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Pourquoi l'IRM prostatique multiparamétrique est-elle fortement recommandée avant toute biopsie?

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Recommandations pour l'IRM prostatique MP: Uniquement dans le cadre du *staging* local....avant 2014

Diagnosis of PCa - Recommendations		GR
Biopsy and further staging investigations are only indicated if they affect the management of the patient.		C
	Transrectal ultrasound (TRUS)-guided systemic biopsy is the recommended method in most cases of suspected PCa. A minimum of 8 systemic, laterally directed, cores are recommended, with perhaps more cores in larger volume prostates.	B
	Transition zone biopsies are not recommended in the first set of biopsies due to low detection rates.	C
	One set of repeat biopsies is warranted in cases with persistent indication for PCa (abnormal DRE, elevated PSA or histopathological findings suggestive of malignancy at the initial biopsy).	B
	Overall recommendations for further (three or more) sets of biopsies cannot be made; the decision must be made based on an individual patient.	C
Transrectal peri-prostatic injection with a local anaesthetic can be offered to patients as effective analgesia when undergoing prostate biopsies.		A
Staging of PCa - Recommendations		
	Local staging (T-staging) of PCa should be based on MRI. Further information is provided by the number and sites of positive prostate biopsies, the tumour grade, and the level of serum PSA.	C

Recommandations pour l'IRM prostatique MP:

Avant une deuxième série de biopsies entre 2014 et 2018

	LE	GR
When available, mMRI of the prostate can be used to trigger a (targeted) repeat prostate biopsy.	2b	B
	LE	GR
Prostate cancer should be graded according to the ISUP 2005 modified Gleason grading system.	2a	A
The decision to biopsy should be based on PSA testing and DRE.	2b	A
For initial diagnosis, a core biopsy of 10-12 systematic transrectal or transperineal peripheral zone biopsies should be performed under ultrasound imaging guidance.	2a	B
Transrectal prostate needle biopsies should be taken under antibiotic protection.	1b	A
Local anaesthetic by periprostatic infiltration is recommended for prostate needle biopsies.	1a	A
Prostate core biopsies from different prostatic sites should be submitted separately for processing and pathology reporting.	3	A
Processing and reporting of prostatectomy specimens by pathology should follow the guidelines provided by the 2010 ISUP consensus meeting.	3	A

Recommandations pour l'IRM prostatique MP: Avant toute biopsie...depuis 2019

Recommendations in biopsy naïve patients	LE	Strength rating
Perform mpMRI before prostate biopsy.	1a	Weak
When mpMRI is positive (i.e. PI-RADS \geq 3), combine targeted and systematic biopsy.	2a	Strong
When mpMRI is negative (i.e. PI-RADS \leq 2), and clinical suspicion of prostate cancer is low, omit biopsy based on shared decision making with the patient.	2a	Weak

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EAU-EANM-ESTRO-ESUR-ISUP-SIOG-Guidelines-on-Prostate-Cancer-2019

EAU-EANM-ESTRO-ESUR-ISUP-SIOG-Guidelines-on-Prostate-Cancer-2020

IRM prostatique MP en pré biopsie: Plusieurs essais prospectifs

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MRI-Targeted or Standard Biopsy for Prostate-Cancer Diagnosis

V. Kasivisvanathan, A.S. Rannikko, M. Borghi, V. Panebianco, L.A. Mynderse, M.H. Vaarala, A. Briganti, L. Budäus, G. Hellawell, R.G. Hindley, M.J. Roobol, S. Eggener, M. Ghei, A. Villers, F. Bladou, G.M. Villeirs, J. Virdi, S. Boxler, G. Robert, P.B. Singh, W. Venderink, B.A. Hadaschik, A. Ruffion, J.C. Hu, D. Margolis, S. Crouzet, L. Klotz, S.S. Taneja, P. Pinto, I. Gill, C. Allen, F. Giganti, A. Freeman, S. Morris, S. Punwani, N.R. Williams, C. Brewster, J. Deeks, Y. Takwoingi, M. Emberton, and C.M. Moore, for the PRECISION Study Group Collaborators

Articles



Use of prostate systematic and targeted biopsy on the basis of multiparametric MRI in biopsy-naive patients (MRI-FIRST): a prospective, multicentre, paired diagnostic study

