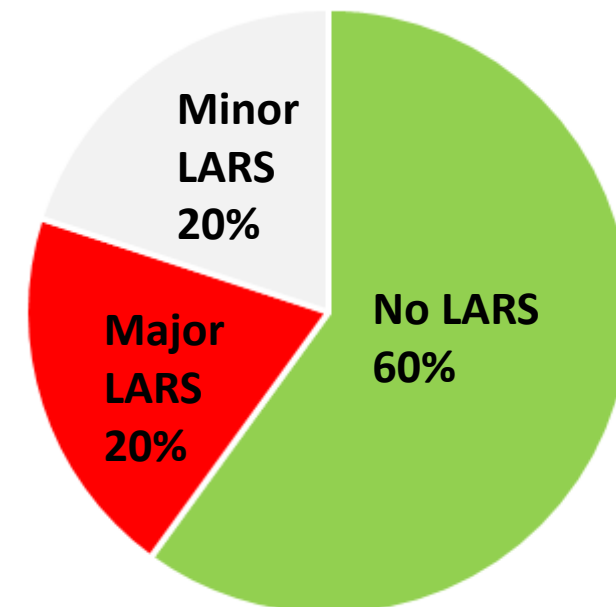


FIGURE 3. Score versus impact on QoL. There was a significant difference between all groups ($P < 0.001$, Kruskal-Wallis test).



Homma Y, *Ann Gastroenterol Surg* 2023
Konera S. *Tech coloprocto* 2023

The risk of definitive stoma formation at 10 years after low and ultralow anterior resection for rectal cancer

B. Celerier*†, Q. Denost*†, B. Van Geluwe*†, A. Pontallier*† and E. Rullier*†

*Department of Digestive Surgery, CHU Bordeaux, Saint André Hospital, Bordeaux, France and †Université Bordeaux Segalen, Bordeaux, France

50

ORIGINAL CONTRIBUTIONS

Final Results of the GRECCAR-6 Trial on Waiting Period Following Neoadjuvant Radiochemotherapy for Locally Advanced Rectal Cancer: 5 Years of Follow-up

DISEASES OF THE COLON & RECTUM VOLUME 68: 2 (2025)

Maxime K. Collard, M.D., Ph.D.¹ • Laurent Mineur, M.D.² • Célia Nekrouf, M.D.³ • Quentin Denost, M.D., Ph.D.⁴ • Philippe Rouanet, M.D.⁵ • Cécile de Chaisemartin, M.D.⁶ • Aude Merdrignac, M.D.⁷ • Mehrdad Jafari, M.D.⁸ • Eddy Cotte, M.D., Ph.D.⁹ • Jérôme Desrame, M.D.¹⁰ • Gilles Manceau, M.D., Ph.D.¹¹ • Stéphane Benoist, M.D., Ph.D.¹² • Etienne Buscail, M.D.¹³ • Mehdi Karoui, M.D.¹⁴ • Yves Panis, M.D., Ph.D.¹⁵ • Guillaume Piessen, M.D., Ph.D.¹⁶ • Alain Sautemont, M.D.¹⁷ • Michel Prudhomme, M.D.¹⁸ • Frédérique Peschaud, M.D., Ph.D.¹⁹ • Anne Dubois, M.D.²⁰ • Jérôme Loriau, M.D.²¹ • Jean-Jacques Tuech, M.D., Ph.D.²² • Emilie Duchalais, M.D., Ph.D.²³ • Renato Lupinacci, M.D., Ph.D.²⁴ • Nicolas Goasgen, M.D.²⁵ • Tabassome Simon, M.D., Ph.D.³ • Yann Parc, M.D., Ph.D.¹ • Jérémie H. Lefevre, M.D., Ph.D.¹ On behalf of the The French Research Group of Rectal Cancer Surgery (GRECCAR)



8,4% sur RCT multicentrique

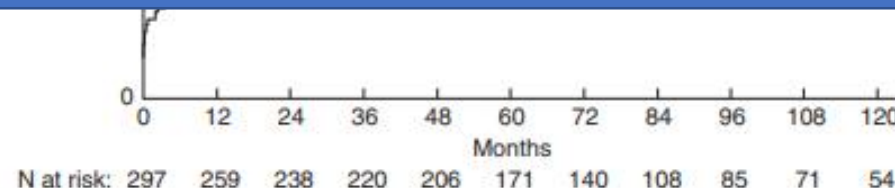
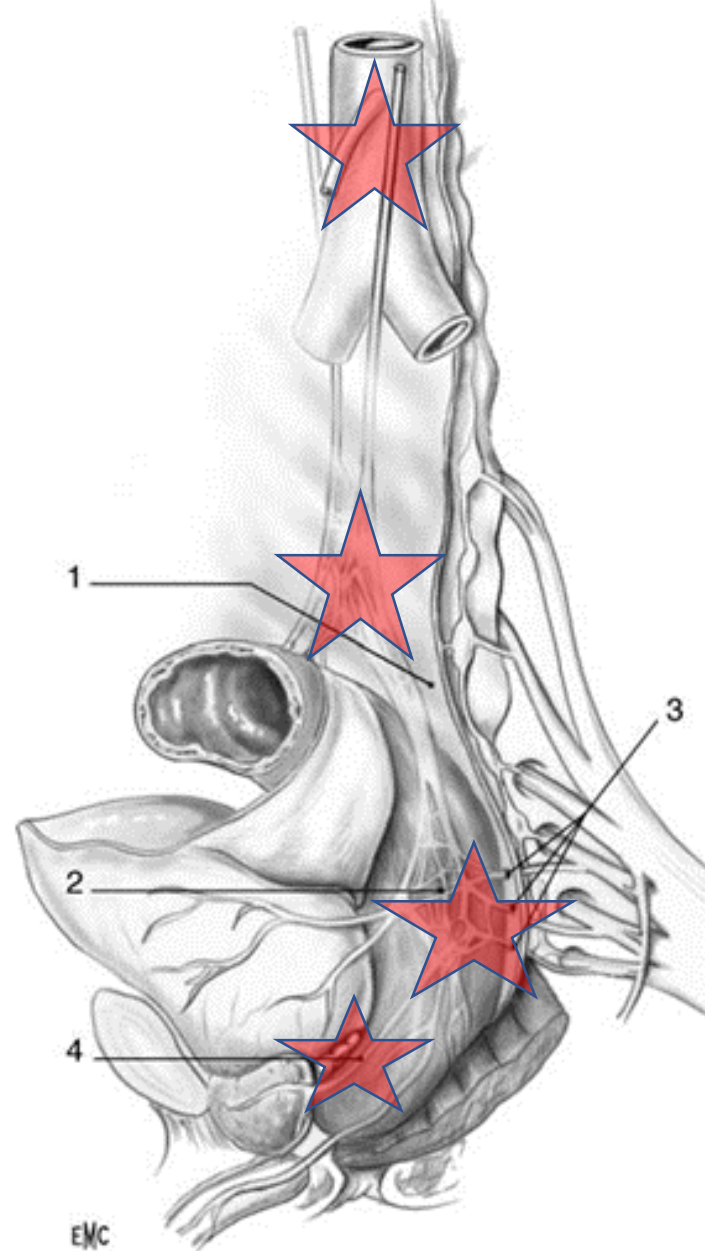
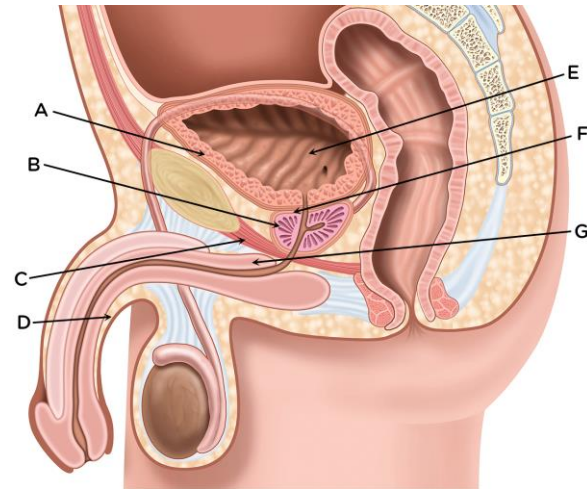
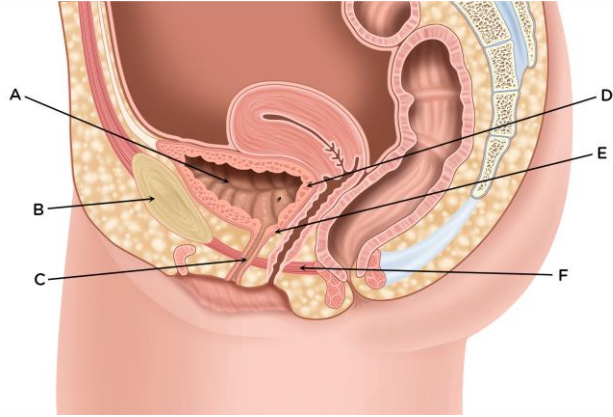


Figure 1 Incidence of definitive stoma formation after rectal excision for rectal cancer.

Séquelles à long terme : uro-génitales



**Lésions innervation
autonome
sympathique ou
parasympathique**

Séquelles à long terme : urinaires



Rétention
(→20%)

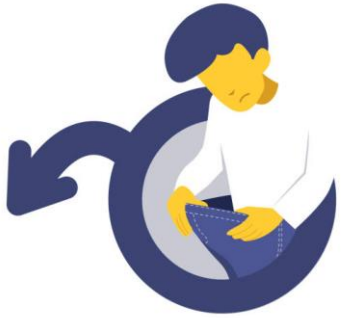


Incontinence
(→23%)

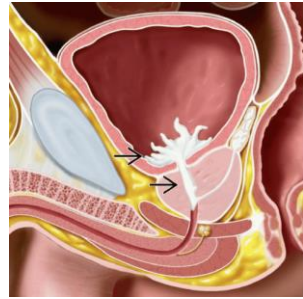


Instabilité vésicale
(→37%)

Séquelles à long terme : sexuelles



**Dysfonction
érectile
(→35%¹)**



**Ejaculation
rétrograde**

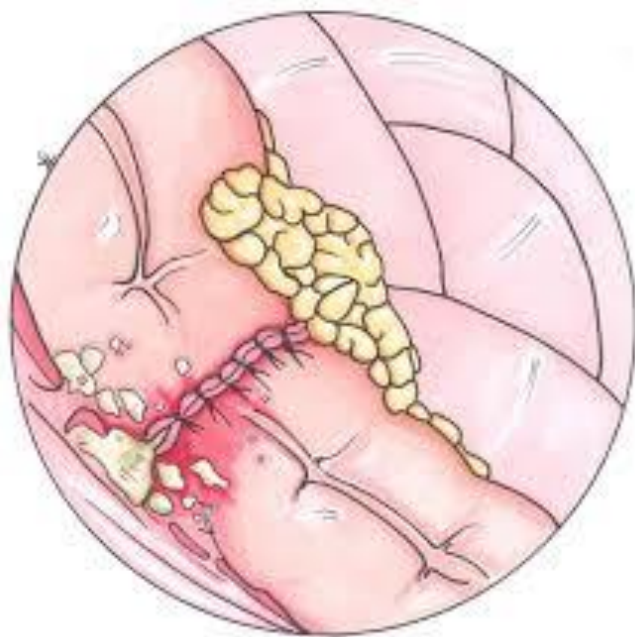


**Sécheresse
vaginale**



**Baisse
libido**

>50% patients sans activité sexuelle après traitement



Impact of long-course neoadjuvant radiation on postoperative low anterior resection syndrome and stoma status in rectal cancer: long-term functional follow-up of a randomized clinical trial

Siqi He^{1,2,3}, Jinquan Zhang^{2,3}, Runxian Wang¹, Li Li⁴, Lishuo Shi⁵, Donglin Ren^{4,6}, Jianping Wang^{2,3}, Yanhong Deng^{3,7} and Ruoxu Dou^{1,2,3,*}

3 schémas Traitement néoadjuvant

5FU+50Gy

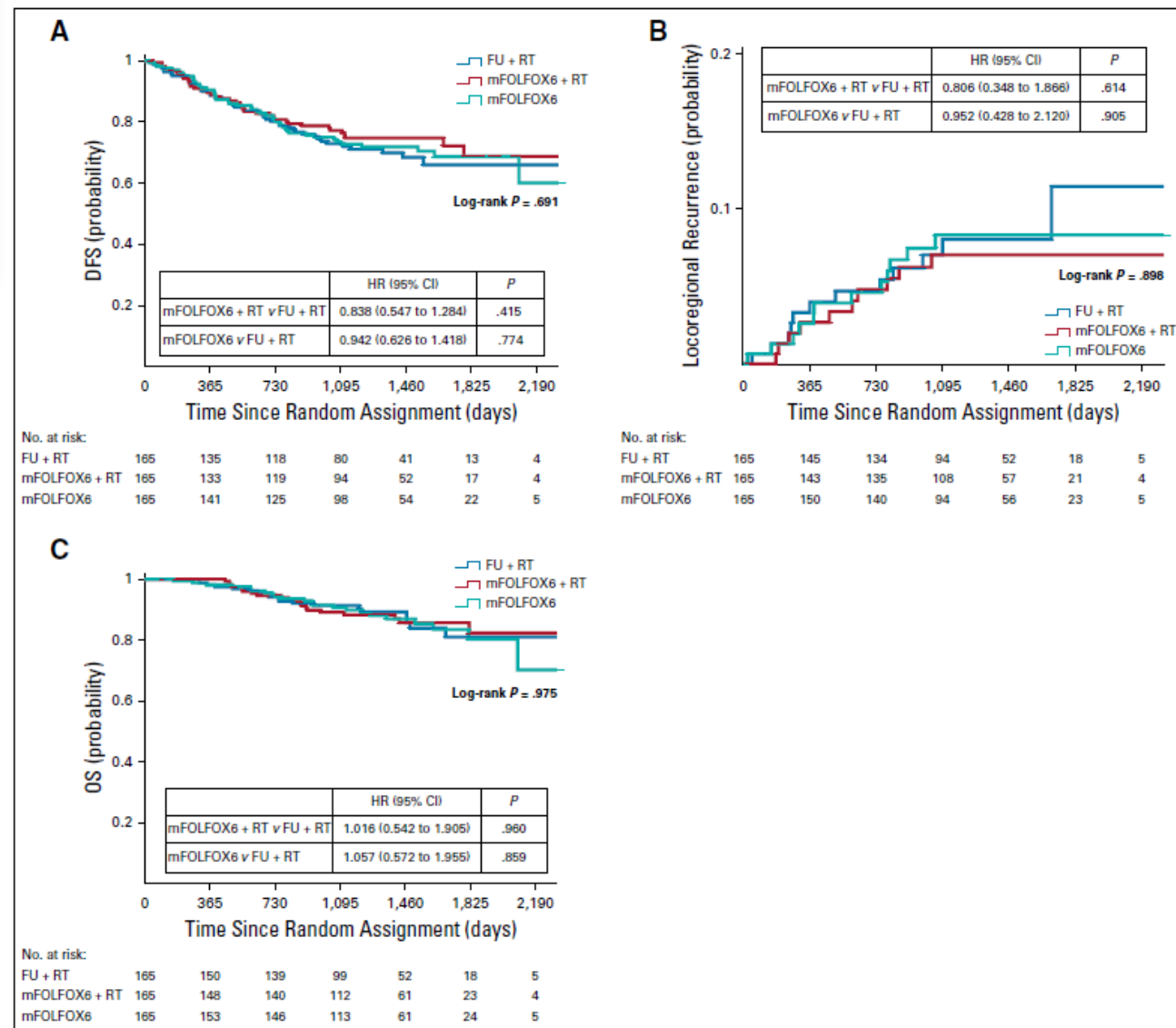
vs

mFOLFOX6+50Gy

vs

mFOLFOX6

RCT FOWARC, n=495



Impact of long-course neoadjuvant radiation on postoperative low anterior resection syndrome and stoma status in rectal cancer: long-term functional follow-up of a randomized clinical trial

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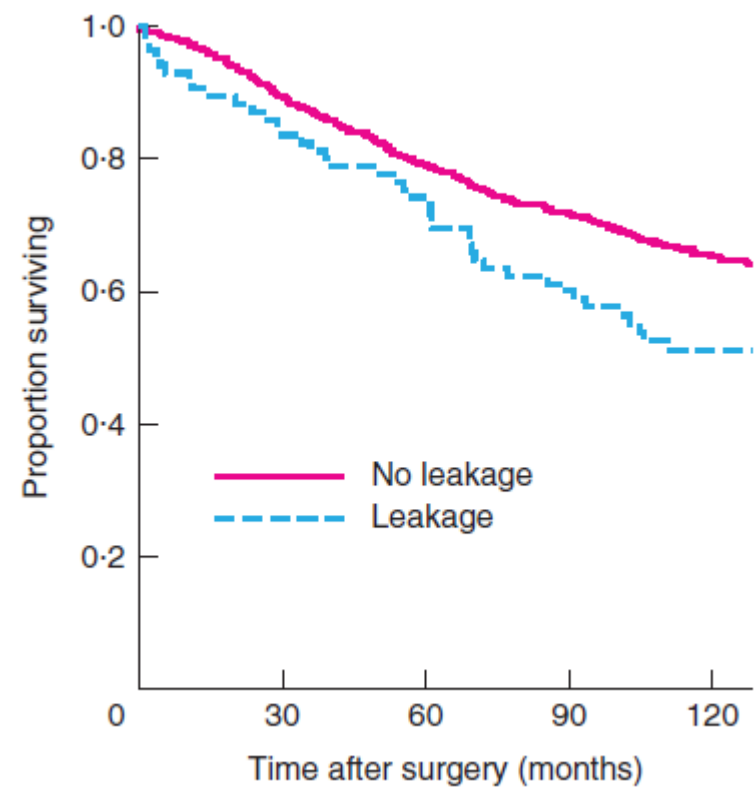
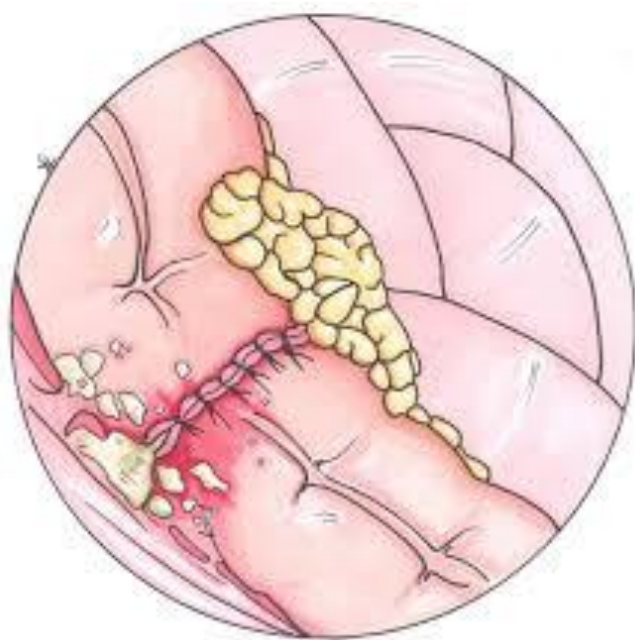
RCT FOWARC, n=495



Table 3. Association of factors with persistent stoma and major low anterior resection syndrome of 203 patients in the follow-up

Characteristics	No/minor LARS	Major LARS/persistent stoma	Univariate analysis		Multivariate analysis	
			OR (95% c.i.)	P	OR (95% c.i.)	P
Anastomotic leak†				<0.001		<0.001
No	123 (71.9)	48 (28.1)	Reference		Reference	
Grade A	8 (44.4)	10 (55.6)	5.07 (2.41–10.67)		4.97 (2.24–11.05)	
Grade B	0	8 (100)				
Grade C	0	6 (100)				
Follow-up time (months), median (range)	83 (65–122)	85 (37–120)	1.01 (0.99–1.04)	0.258		

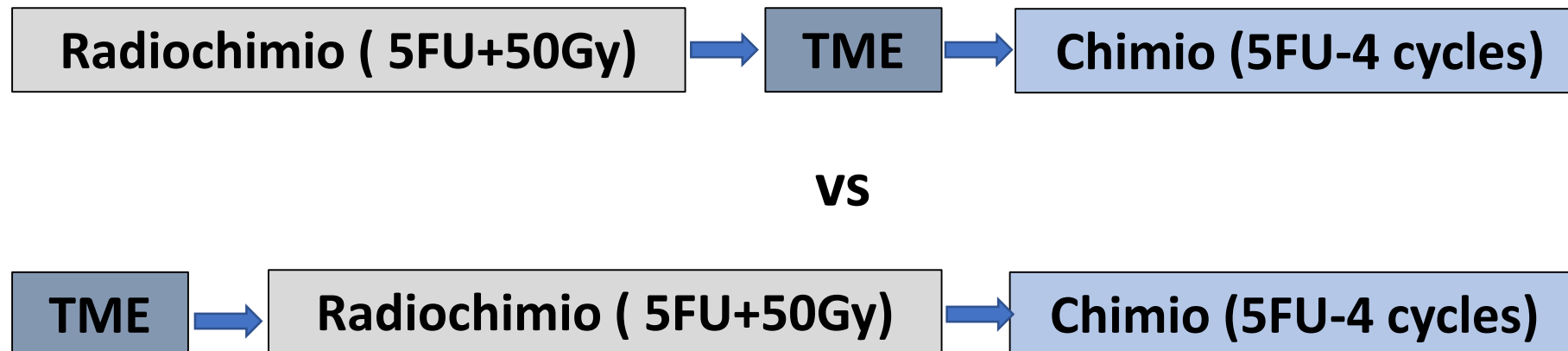
x5





Long-term prognostic impact of surgical complications in the German Rectal Cancer Trial CAO/ARO/AIO-94

T. Sprenger¹ , T. Beißbarth², R. Sauer³, J. Tschmelitsch⁸, R. Fietkau³, T. Liersch¹, W. Hohenberger⁴, L. Staib⁵, J. Gaedcke¹, H.-R. Raab⁶, C. Rödel⁷ and M. Ghadimi¹



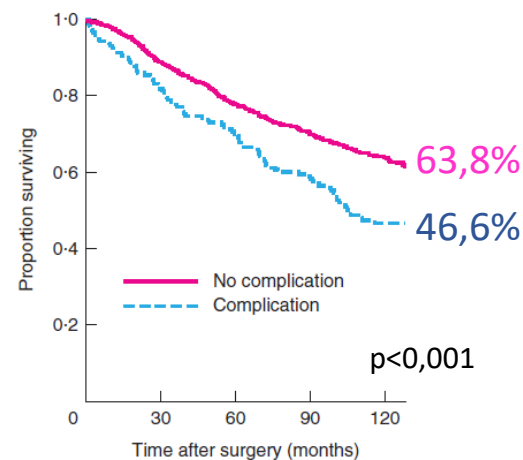
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Sauer R, Becker H, Hohenberger W, Rödel C, Wittekind C, Fietkau R *et al.* Preoperative *versus* postoperative chemoradiotherapy for rectal cancer. *N Engl J Med* 2004;**351**: 1731–1740.



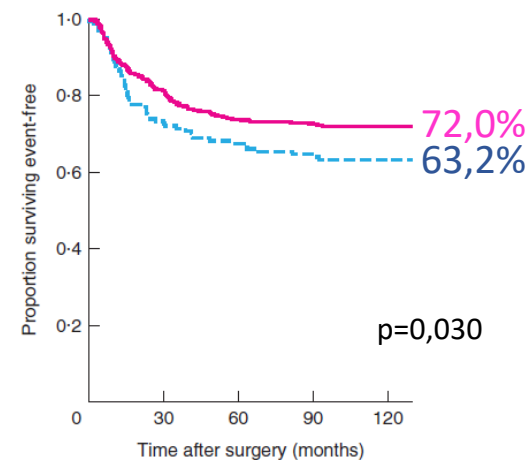
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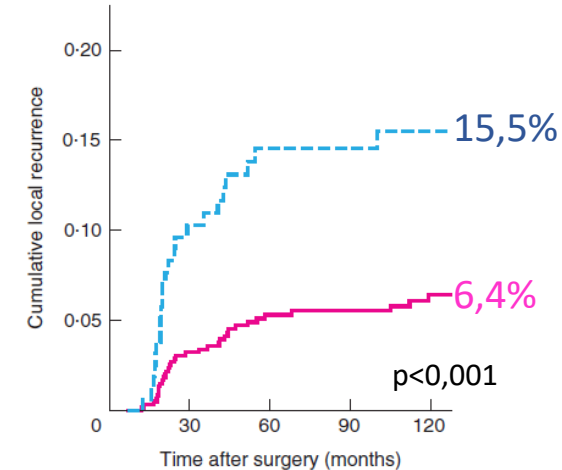
No. at risk			
No complication	613	474	281
Complication	170	119	61

a Overall survival



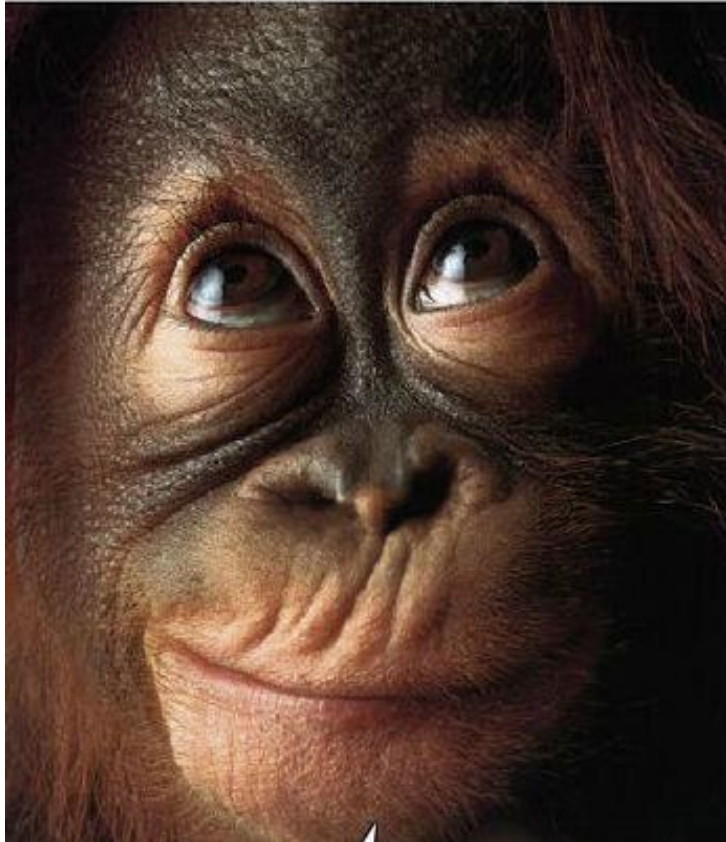
No. at risk			
No complication	613	424	260
Complication	170	100	57

b Distant metastasis-free survival



No. at risk			
No complication	613	459	272
Complication	170	112	61

c Local recurrence



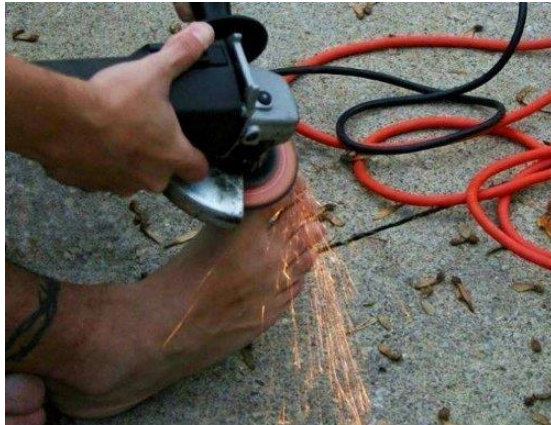
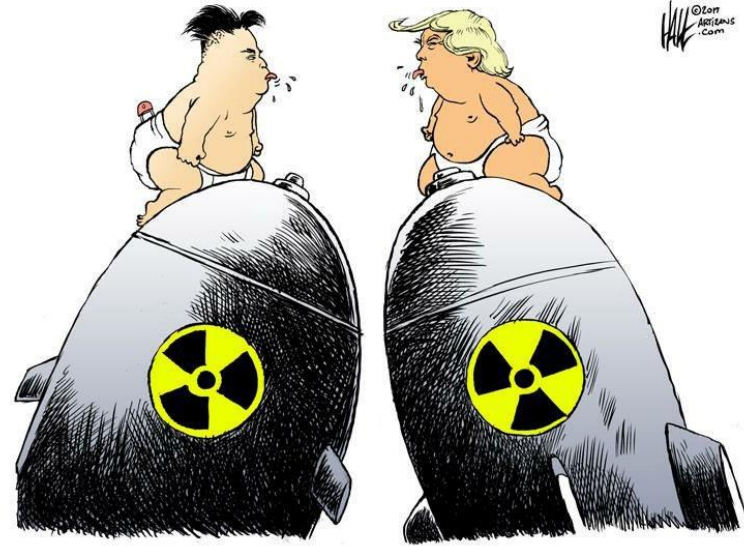
Facteurs de risques