Olivier Rouvière, Philippe Puech, Raphaële Renard-Penna, Michel Claudon, Catherine Roy, Florence Mège-Lechevallier, Myriam Decaussin-Petrucci, Marine Dubreuil-Chambarde, Laurent Magaud, Laurent Remontet, Alain Ruffion, Marc Colombel, Sébastien Crouzet, Anne-Marie Schott, Laurent Lemaître, Muriel Rabilloud, Nicolas Grenier, for the MRI-FIRST Investigators*

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European Association of Urology

Platinum Priority – Prostate Cancer – Editor's Choice

Editorial by Derek J. Rosario, Thomas J. Walton and Steven J. Kennish on pp. 579–581 of this issue

Head-to-head Comparison of Transrectal Ultrasound-guided Prostate Biopsy Versus Multiparametric Prostate Resonance Imaging with Subsequent Magnetic Resonance-guided Biopsy in Biopsy-naïve Men with Elevated Prostate-specific Antigen: A Large Prospective Multicenter Clinical Study



Quel schéma biopsique après IRM MP???: Résultats de l'essai randomisé le plus récent

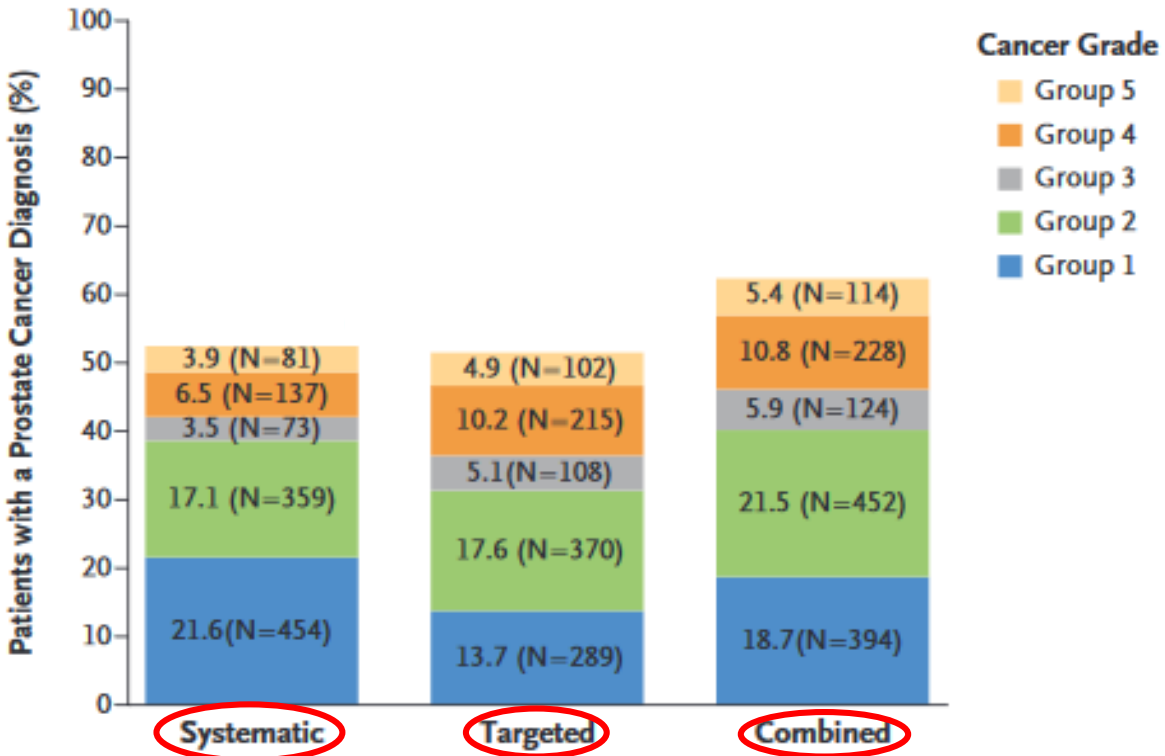
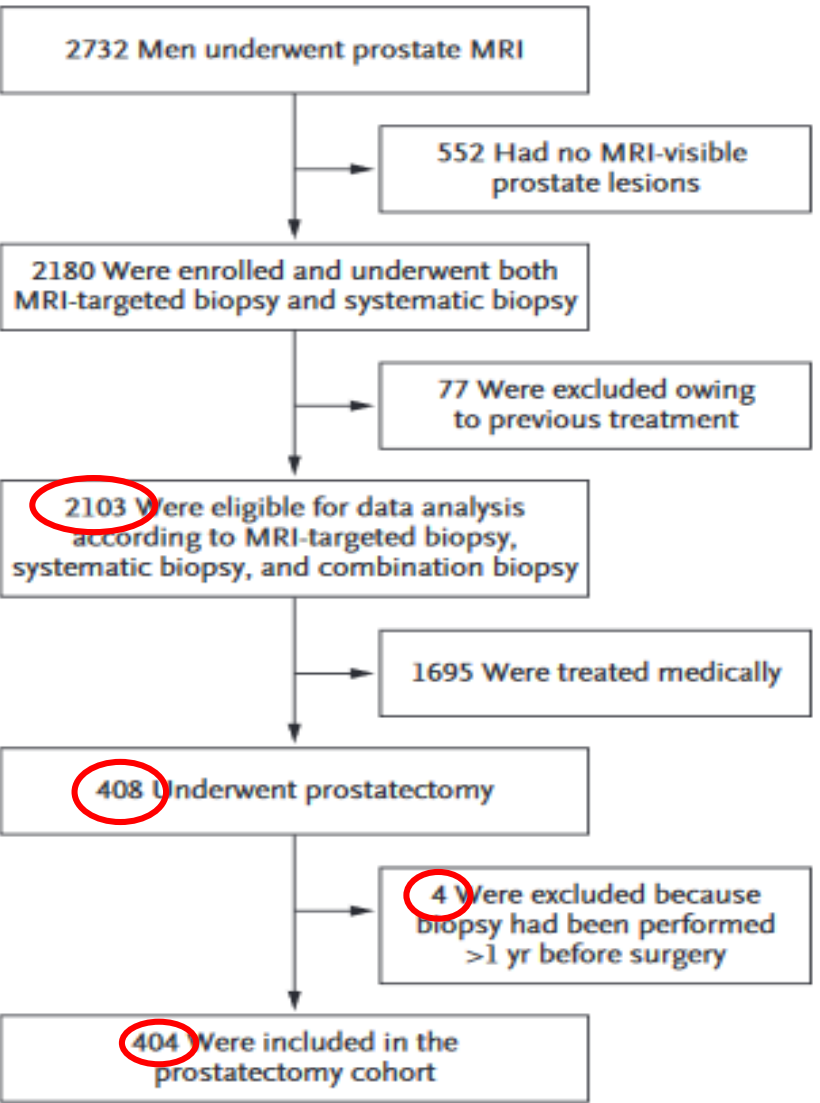
The NEW ENGLAND JOURNAL *of* MEDICINE