- **Liés au patient (non modifiables)**

- Age
- Sexe (homme)
- Score ASA
- DNID
- IR
- Obésité
- Stade TNM

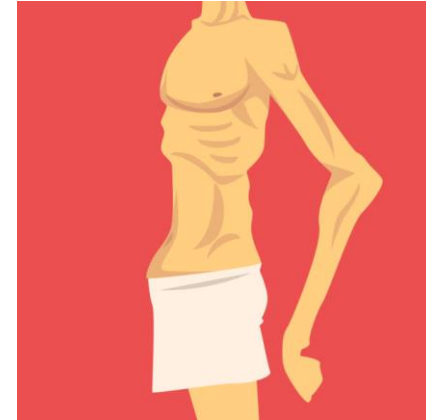


Certains sont évitables !



Facteurs de risques corrigibles

- **Liés au patient**
 - Dénutrition
 - Tabac
 - Anémie
- **Liés aux traitements**
 - RTE
 - Corticothérapie





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journal homepage: www.ejso.com

A preoperative prediction model for anastomotic leakage after rectal cancer resection based on 13,175 patients

V.T. Hoek^{a,*}, S. Buettner^a, C.L. Sparreboom^a, R. Detering^b, A.G. Menon^{a,c},
G.J. Kleinrensink^d, M.W.J.M. Wouters^{e,f,g}, J.F. Lange^{a,1},
J.K. Wiggers^{h,1}, On behalf of the Dutch ColoRectal Audit group

Multivariable Cox proportional regression analysis.

	Points	Odds ratio	95% CI	p-value
Male gender	26	1.62	(1.79–9.17)	<0.0001
Age ^a		^a	^a	0.005
BMI, 5 kg/m ²	6	1.11	(1.03–1.19)	0.0046
Stoma				
None	43	Ref	—	—
Deviating Stoma	0	0.45	(0.39–0.51)	<0.0001
ASA III/IV	15	1.33	(1.13–1.57)	0.0007
Radiotherapy				0.0002
None	0	Ref	—	—
5x5 Gy	16	1.35	(1.17–1.56)	<0.0001
50 Gray and chemotherapy	5	1.11	(0.93–1.32)	0.2504
cT Stage				0.0273
T1	0	Ref	—	—
T2	6	1.12	(0.81–1.53)	0.5013
T3	16	1.35	(0.99–1.84)	0.0669
T4	7	1.15	(0.75–1.70)	0.5687
Tumor height from anal verge, mm	–6	0.89	(0.87–0.90)	<0.0001

^a Variable due to restricted cubic splines; $0.08 \times \text{Age} - 0.001 \times \text{Age}^3 + 0.003 \times \text{Age}^3 - 0.001 \times \text{Age}^3$; C-index of 0.66365 and Brier score of 0.0872.

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Effect of Interval (7 or 11 weeks) Between Neoadjuvant Radiochemotherapy and Surgery on Complete Pathologic Response in Rectal Cancer: A Multicenter, Randomized, Controlled Trial (GRECCAR-6)

Jérémie H. Lefevre, Laurent Mineur, Salma Kotti, Eric Rullier, Philippe Rouanet, Cécile de Chaisemartin, Bernard Meunier, Jafari Mehrdad, Eddy Cotte, Jérôme Desrame, Mehdi Karoui, Stéphane Benoist, Sylvain Kirzin, Anne Berger, Yves Panis, Guillaume Piessen, Alain Sautemont, Michel Prudhomme, Frédérique Peschaud, Anne Dubois, Jérôme Loriau, Jean-Jacques Tuech, Guillaume Meurette, Renato Lupinacci, Nicolas Goasgen, Yann Parc, Tabassome Simon, and Emmanuel Tiret

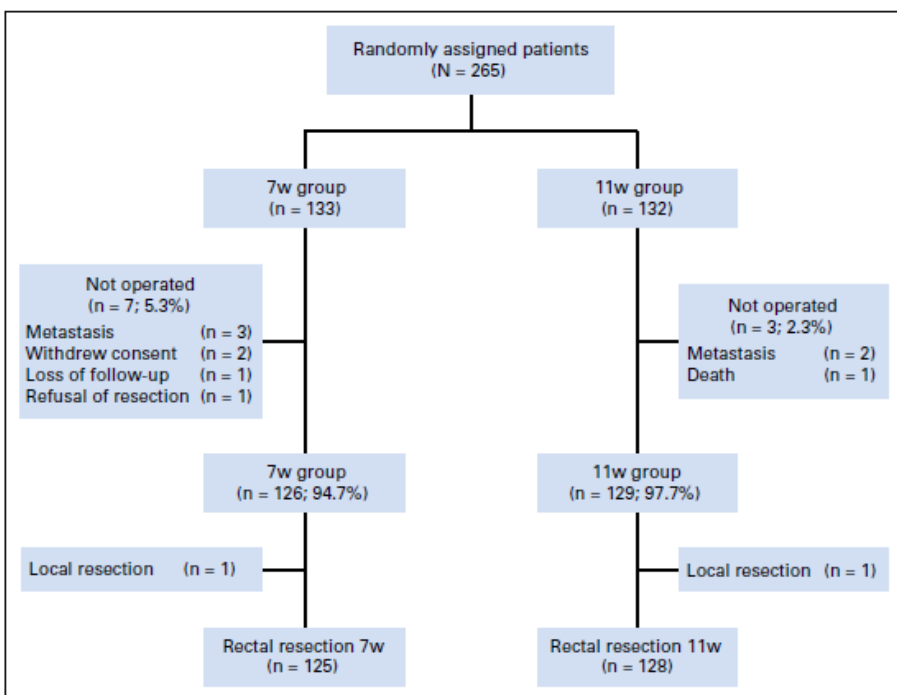


Table 2. Surgical Procedures and Postoperative Course

Characteristic	Overall (N = 253)	7 Weeks (n = 125)	11 Weeks (n = 128)	P
Postoperative course				
Overall morbidity	97 (38.3)	40 (32)	57 (44.5)	.0404
Dindo classification				
I	16 (6.7)	7 (17.5)	9 (15.8)	.4195
II	44 (45.8)	15 (37.5)	29 (50.9)	
III	28 (29.2)	13 (32.5)	15 (26.3)	
IV	7 (8.3)	3 (7.5)	4 (7.0)	
V	2 (2.1)	2 (5.0)	0 (0)	
Blood	17 (6.7)	8 (6.4)	9 (7.0)	.8410
Mean units of packed blood	2.6 ± 1.1	2.9 ± 1.4	2.3 ± 0.7	.3099
Anastomotic leakage	34 of 227 (15.0)	18 of 113 (15.9)	16 of 114 (14.0)	.6113
Management of anastomotic leakage				
Reintervention	17 (50)	9 (50)	8 (50)	1.00
Percutaneous drainage	6 (17.7)	3 (16.7)	3 (18.8)	
Medical treatment	11 (32.4)	6 (33.3)	5 (31.3)	
Perineal complications after APR	8 of 26 (30.8)	2 of 12 (16.7)	6 of 14 (42.9)	.3095
Medical complications	66 (26.1)	24 (19.2)	42 (32.8)	.0137



Effect of Interval (7 or 11 weeks) Between Neoadjuvant Radiochemotherapy and Surgery on Complete Pathologic Response in Rectal Cancer: A Multicenter, Randomized, Controlled Trial (GRECCAR-6)

Jérémie H. Lefevre, Laurent Mineur, Salma Kotti, Eric Rullier, Philippe Rouanet, Cécile de Chaisemartin, Bernard Meunier, Jafari Mehrdad, Eddy Cotte, Jérôme Desrame, Mehdi Karoui, Stéphane Benoist, Sylvain Kirzin, Anne Berger, Yves Panis, Guillaume Piessen, Alain Saudemont, Michel Prudhomme, Frédérique Peschaud, Anne Dubois, Jérôme Loriau, Jean-Jacques Tuech, Guillaume Meurette, Renato Lupinacci, Nicolas Goasgen, Yann Parc, Tabassome Simon, and Emmanuel Tiret

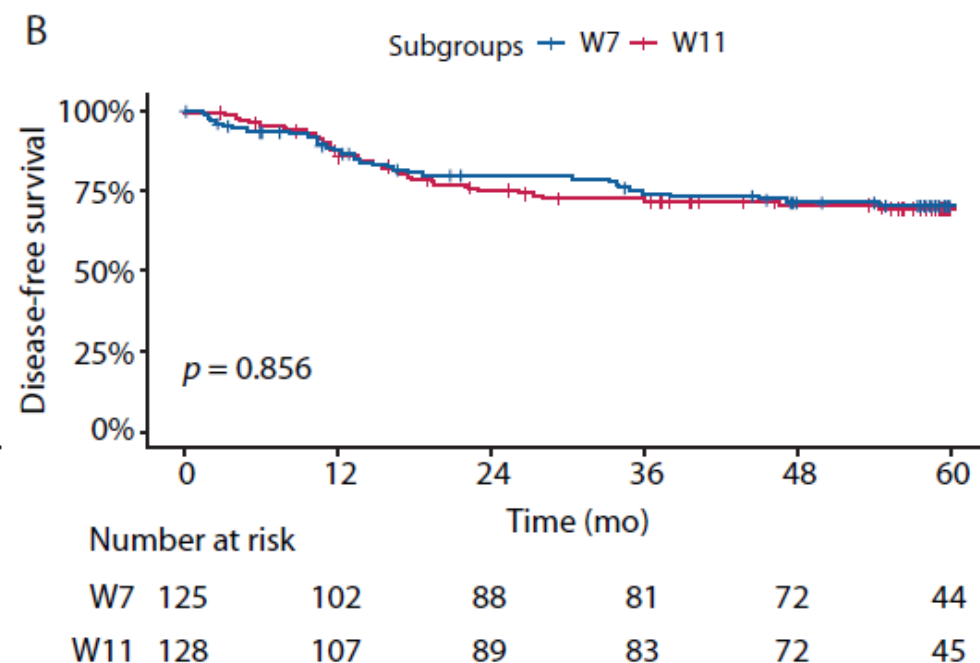
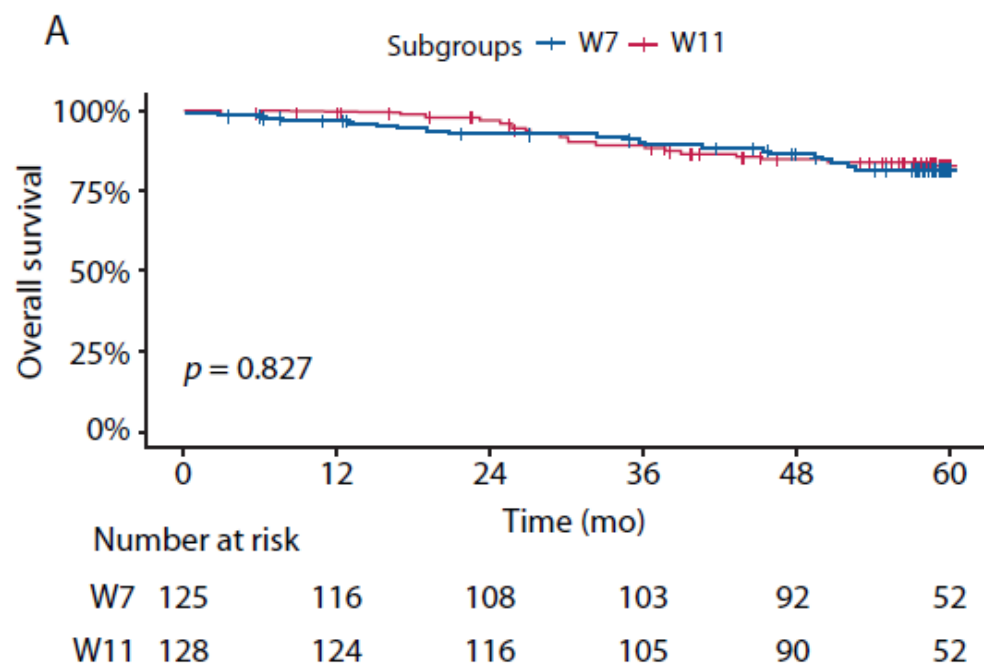
Table 3. Pathologic Examinations of Resected Specimens According to the Randomly Assigned Group

Tumor Characteristic	Overall (N = 253)	7 Weeks (n = 125)	11 Weeks (n = 128)	P
Specimen length, cm	27.5 ± 9.8	26.6 ± 7.8	28.4 ± 11.3	.1391
Tumor size, cm	2.9 ± 3.0	2.8 ± 3.0	3.1 ± 2.9	.5101
Circumferential invasion	242 (95.7)	118 (94.4)	124 (96.9)	
≤ 50%	191 (78.9)	92 (78.0)	99 (79.8)	.4276
> 50%	51 (21.1)	26 (22.0)	25 (20.2)	
Tumor perforation	11 (4.3)	5 (4.0)	6 (4.7)	.7886
Quality of mesorectum	242 (95.7)	120 (96)	122 (95.3)	
Complete (I)	204 (84.3)	108 (90)	96 (78.7)	.0156
Almost complete (II)/incomplete (III)	38 (15.7)	12 (10)	26 (21.3)	
ypTN classification (consensus)				
ypT0	47 (18.6)	20 (16.0)	27 (21.1)	.6627
ypTis	5 (2.0)	4 (3.2)	1 (0.8)	
ypT1	15 (5.9)	8 (6.4)	7 (5.5)	
ypT2	71 (28.1)	36 (28.8)	35 (27.3)	
ypT3	101 (39.9)	52 (41.6)	49 (38.3)	
ypT4	13 (5.2)	5 (4.0)	8 (6.3)	
ypTx	1 (0.4)	0 (0)	1 (0.8)	

Final Results of the GRECCAR-6 Trial on Waiting Period Following Neoadjuvant Radiochemotherapy for Locally Advanced Rectal Cancer: 5 Years of Follow-up

DISEASES OF THE COLON & RECTUM VOLUME 68: 2 (2025)

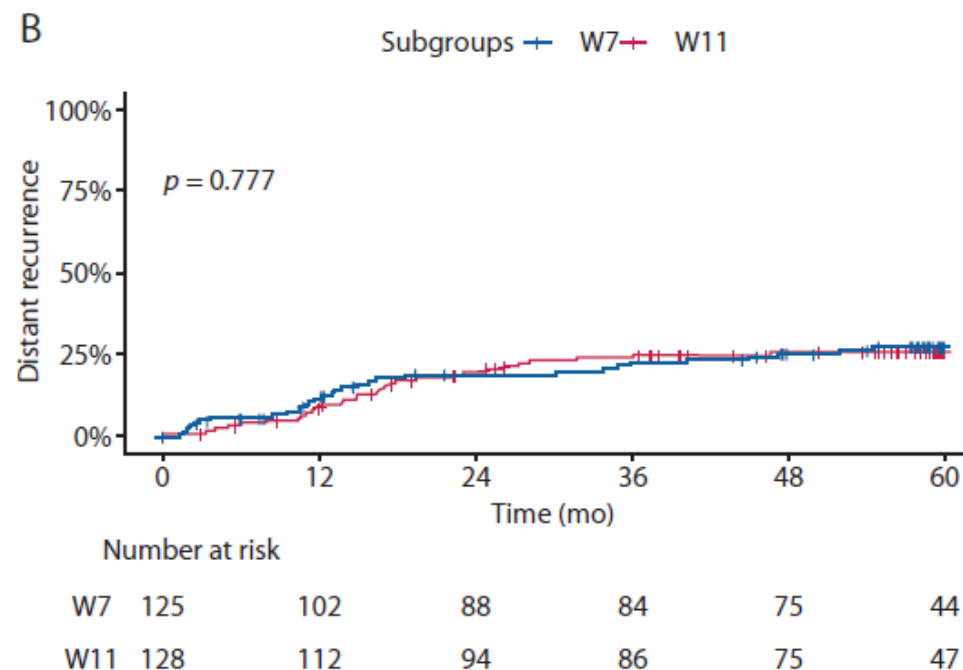
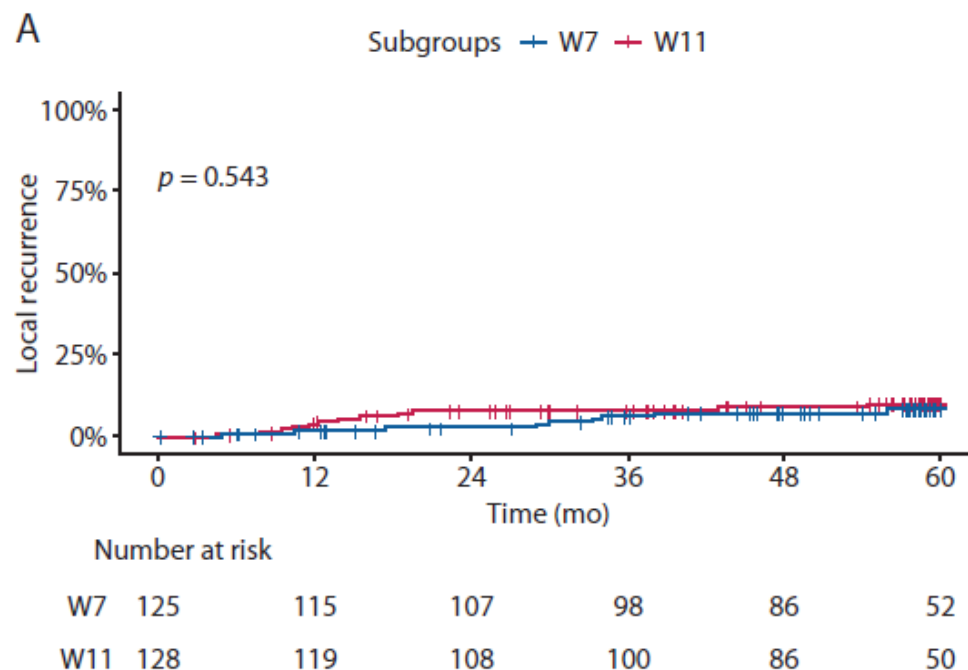
Maxime K. Collard, M.D., Ph.D.¹ • Laurent Mineur, M.D.² • Célia Nekrouf, M.D.³
 Quentin Denost, M.D., Ph.D.⁴ • Philippe Rouanet, M.D.⁵ • Cécile de Chaisemartin, M.D.⁶
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 Yann Parc, M.D., Ph.D.¹ • Jérémie H. Lefevre, M.D., Ph.D.¹ On behalf of the The French
 Research Group of Rectal Cancer Surgery (GRECCAR)



Final Results of the GRECCAR-6 Trial on Waiting Period Following Neoadjuvant Radiochemotherapy for Locally Advanced Rectal Cancer: 5 Years of Follow-up

DISEASES OF THE COLON & RECTUM VOLUME 68: 2 (2025)

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Risk factors for sexual dysfunction after rectal cancer treatment

— EUROPEAN JOURNAL OF CANCER 45 (2009) 1578–1588 —

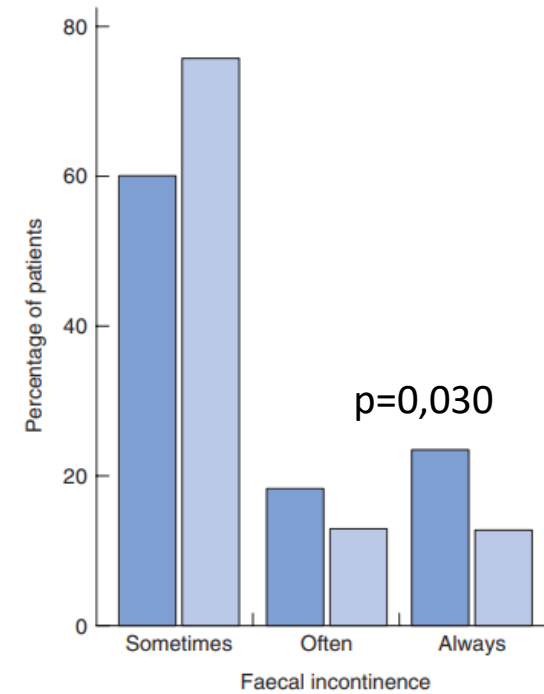
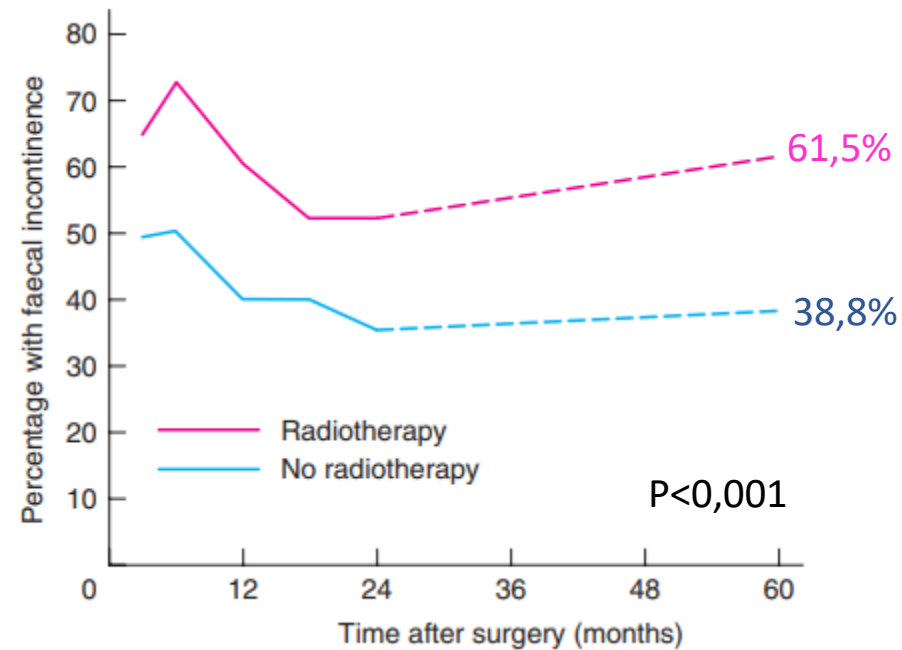
M.M. Lange^a, C.A.M. Marijnen^{b,c}, C.P. Maas^d, H. Putter^e, H.J. Rutten^f, A.M. Stiggelbout^g, E. Meershoek-Klein Kranenbarg^a, C.J.H. van de Velde^{a,*}, Cooperative clinical investigators of the Dutch. Total mesorectal excision trial

Table 2 – Results of univariate and multivariate regression analyses of the influence of patient- and treatment-related factors on the mean relative scores of general sexual dysfunction, erectile dysfunction and ejaculatory problems in male patients (SD, sexual dysfunction; N, number of patients; SE, standard error; LAR, low anterior resection; APR, abdominoperineal resection; uni, univariable analysis; and multi, multivariable analysis).

Risk factors	General SD					Erectile dysfunction					Ejaculatory problems				
	N	Relative score	SE	p-Value uni	p-Value multi	N	Relative score	SE	p-Value uni	p-Value multi	N	Relative score	SE	p-Value uni	p-Value multi
Preoperative radiotherapy				0.003	0.003				0.108					0.024	0.026
No	185	16.06	2.06			170	28.50	2.59			162	26.22	2.68		
Yes	175	24.59	1.98			152	34.47	2.63			144	35.14	2.87		
Anastomotic leakage				0.031	0.076				0.043	0.034				0.022	0.043
No	332	19.30	1.46			299	30.28	1.89			284	29.17	2.02		
Yes	28	30.95	6.59			23	44.82	7.86			22	46.56	7.90		

Risk factors for faecal incontinence after rectal cancer treatment

M. M. Lange¹, M. den Dulk¹, E. R. Bossema², C. P. Maas³, K. C. M. J. Peeters¹, H. J. Rutten⁴, E. Klein Kranenbarg¹, C. A. M. Marijnen^{2,5} and C. J. H. van de Velde¹, cooperative clinical investigators of the Dutch Total Mesorectal Excision trial



b Frequency at 5 years

Impact of long-course neoadjuvant radiation on postoperative low anterior resection syndrome and stoma status in rectal cancer: long-term functional follow-up of a randomized clinical trial

Siqi He^{1,2,3}, Jinquan Zhang^{2,3}, Runxian Wang¹, Li Li⁴, Lishuo Shi⁵, Donglin Ren^{4,6}, Jianping Wang^{2,3}, Yanhong Deng^{3,7} and Ruoxu Dou^{1,2,3,*}