ORIGINAL ARTICLE

MRI-Targeted, Systematic, and Combined Biopsy for Prostate Cancer Diagnosis

M. Ahdoot, A.R. Wilbur, S.E. Reese, A.H. Lebastchi, S. Mehralivand, P.T. Gomella,
J. Bloom, S. Gurram, M. Siddiqui, P. Pinsky, H. Parnes, W.M. Linehan,
M. Merino, P.L. Choyke, J.H. Shih, B. Turkbey, B.J. Wood, and P.A. Pinto

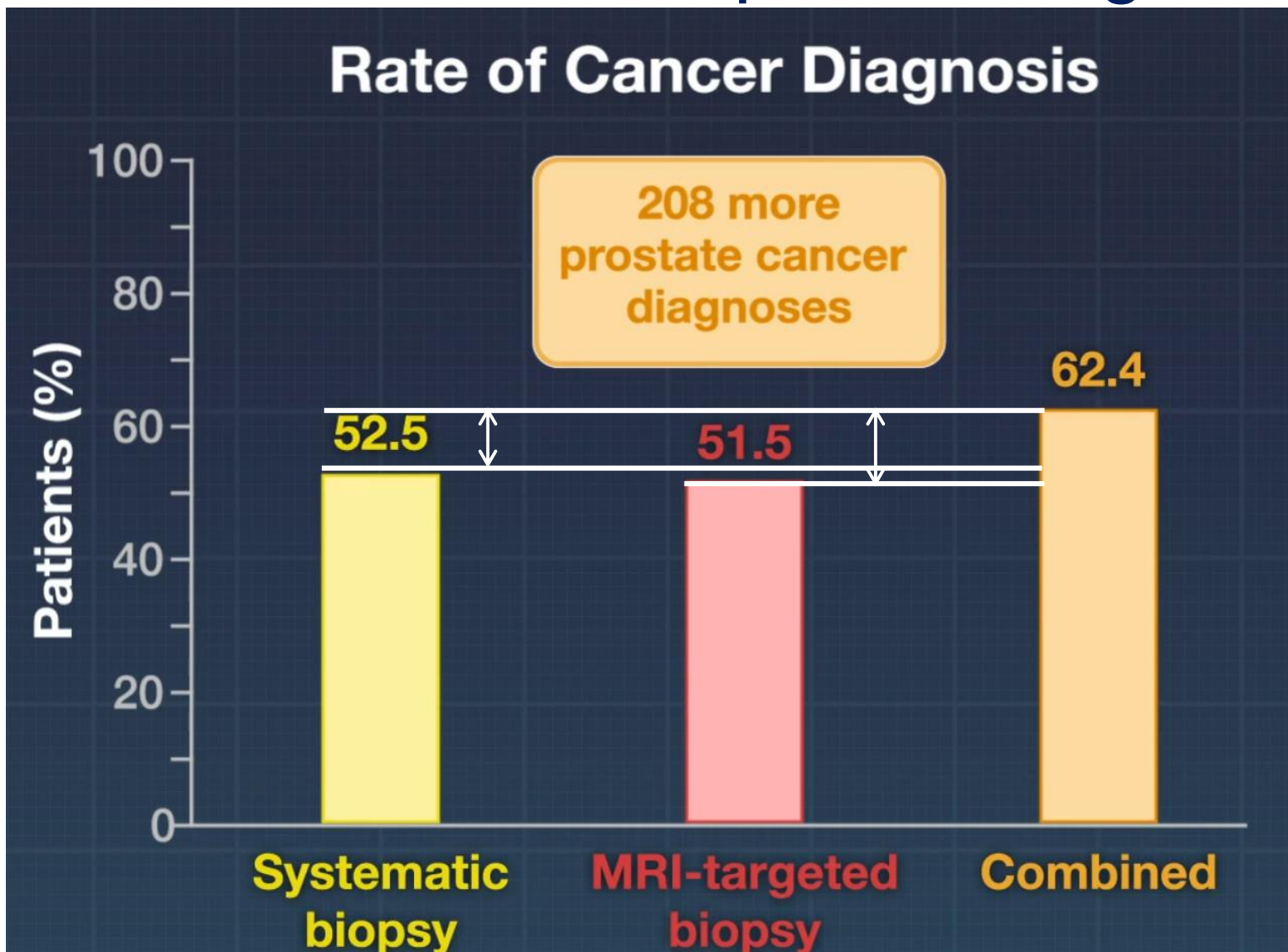
Quel schéma biopsique après IRM MP???: Résultats de l'essai randomisé le plus récent



Percentage of patients (no.)	Systematic	Targeted	Combined
Any upgrading by addition of biopsy method	15.7 (330)	21.8 (458)	—
Additional grade group ≥3 cancer diagnosis by biopsy method	1.9 (41)	8.3 (175)	—
Additional grade group ≥2 cancer diagnosis by biopsy method	5.8 (123)	12.7 (268)	—
New grade group 1 cancer diagnosis by biopsy method	7.8 (163)	3.5 (74)	5.0 (105)