3 schémas Traitement néoadjuvant

5FU+50Gy

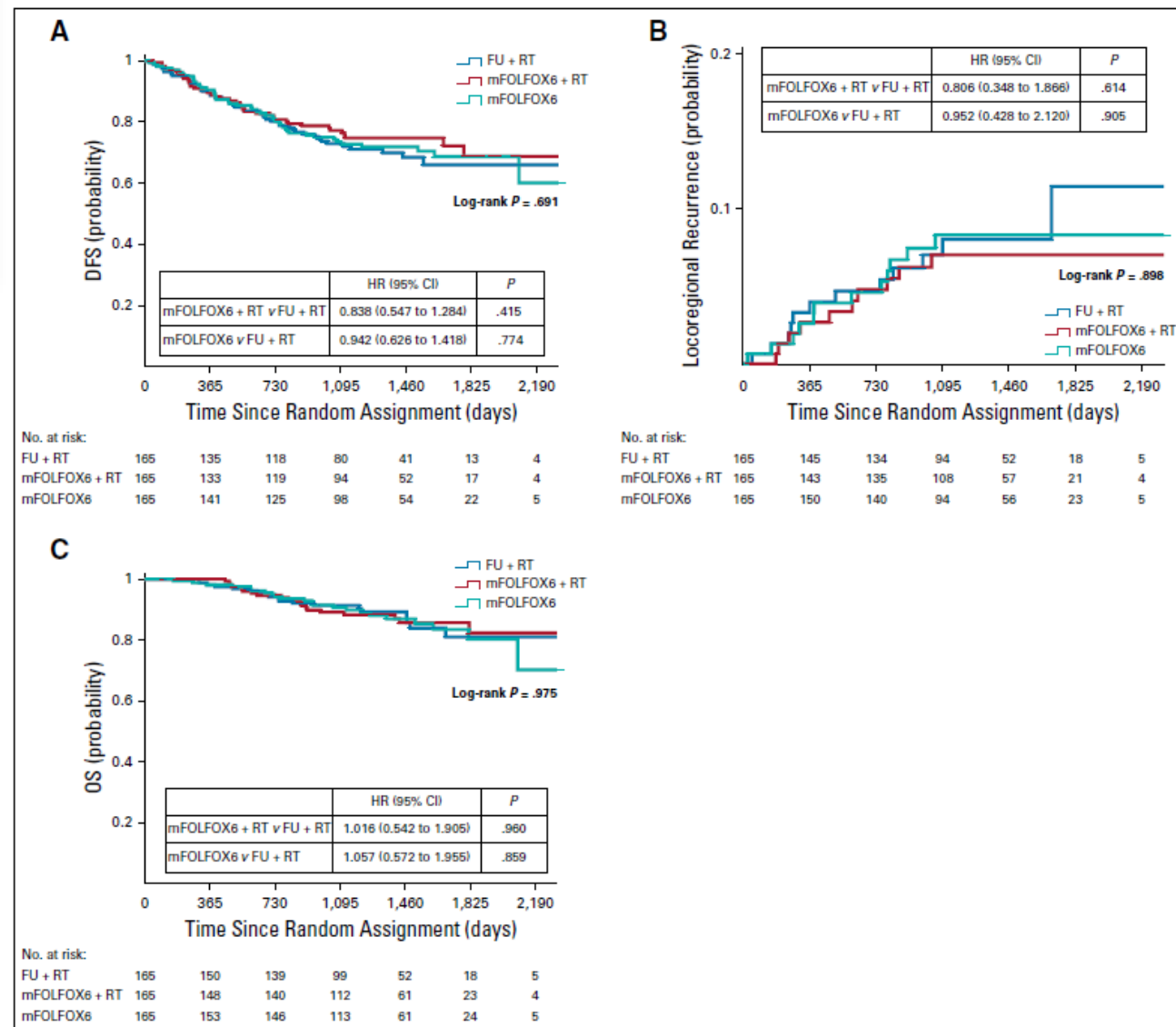
vs

mFOLFOX6+50Gy

vs

mFOLFOX6

RCT FOWARC, n=495



Impact of long-course neoadjuvant radiation on postoperative low anterior resection syndrome and stoma status in rectal cancer: long-term functional follow-up of a randomized clinical trial

Siqi He^{1,2,3}, Jinquan Zhang^{2,3}, Runxian Wang¹, Li Li⁴, Lishuo Shi⁵, Donglin Ren^{4,6}, Jianping Wang^{2,3}, Yanhong Deng^{3,7} and Ruoxu Dou^{1,2,3,*}

RCT FOWARC, n=495



Table 3. Association of factors with persistent stoma and major low anterior resection syndrome of 203 patients in the follow-up

Characteristics	No/minor LARS	Major LARS/persistent stoma	Univariate analysis		Multivariate analysis	
			OR (95% c.i.)	P	OR (95% c.i.)	P
Neoadjuvant therapy				<0.001		0.027
nCT	65 (79.3)	17 (20.7)	Reference		Reference	
nCRT	66 (54.5)	55 (45.5)	3.19 (1.68–6.06)		2.20 (1.10–4.40)	

Neoadjuvant chemotherapy with FOLFIRINOX and preoperative chemoradiotherapy for patients with locally advanced rectal cancer (UNICANCER-PRODIGE 23): a multicentre, randomised, open-label, phase 3 trial



Thierry Conroy, Jean-François Bosset, Pierre-Luc Etienne, Emmanuel Rio, Éric François, Nathalie Mesgouez-Nebout, Véronique Vendrely, Xavier Artignan, Olivier Bouché, Dany Gargot, Valérie Boige, Nathalie Bonichon-Lamichhane, Christophe Louvet, Clotilde Morand, Christelle de la Fouchardière, Najib Lamfichekh, Béata Juzyna, Claire Jouffroy-Zeller, Eric Rullier, Frédéric Marchal, Sophie Gourgou, Florence Castan, Christophe Borg, on behalf of the Unicancer Gastrointestinal Group and Partenariat de Recherche en Oncologie Digestive (PRODIGE) Group*

	TNT	RCT	
Chirurgie :	N=213	N=218	P
Durée médiane d'hospitalisation (range)	11 jours (3-78)	12 jours (2-99)	ns
Morbidité postopératoire	29.3%	31.2%	ns
Réopérations pour complications	10.4%	13.9%	ns



La technique peut-elle améliorer
les résultats ?

Robotic versus laparoscopic surgery for middle and low rectal cancer (REAL): short-term outcomes of a multicentre randomised controlled trial



Qingyang Feng*, Weitang Yuan*, Taiyuan Li*, Bo Tang*, Baoqing Jia*, Yanbing Zhou*, Wei Zhang, Ren Zhao, Cheng Zhang, Longwei Cheng, Xiaoqiao Zhang, Fei Liang, Guodong He, Ye Wei, Jianmin Xu, for the REAL Study Group†

Lancet Gastroenterol Hepatol
2022; 7: 991–1004



1240 patients (620/groupe)



11 centres



cT1-3 N0-1 M0



=



Robotic versus laparoscopic surgery for middle and low rectal cancer (REAL): short-term outcomes of a multicentre randomised controlled trial



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Lancet Gastroenterol Hepatol
2022; 7: 991–1004

	Robotic group (n=586)	Laparoscopic group (n=585)	Difference (95% CI)	p value
<u>Circumferential resection margin ≤ 1 mm*</u>	22/547 (4.0%)	39/543 (7.2%)	-3.2 (-6.0 to -0.4)	0.023
<u>Macroscopic completeness of resection†</u>	..	..	..	0.042
Complete	559 (95.4%)	537 (91.8%)	3.6 (0.8 to 6.5)	..
Nearly complete	18 (3.1%)	33 (5.6%)	-2.6 (-5.0 to -0.2)	..
Incomplete	9 (1.5%)	15 (2.6%)	-1.0 (-2.8 to 0.6)	..
<u>Harvested lymph nodes</u>	15.0 (13.0 to 19.0)	14.0 (12.0 to 18.0)	1.0 (0.0 to 1.0)	0.006

Robotic versus laparoscopic surgery for middle and low rectal cancer (REAL): short-term outcomes of a multicentre randomised controlled trial



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Lancet Gastroenterol Hepatol
2022; 7: 991–1004

	Robotic group (n=586)	Laparoscopic group (n=585)	Difference (95% CI)	p value
Mortality within 30 days after operation	1 (0.2%)	1 (0.2%)	0.0 (−0.8 to 0.8)	>0.999*
<u>Patients with complications of Clavien–Dindo grade II or higher grade within 30 days after operation</u>	95 (16.2%)	135 (23.1%)	−6.9 (−11.4 to −2.3)	0.003
Anastomotic leakage†	25/486 (5.1%)	37/449 (8.2%)	−3.1 (−6.5 to 0.1)	0.057
<u>Time to first flatus, h</u>	38.0 (25.2 to 60.2)	44.0 (30.1 to 62.8)	−4.1 (−6.9 to −1.2)	0.003
Missing data	11 (1.9%)	14 (2.4%)	..	..
<u>Time to first defecation, h</u>	72.0 (42.0 to 107.0)	83.9 (56.3 to 118.8)	−11.8 (−17.2 to −6.3)	<0.0001
Missing data	10 (1.7%)	9 (1.5%)	..	..
<u>Postoperative hospital stay, days</u>	7.0 (7.0 to 11.0)	8.0 (7.0 to 12.0)	−1.0 (−1.0 to 0.0)	0.0001

Robotic versus laparoscopic surgery for middle and low rectal cancer (REAL): short-term outcomes of a multicentre randomised controlled trial



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Lancet Gastroenterol Hepatol
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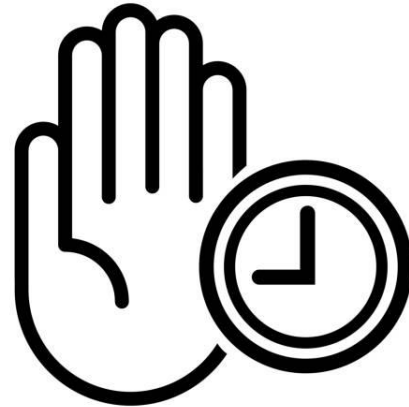
	Robotic group (n=586)	Laparoscopic group (n=585)	Difference (95% CI)	p value
Type of surgery	..	..	..	0.016*
<u>Abdominoperineal resection</u>	99 (16.9%)	133 (22.7%)	–5.8 (–10.4 to –1.3)	..
<u>Operating time, min</u>	173.0 (140.0 to 225.0)	170.0 (140.0 to 209.0)	2.0 (–4.0 to 10.0)	0.408
<u>Conversion to open surgery‡</u>	10 (1.7%)	23 (3.9%)	–2.2 (–4.3 to –0.4)	0.021
<u>Intraoperative complications**</u>	32 (5.5%)	51 (8.7%)	–3.3 (–6.3 to –0.3)	0.030

Robotic versus laparoscopic surgery for middle and low rectal cancer (REAL): short-term outcomes of a multicentre randomised controlled trial



Qingyang Feng, Weitang Yuan*, Taiyuan Li*, Bo Tang*, Baoqing Jia*, Yanbing Zhou*, Wei Zhang, Ren Zhao, Cheng Zhang, Longwei Cheng, Xiaoqiao Zhang, Fei Liang, Guodong He, Ye Wei, Jianmin Xu, for the REAL Study Group†*

*Lancet Gastroenterol Hepatol
2022; 7: 991–1004*



Résultats oncologiques ...

Comparison of Laparoscopic Versus Robot-Assisted Surgery for Rectal Cancers

The COLRAR Randomized Controlled Trial

Jun Seok Park, MD, PhD, Sung Min Lee, MD,* Gyu-Seog Choi, MD, PhD,*
Soo Yeun Park, MD,* Hye Jin Kim, MD,* Seung Ho Song, MD,*
Byung Soh Min, MD, PhD,† Nam Kyu Kim, MD, PhD,† Seon Hahn Kim, MD, PhD,‡
and Kang Young Lee, MD, PhD†*



295 patients (540 attendus)



3 centres



cT1-4 Nx M0



=



Comparison of Laparoscopic Versus Robot-Assisted Surgery for Rectal Cancers

The COLRAR Randomized Controlled Trial

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and Kang Young Lee, MD, PhD†



Critère évaluation principal = grade TME

80,7% vs 77,1% (p=0,57)

RANDOMIZED CONTROLLED TRIAL

Annals of Surgery • Volume 278, Number 1, July 2023

Comparison of Laparoscopic Versus Robot-Assisted Surgery for Rectal Cancers

The COLRAR Randomized Controlled Trial

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and Kang Young Lee, MD, PhD†*



Critère évaluation principal = grade TME
80,7% vs 77,1% (p=0,57)



Taux CRM+ après radiochimio
0% vs 8,2% (p=0,034)



Durée utilisation antalgique IV
4 vs 5j (p=0,028)



Score fct sexuel chez ho (IIEF-5) à 2 ans
8,1% vs 4,6% (p=0,010)



Effet volume

Original article

British Journal of Surgery 2007; **94**: 880–889

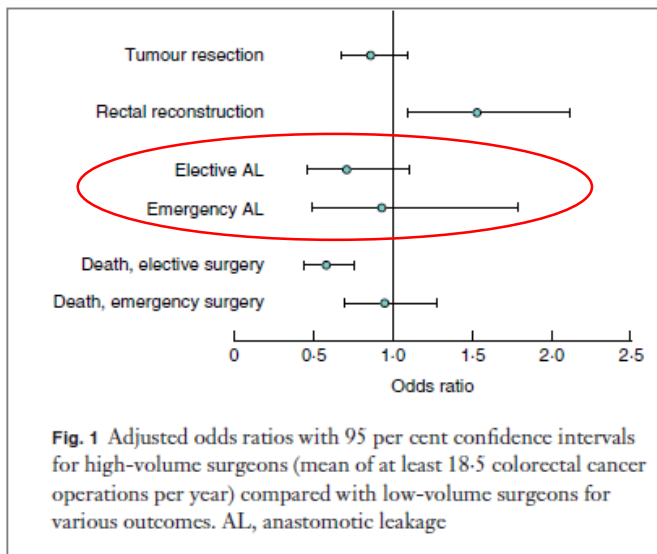
Impact of surgeon volume and specialization on short-term outcomes in colorectal cancer surgery

D. W. Borowski¹, S. B. Kelly¹, D. M. Bradburn², R. G. Wilson³, A. Gunn⁴, A. A. Ratcliffe⁵ and the members of the Northern Region Colorectal Cancer Audit Group

¹Department of Surgery, North Tyneside General Hospital, North Shields, ²Department of Surgery, Wansbeck General Hospital, Ashington, ³James Cook University Hospital, Middlesbrough, ⁴Northern Region Colorectal Cancer Audit Group, Centre for Life, Institute of Human Genetics, Newcastle upon Tyne, and ⁵Wolfson Research Institute, Durham University, Stockton on Tees, UK

Correspondence to: Mr A. Gunn, Northern Region Colorectal Cancer Audit Group (NORCCAG), Centre for Life, Room D12, Institute of Human Genetics, Times Square, Newcastle upon Tyne, NE1 4BZ, UK (e-mail: algilgunn@lineone.net)

Regional audit
n=8219



Risque de fistule diminue avec augmentation volume opératoire de manière continue

OR 0,91 pour 10 patients; p=0,049

Impact de la spécialisation du chirurgien

Taux de fistule (univarié)

- Chirurgiens généraux: **13.1%**

$P < 0.001$

- Chirurgiens Colorectaux : **7.1%**

Impact de la spécialisation du chirurgien

En analyse multivariée

***Taux de fistule + important chirurgiens généraux
vs chirurgiens colorectaux***

OR:1.94, 95% CI 1.10–3.40, $P=0.02$



Comment améliorer résultats ?



OPTIMISATION PERI-OPERATOIRE

Préhabilitation et réhabilitation après chirurgie

La réhabilitation améliorée après chirurgie

RAAC

Pré-opératoire **Per-opératoire** **Post-opératoire**

Information et éducation
du patient

Apports de carbohydrates
préopératoires

Pas de jeûne préopératoire

Pas de préparation colique
systématique

Antibioprophylaxie

Thromboprophylaxie

Pas de prémédication

Agents anesthésiques à
durée de vie courte

Analgesie péridurale
thoracique ou sélection
des agents antalgiques

Chirurgie mini-invasive

Pas ou peu de drains

Apport limité de solutés

Prévention de
l'hypothermie
(réchauffement
corporel)

Analgesie multimodale

Pas de sonde
nasogastrique

Prévention des nausées et
vomissements

Usage modéré des apports
liquidiens

Retrait précoce des
cathéters

Ré alimentation précoce

Lever précoce

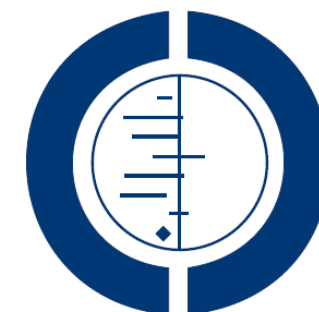
Stimulation du transit
intestinal (motilité)

Evaluation de la
compliance et audit

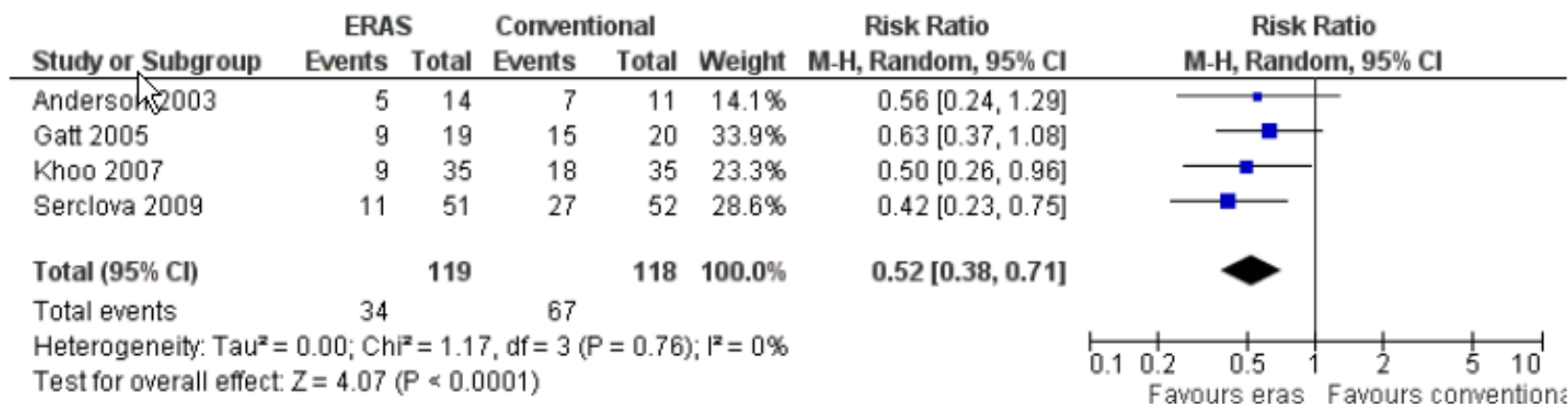
RAAC réduction complications 50%

Fast track surgery versus conventional recovery strategies for colorectal surgery (Review)

Spanjersberg WR, Reurings J, Keus F, van Laarhoven CJHM



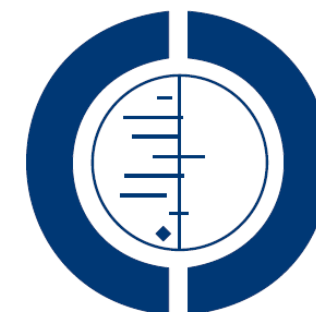
THE COCHRANE
COLLABORATION®



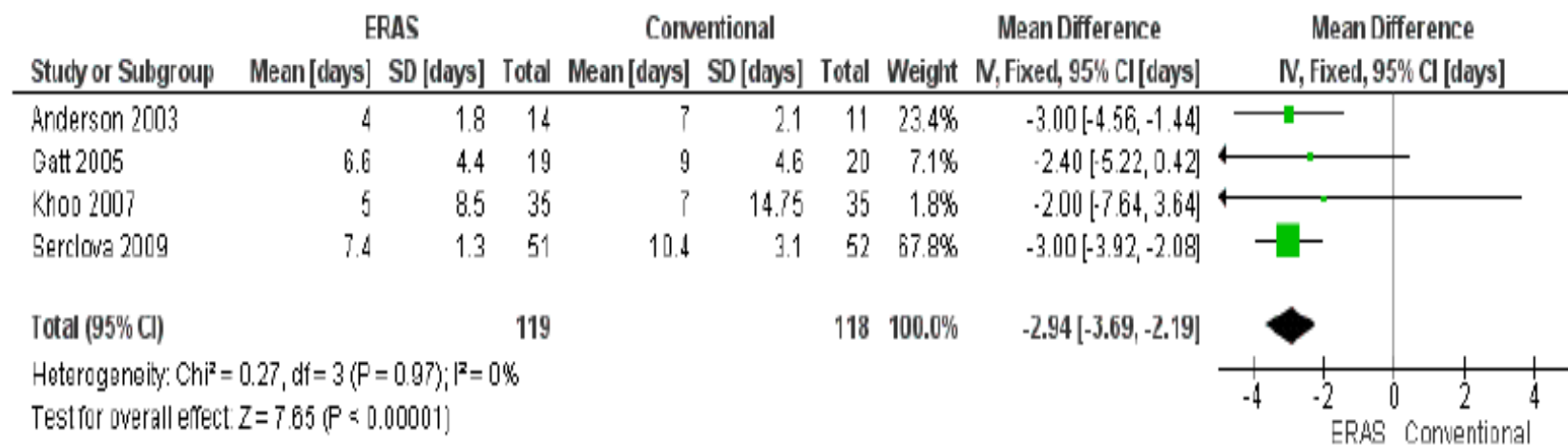
RAAC : diminution DMS

Fast track surgery versus conventional recovery strategies for colorectal surgery (Review)

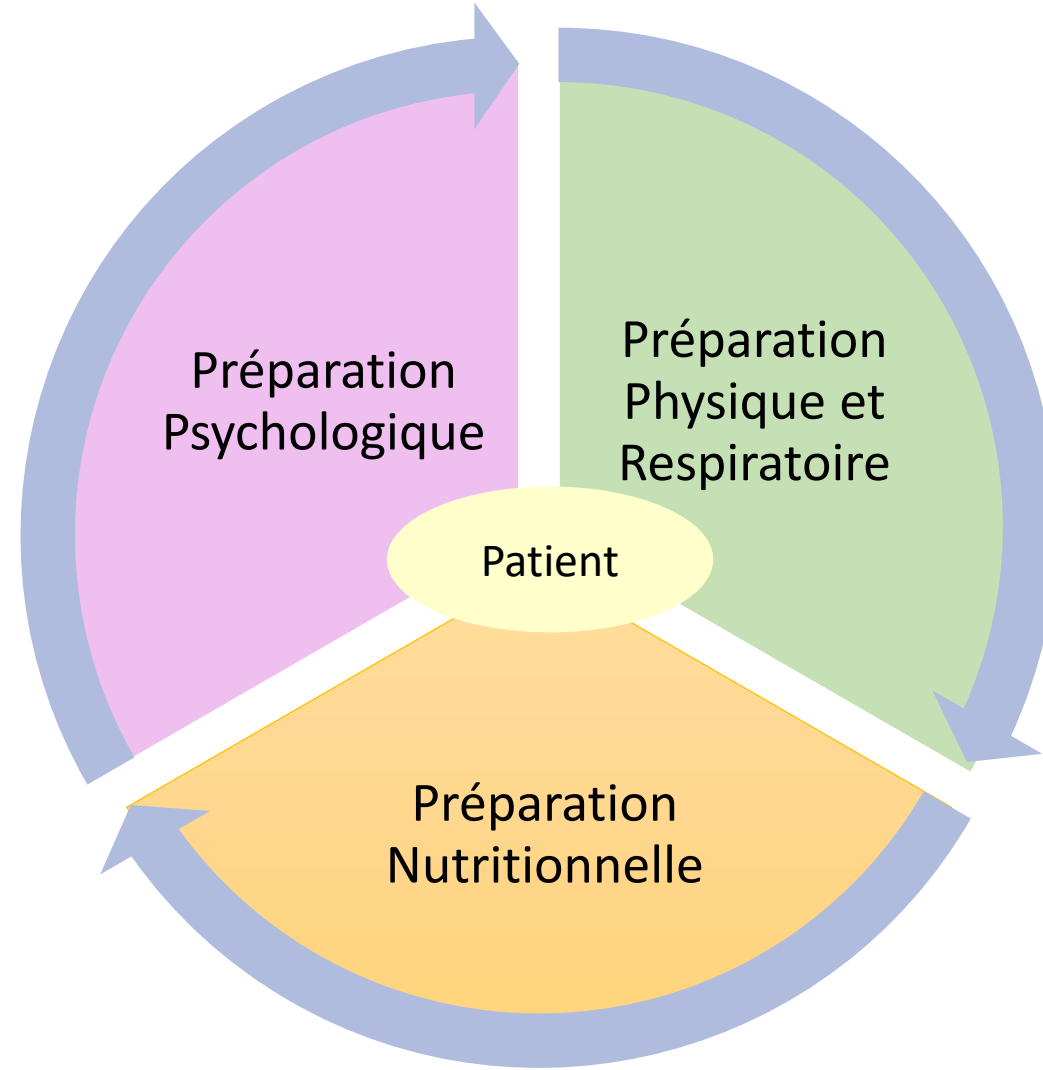
Spanjersberg WR, Reurings J, Keus F, van Laarhoven CJHM



THE COCHRANE
COLLABORATION®



PREHABILITATION



Effect of Multimodal Prehabilitation on Reducing Postoperative Complications and Enhancing Functional Capacity Following Colorectal Cancer Surgery

The PREHAB Randomized Clinical Trial

JAMA Surg. 2023;158(6):572-581.

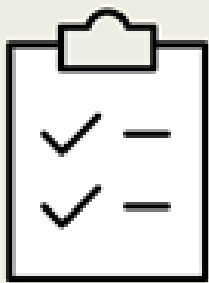
Charlotte Johanna Laura Molenaar, MD; Enrico Maria Minnella, MD, PhD; Miquel Coca-Martinez, MD, MSc; David Wouter Gerard ten Cate, MD; Marta Regis, PhD; Rashami Awasthi, MSc; Graciela Martínez-Palli, MD, PhD; Manuel López-Baamonde, MD; Raquel Sebio-Garcia, MSc, PhD; Carlo Vittorio Feo, MD; Stefanus Johannes van Rooijen, MD, PhD; Jennifer Marijke Janneke Schreinemakers, MD, PhD; Rasmus Dahlin Bojesen, MD, PhD; Ismail Gögenur, MD, PhD; Edwin R. van den Heuvel, MSc, PhD; Francesco Carli, MD, MPhil; Gerrit Dirk Slooter, MD, PhD; for the PREHAB Study Group

INTERVENTION

251 Participants randomized and analyzed

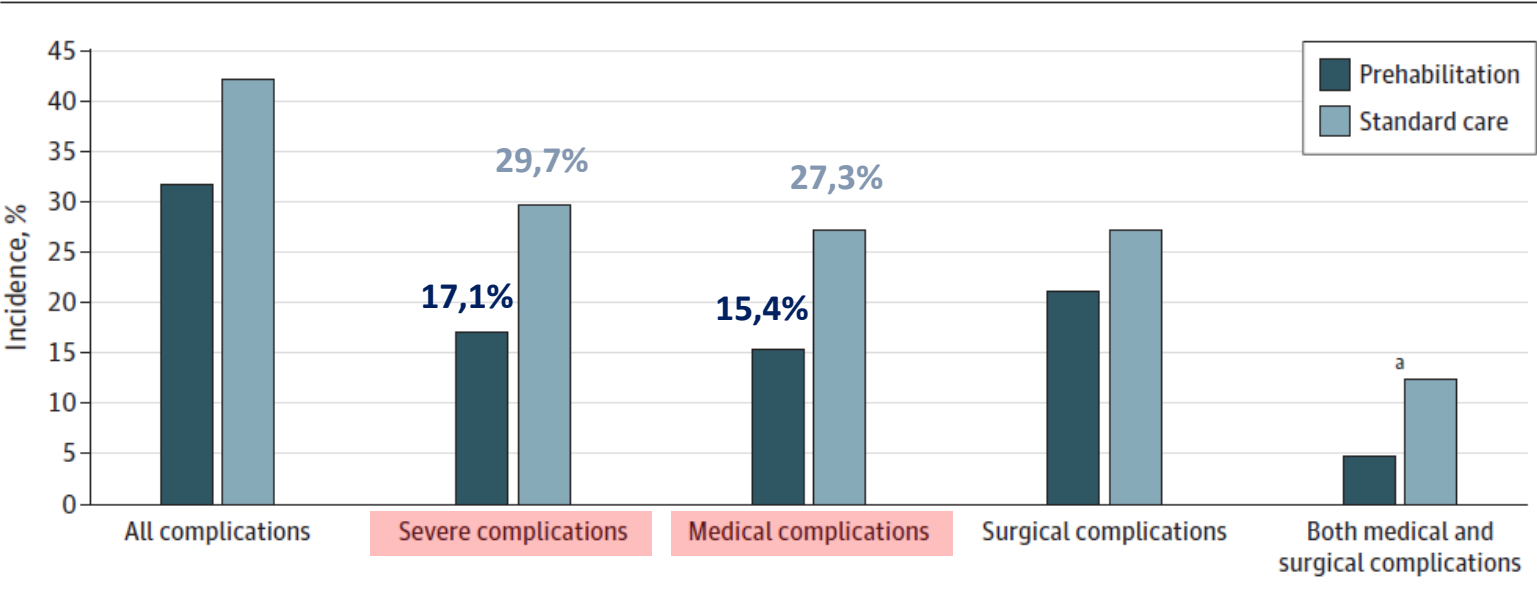


123 Multimodal prehabilitation
4-wk High-intensity supervised exercise and nutritional, mental health, and smoking cessation support



128 Standard care
Perioperative care per local standards

Figure 2. Complications Within 30 Days After Surgery





Parcours patient Chirurgie colorectale Hôpital Lyon-Sud



Débuté en 2012

Comment s'organise-t-il sur l'établissement ?