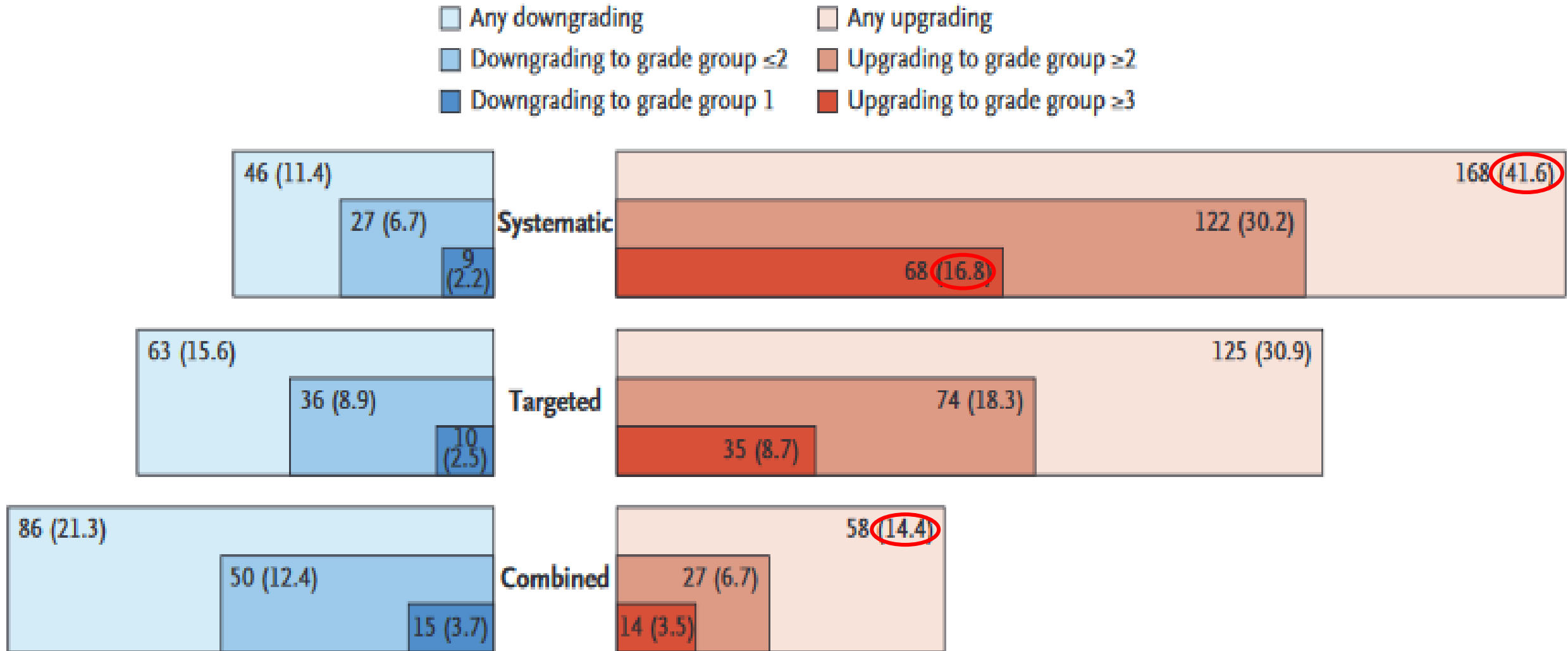
Approche combinée:

Meilleure détection des CaP cliniquement significatifs