Patients concernés:

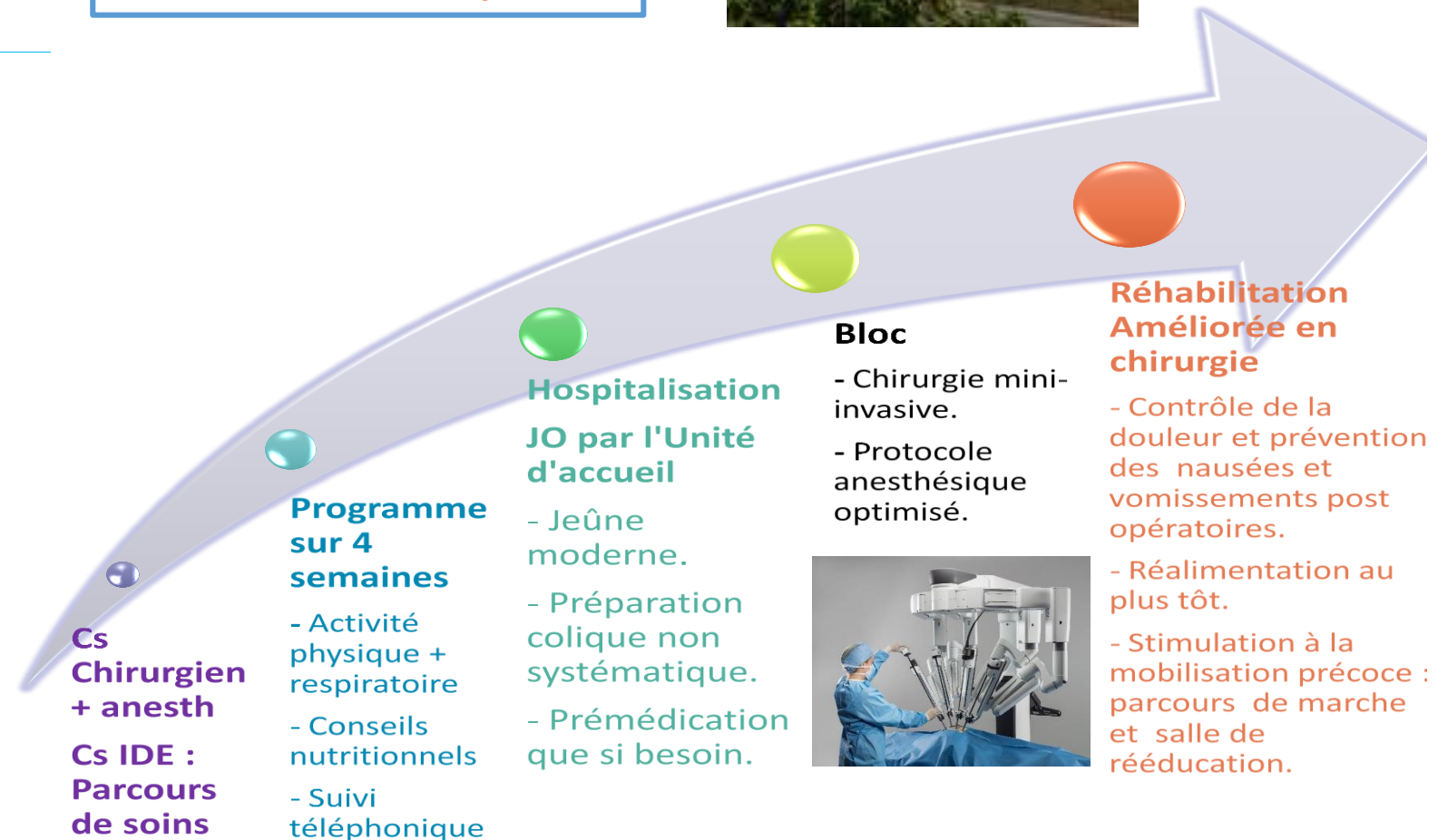
Homme/ Femme candidat à une chirurgie lourde.

- Chirurgie digestive, oncologique
- CHIP, Rectum, Colon, Gastrectomie, cure d'éventration, Hépatectomie ...

Délai entre la consultation préopératoire et la chirurgie
≥ 4 semaines.

Apte à la pratique physique ou sportive

PARCOURS DE SOINS: PRÉHABILITATION/RAC



L'entretien Infirmier = relation de confiance

- ✓ Explication du programme de préhabilitation
- ✓ Remise de documents (plaquettes, livret, ordonnance kiné)
- ✓ Explications du suivi après chirurgie = programme de R.A.C.
- ✓ Mise en relation avec l'EAPA, kiné de ville, prestataire de soins
- ✓ Assure un suivi téléphonique durant 3 à 4 semaines jusqu'à la date du bloc.



LA PRÉHABILITATION AVANT CHIRURGIE DIGESTIVE LOURDE



NOM _____
Prénom _____
Date de naissance _____
Chirurgien référent _____

LA PREHABILITATION AVANT CHIRURGIE DIGESTIVE LOURDE

LIVRET D'ENSEIGNEMENT ET CARNET DE BORD

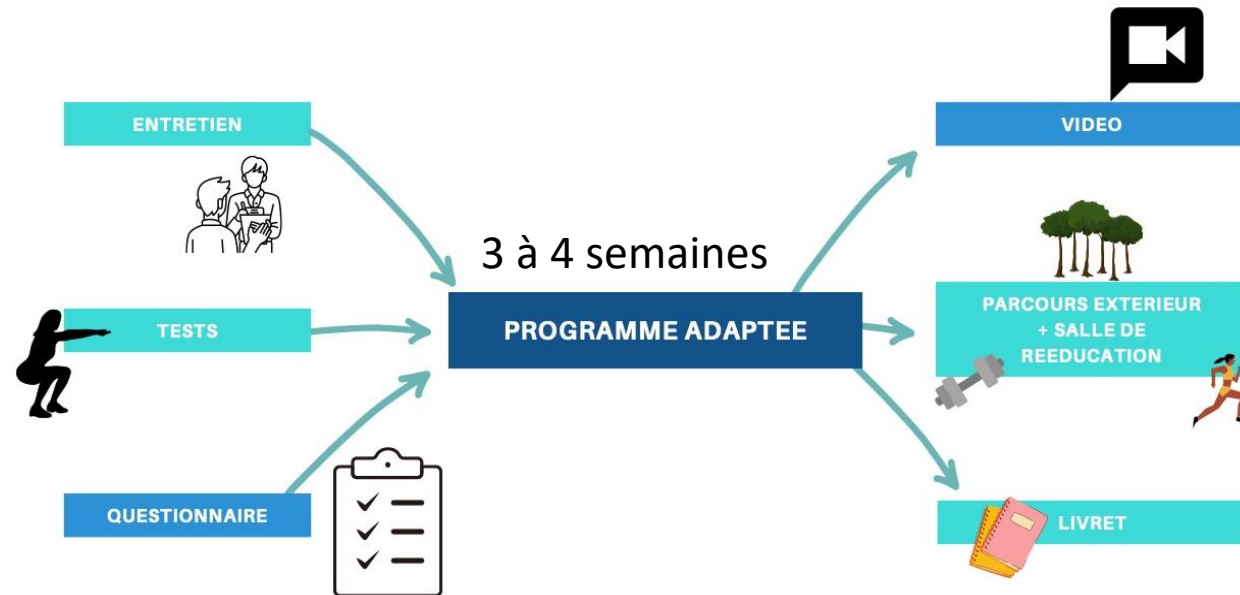
Equipe de chirurgie digestive du centre hospitalier Lyon Sud



La préparation physique avec L'EAPA

OBJECTIFS DU PROGRAMME:

- ✓ Optimiser l'état physique avant la chirurgie.
- ✓ Améliorer les capacités cardio-vasculaires
- ✓ Augmenter la force musculaire
- ✓ Améliorer le temps de récupération



DEROULEMENT DE LA 1ER SEANCE:

- Entretien
- Questionnaire : TEST RICCI GAGNON
- Tests:
 - Test de marche 6min:
 - Test assis-debout
 - Hand Grip
- Evaluation



The image shows two pages of forms used in the program. The left page is a 'Fiche de suivi' (Follow-up sheet) from the 'Service Chirurgie Digestive, Hôpital Lyon Sud'. It includes sections for 'Etat de santé' (Health status), 'Tests d'auto-évaluation d'activité' (Self-assessment of activity tests), and 'Suivi de la fréquence cardiaque' (Heart rate monitoring). The right page is a 'Fiche de suivi' (Follow-up sheet) from the 'Service de rééducation, Hôpital Lyon Sud'. It includes sections for 'Etat de santé' (Health status), 'Tests de marche' (Walking tests), and 'Tests de force' (Strength tests).

Seul ou en groupe

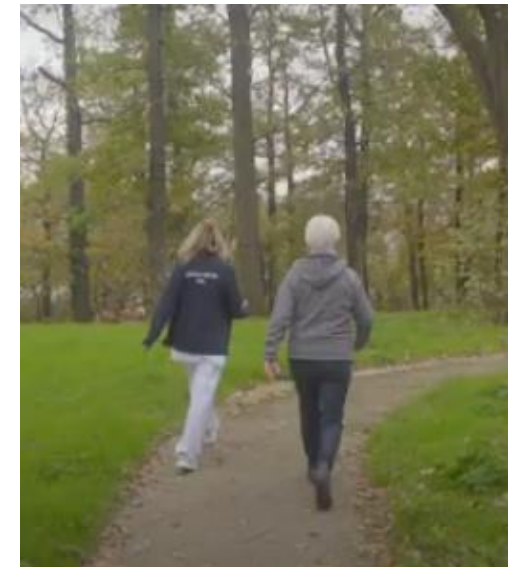
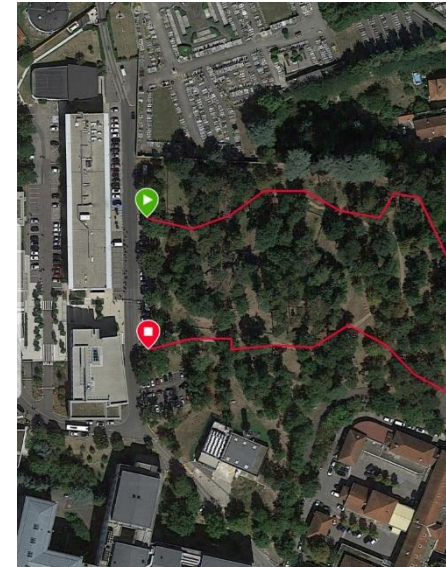
- Tapis de marche
- Vélo
- Elastique
- Escalier



En Extérieur

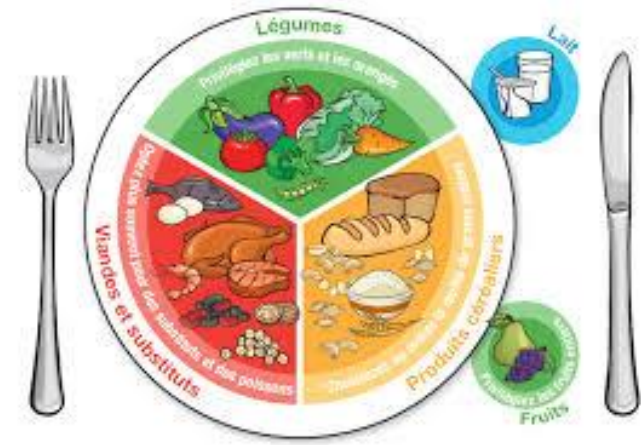


- Parcours Santé
- Parc boisé
- Escaliers avec banc
- Exercices de renforcement
- Equilibre



La diététicienne

Evaluer l'état nutritionnel et dépister la dénutrition.



Détermination de la stratégie nutritionnelle :

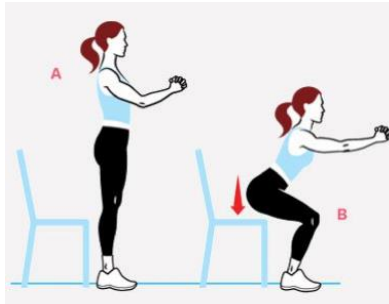
- Conseils diététiques d'enrichissement et de fractionnement des repas
- Personnalisation selon les symptômes ou troubles du patient
- Préconisation de compléments nutritionnels oraux
- Suggestion de l'initiation d'une nutrition entérale voire d'une parentérale si besoin.
- Education post opératoire pour certaines chirurgies (gastrectomie, oesophagectomie, iléostomie).



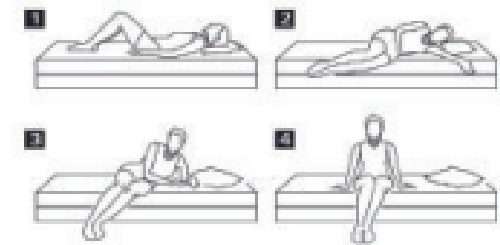
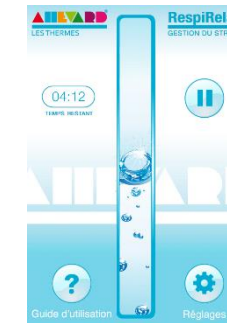
La kinésithérapeute

Evaluer les capacités fonctionnelles des patients / Bilan personnalisé

- **Programme d'exercices physiques** (Brochures, QR code et lien vidéo)
 - Exercices de renforcement musculaires des membres inférieurs et supérieurs
 - Exercices fonctionnels, dont augmentation du périmètre de marche et des escaliers



- **Conseils post-opératoire:**
 - Respiration à visée de détente
 - Apprentissage des transferts / levers-couchers post op ...