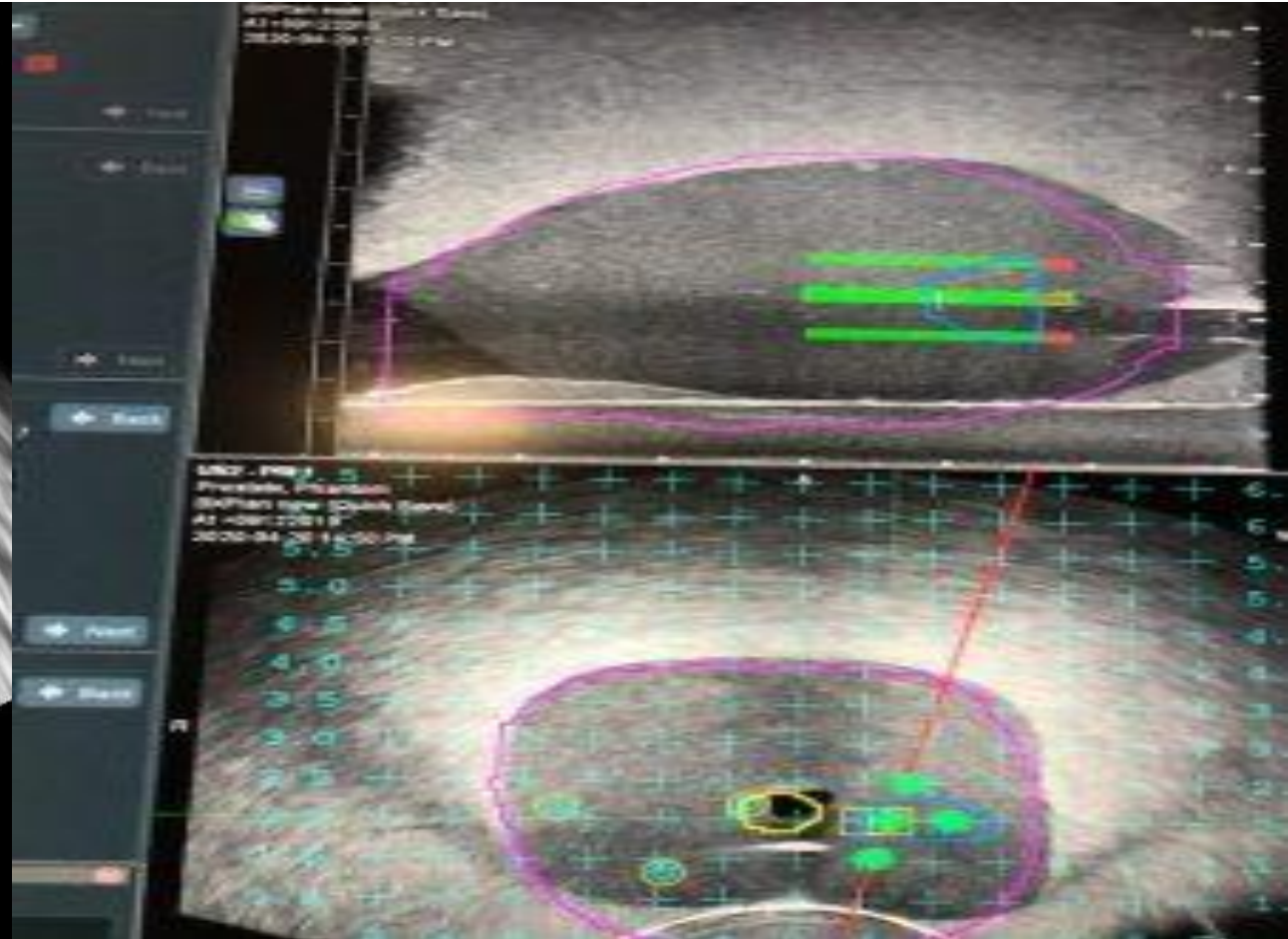
Ahdoot M et al. MRI-targeted, systematic, and combined biopsy for prostate cancer diagnosis. *N Engl J Med*

Approche combinée: Meilleur *grading* selon l'ISUP



Quelle modalité de biopsie ciblée?

3 principales méthodes de cibler une lésion prostatique



Quelle modalité de biopsie ciblée?

3 principales méthodes de cibler une lésion prostatique



Fusion cognitive, fusion d'images ou biopsies "IN BORE"? Que choisir???





Prostate Cancer and Prostatic Diseases

www.nature.com/pcan

REVIEW ARTICLE OPEN

 Check for updates

Diagnostic accuracy of magnetic resonance imaging targeted biopsy techniques compared to transrectal ultrasound guided biopsy of the prostate: a systematic review and meta-analysis

E. J. Bass ^{1,2,7}✉, A. Pantovic^{3,7}, M. J. Connor ^{1,2}, S. Loeb ⁴, A. R. Rastinehad⁵, M. Winkler ^{1,2}, Rhian Gabe ⁶ and H. U. Ahmed ^{1,2}



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Fusion cognitive, fusion d'images ou biopsies "IN BORE"? Résultats d'une méta-analyse

Which MRI-GB technique performed best at detecting csPCa and avoiding detection of insignificant PCa? We observed no statistically significant differences between the three MRI-GB techniques in detecting csPCa ($p = 0.55$) with IB-TB showing a pooled CDR of 0.87 [95% CI 0.81–0.93], COG-TB 0.81 [95% CI 0.69–1.03] and FUS-TB 0.81 [95% CI 0.73–0.91].

Intérêt des biopsies “IN BORE”?

Une place en cas de deuxième série de biopsies



UROLOGIC ONCOLOGY

Urologic Oncology: Seminars and Original Investigations 39 (2021) 297.e9–297.e16

Clinical-Prostate cancer

The utility of in-bore multiparametric magnetic resonance-guided biopsy in men with negative multiparametric magnetic resonance-ultrasound software-based fusion targeted biopsy

Andry Perrin, M.B.B.S.^{a,*}, Wulphert Venderink, M.D.^b, Michael A. Patak, M.D., P.D.^c, Claudius Möckel, M.D.^d, Jean-Luc Fehr, M.D.^d, Patrice Jichlinski, M.D.^a, Beat Porcellini, M.D.^c, Ilaria Lucca, M.D.^a, Jurgen Futterer, M.D., Ph.D.^b, Massimo Valerio, M.D., Ph.D., P.D.^a

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- Pas de TRT antérieur,
- IRM avec lésions PIRADS ≥ 3
- Une première série de Bx par fusion d'images qui n'a pas retrouvé de CaP

- Biopsie IRM-guidée “in bore”
- Délais médian: 3 mois
- Nombre de carottes prélevées: 2-3 par lésion

Un CaP a été détecté
chez **14/58** patients soit
25% des patients

Intérêt des biopsies “IN BORE”?

Moins de carottes???