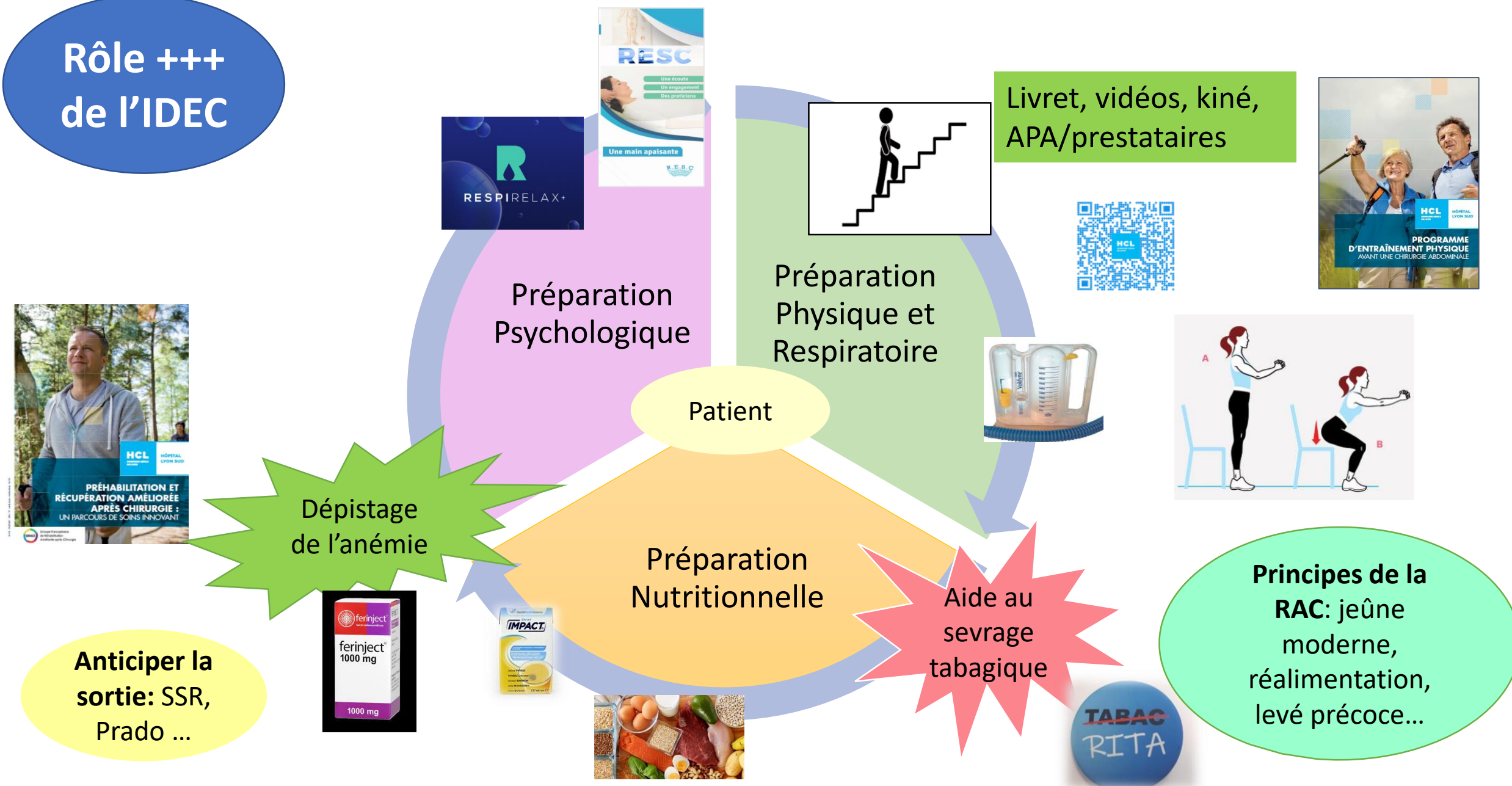


La sortie du lit

- **Programme d'exercice respiratoire**
 - Apprentissage de la spirométrie incitative (Voldyne®, Triflo®)



Rôle +++ de l'IDEC

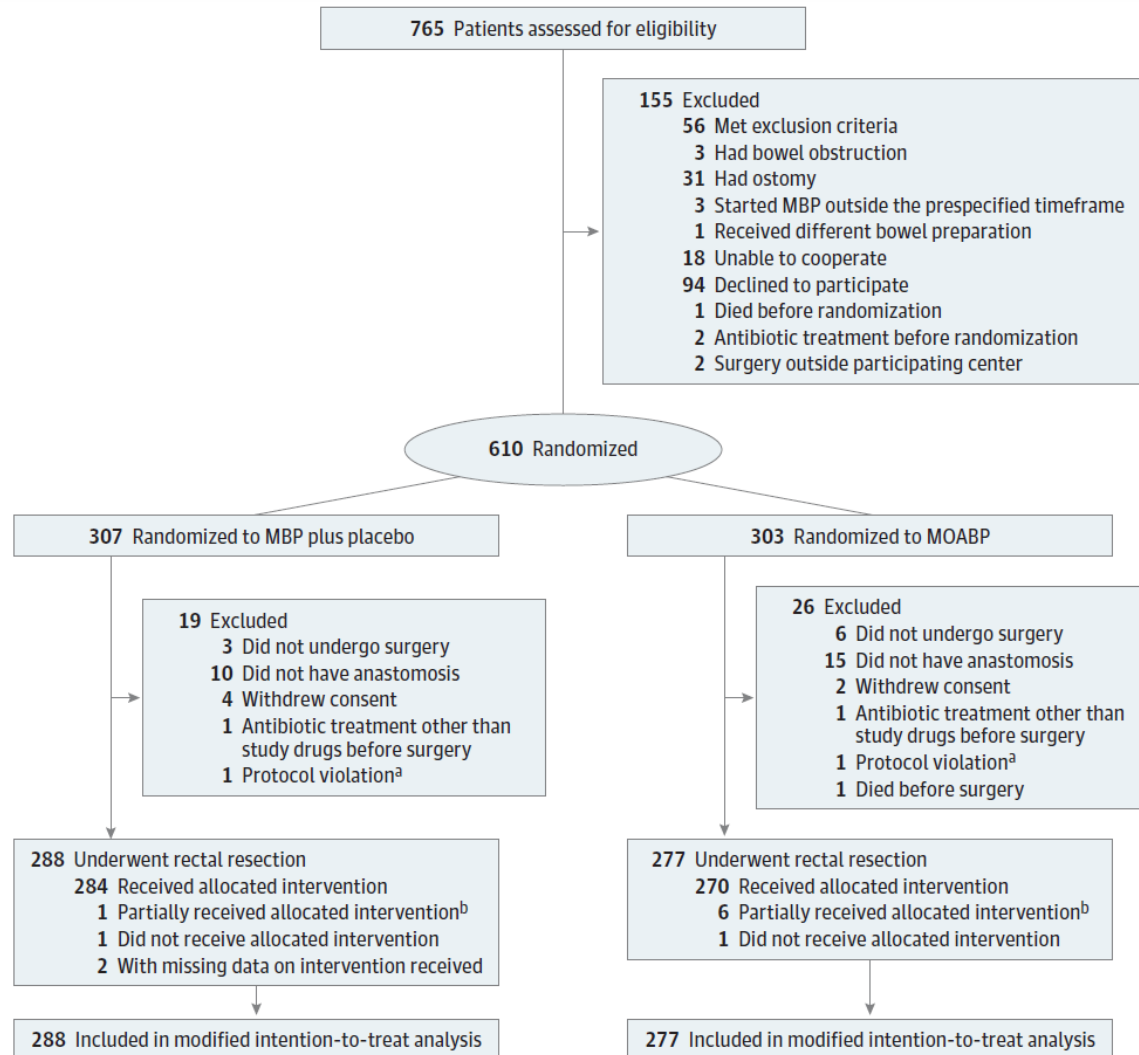


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IN
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Morbidity After Mechanical Bowel Preparation and Oral Antibiotics Prior to Rectal Resection

The MOBILE2 Randomized Clinical Trial

Laura Koskenvuo, MD, PhD; Pipsa Lunkka, MD; Pirita Varpe, MD, PhD; Marja Hyöty, MD, PhD;
Reetta Satokari, PhD; Carola Haapamäki, MD, PhD; Anna Lepistö, MD, PhD; Ville Sallinen, MD, PhD



Morbidity After Mechanical Bowel Preparation and Oral Antibiotics Prior to Rectal Resection

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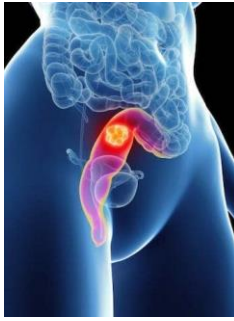
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Table 4. Primary and Secondary Outcomes of Patients in the MOABP and MBP Plus Placebo Groups

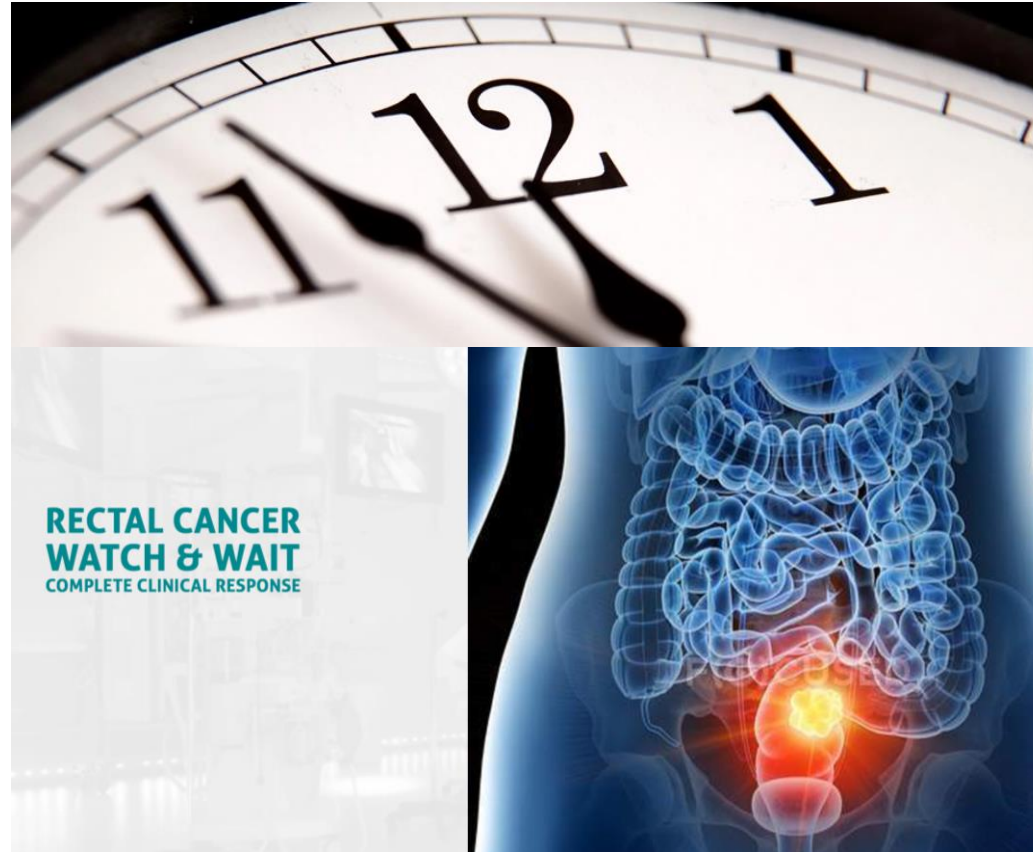
Outcome	No. (%)		Effect size		
	MBP plus placebo (n = 288)	MOABP (n = 277)	OR (95% CI)	Wilcoxon effect size	P value ^a
Comprehensive Complication Index^b					
Mean (SD)	12.3 (15.3)	8.3 (13.9)			
Median (IQR)	8.66 (0-20.92)	0 (0-8.66)	NA	0.146	<.001
Surgical site infection					
	48 (16.7)	23 (8.3)	0.45 (0.27-0.77)	NA	.003
Superficial incisional	5 (1.7)	6 (2.2)	NA	NA	
Deep incisional	0	0	NA	NA	
Organ or space	43 (14.9)	17 (6.1)	NA	NA	
Anastomotic dehiscence^c					
	39 (13.5)	16 (5.8)	0.39 (0.21-0.72)	NA	.002
Grade A	22 (7.6)	5 (1.8)	NA	NA	
Grade B	5 (1.7)	3 (1.1)	NA	NA	
Grade C	12 (4.2)	8 (2.9)	NA	NA	
Length of hospital stay, median (IQR), d ^b	6 (5-8) ^d	6 (5-7) ^e	NA	0.050	.23
Mortality within 90 d after surgery	2 (0.7)	3 (1.1)	1.57 (0.26-9.44)	NA	.68 ^f
No. of patients receiving adjuvant treatment/total No. of patients requiring adjuvant treatment ^g	94/108 (87)	96/110 (87)	0.98 (0.44-2.17)	NA	.96

Conclusions

- Les **complications** après chirurgie du rectum sont **fréquentes**
- Elles impactent la **qualité de vie** des patients et les **résultats oncologiques**
- La chirurgie rectale est source de **séquelles digestives et urogénitales** avec un impact fort sur QOL
- La chirurgie du cancer du rectum est une **chirurgie de spécialiste**
- **Effet centre/volume activité** important
- Intérêt
 - Chirurgie mini-invasive : **ROBOT +++**
 - **PREHAB et RAAC**



Meilleure prévention des complications/séquelles



Conservation rectale