CO-175

Biopsies prostatiques directement guidées (*in-bore*) par l'imagerie par résonance magnétique : notre expérience chez 111 patients



M. Zanaty, P. Sarkis*, G. Kamel, J. Sarkis, E. Nemer, N. Mahfoud, N. Ayoub, Z. Kassarian, G. Nawfal, J. Abi Chebel
Hôpital Saint-Joseph, Beyrouth, Liban

Méthodes Il s'agit d'une revue rétrospective des dossiers de 111 patients ayant subi des biopsies ciblées et guidées directement par l'IRM (*in-bore*) dans un hôpital universitaire libanais, pour les lésions de score 3 de PIRADS (12 patients), score 4 (63 patients) ou score 5 (36 patients) détectées par l'IRM multiparamétrique (IRMmp). La procédure est réalisée en utilisant un kit spécial « dyna interventional device » et une aiguille « trucut » 16 g. Des biopsies randomisées (BR) concomitantes sont pratiquées chez 54 patients.

score 3 de PIRADS, 23 ayant un score 4 et 36 avec score 5. La valeur prédictive positive (VPP) des biopsies des lésions de score 3, 4 et 5 de PIRADS est de 16,6 %, 36,5 % et 100 % respectivement. L'ajout

Intérêt des biopsies “IN BORE”?

Moins de carottes...oui mais dans quel intérêt???

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journal homepage: euoncology.europeanurology.com



European Association of Urology



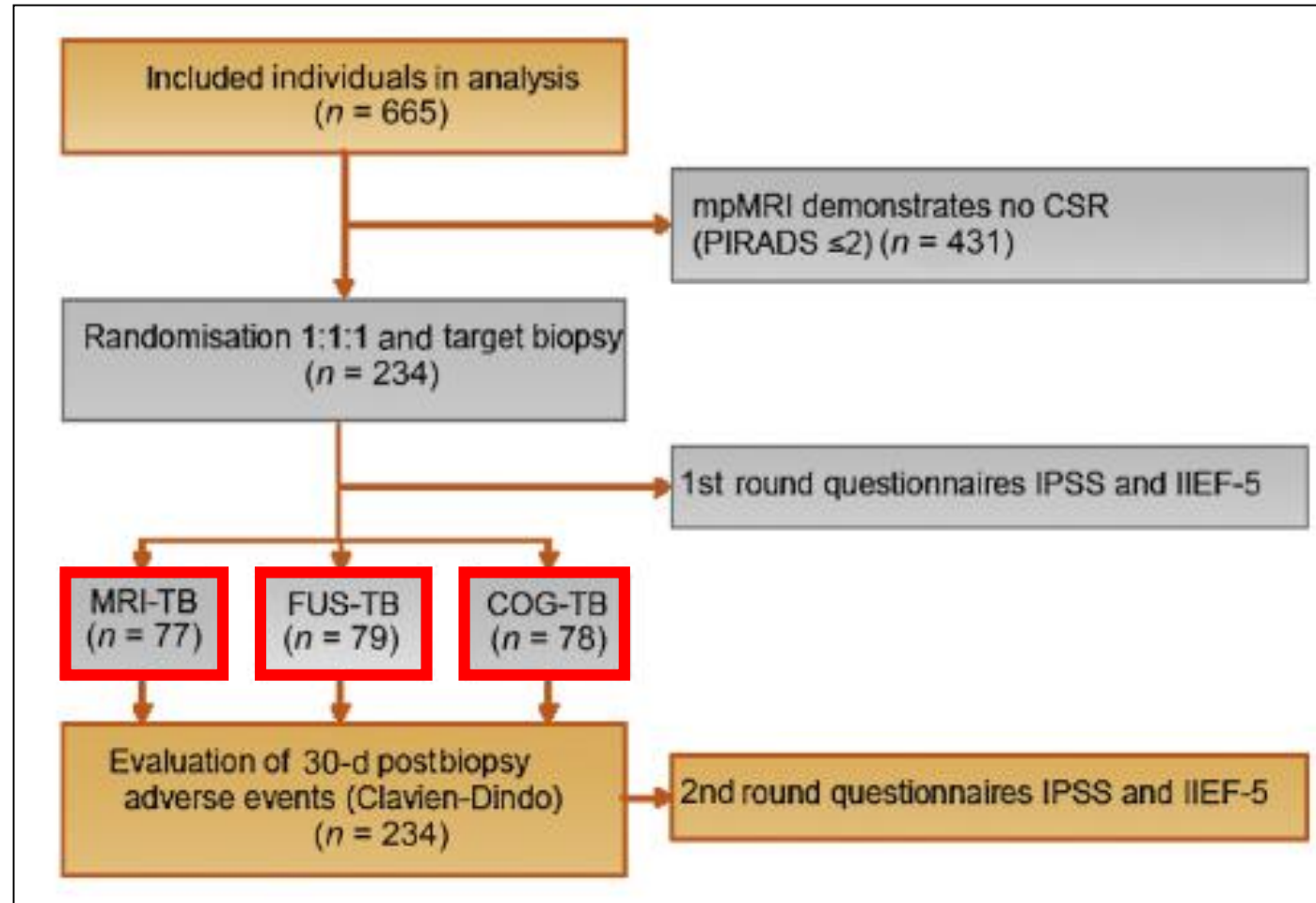
Complications and Adverse Events of Three Magnetic Resonance Imaging–based Target Biopsy Techniques in the Diagnosis of Prostate Cancer Among Men with Prior Negative Biopsies: Results from the FUTURE Trial, a Multicentre Randomised Controlled Trial

Olivier Wegelin^{a,}, Leonie Exterkate^b, Marloes van der Leest^c, Johannes C. Kelder^d, J.L.H. Ruud Bosch^e, Jelle O. Barentsz^c, Diederik M. Somford^{b,†}, Harm H.E. van Melick^{a,†}*

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Intérêt des biopsies "IN BORE"?

Moins de carottes...oui mais dans quel intérêt???



Intérêt des biopsies "IN BORE"?

Moins de carottes....oui mais dans quel intérêt???

Procedural data	Transrectal MRI-TB (n = 77)	Transperineal FUS-TB (n = 79)	Transrectal COG-TB (n = 78)	p value
Biopsy cores				
Median TB cores, n (IQR)	2 (2-3)	4 (3-5)	3 (3-4)	<0.05
Median SB cores, n (IOR)	-	10 (8-12)	10 (8-12)	0.55
Median total cores, n (IQR)	2 (2-3)	14 (13-16)	13 (12-15)	<0.001

COG-TB = cognitive registration TRUS targeted biopsy; IQR = interquartile range; MRI = magnetic resonance imaging; MRI-TB = in-bore MRI targeted biopsy; FUS-TB = MRI-TRUS fusion targeted biopsy; SB = systematic biopsy; TB = targeted biopsy; TRUS = transrectal ultrasound.

	Overall (n = 234)	Transrectal MRI-TB (n = 77)	Transperineal FUS-TB (n = 79)	Transrectal COG-TB (n = 78)	p value
Clavien-Dindo grade					<0.001
No adverse events	30.3 (71)	47.4 (36)	29.1 (23)	15.4 (12)	
Grade 1	63.2 (148)	50.0 (38)	65.8 (52)	74.4 (58)	
Grade 2	6.0 (14)	2.6 (2)	5.1 (4)	10.3 (8)	
Grades 3, 4, 5	-	-	-	-	
Haematuria	53.4 (125)	35.5 (27)	50.6 (40)	74.4 (58)	<0.001
Haemospermia	37.2 (87)	26.3 (20)	35.4 (28)	50.0 (39)	<0.01
Rectal bleeding	3.4 (8)	2.6 (2)	2.5 (2)	5.1 (4)	0.59
UTI	3.4 (8)	2.6 (2)	1.3 (1)	6.4 (5)	0.21
Fever	3 (7)	1.3 (1)	2.5 (2)	5.1 (4)	0.46
Urinary retention	3 (7)	-	3.8 (3)	5.1 (4)	0.15
Haematoma	1.3 (3)	-	3.8 (3)	-	0.29
Other					0.56
Lower back pain	0.9 (2)	1.3 (1)	1.3 (1)	-	
Atrial fibrillation	0.4 (1)	-	1.3 (1)	-	

Wegelin O, et al. *FUTURE Trial, a Multicentre RCT. Eur Urol Oncol (2019)*



*Take
home message

- IRM MP pré-biopsie fortement recommandée,
- Si lésion PI-RADS \geq 3 faire biopsie combinée,
- L'approche combinée offre:
 - Une meilleure détection des CaPcs,
 - Un meilleur *grading* selon l'ISUP.
- Fusion d'image, fusion cognitive ou "*in-bore*" avec des résultats comparables.

Biopsies "in-bore": excellente alternative

- Meilleure détection dans les 2^{èmes} séries de biopsie
- Si PI-RADS5, biopsies ciblées uniquement:
 - Courte durée => meilleur confort
 - Moins de complications



**Take
home message*

MERCI POUR VOTRE ATTENTION

