

# Valutazione della Progressione

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### **Approccio alla Valutazione della Progressione:**

- Imaging: TAC, RM, PET (focale, generalizzata)
- Clinica
- Biopsia tissutale

### **Trattamento:**

Progressione focale

Progressione generalizzata



## New response evaluation criteria in solid tumours: Revised RECIST guideline (version 1.1)

*E.A. Eisenhauer<sup>a,\*</sup>, P. Therasse<sup>b</sup>, J. Bogaerts<sup>c</sup>, L.H. Schwartz<sup>d</sup>, D. Sargent<sup>e</sup>, R. Ford<sup>f</sup>,  
J. Dancey<sup>g</sup>, S. Arbuck<sup>h</sup>, S. Gwyther<sup>i</sup>, M. Mooney<sup>g</sup>, L. Rubinstein<sup>g</sup>, L. Shankar<sup>g</sup>, L. Dodd<sup>g</sup>,  
R. Kaplan<sup>j</sup>, D. Lacombe<sup>c</sup>, J. Verweij<sup>k</sup>*

**Table 1** Summary of major changes in RECIST 1.1 compared with RECIST 1.0

RECIST guideline	RECIST 1.1	RECIST 1.0
No. of target lesions	Up to 2 per organ; up to 5 in total	Up to 5 per organ; up to 10 in total
Assessment of LNs	Short-axis measurements should be used and recorded; $\geq 15$ mm, target lesions; $\geq 10$ mm but $< 15$ mm, non-target lesions: $< 10$ mm.non-pathological	No clear guideline provided
Clarification of disease progression	20% increase in the sum of target lesions and 5-mm absolute increase are required	20% increase in the sum of target lesions (no minimum absolute size increase) is required
FDG-PET scan	Included only in the detection of new lesions	Not included

RECIST 1.0, Response Evaluation Criteria in Solid Tumors guideline version 1.0; RECIST 1.1, Response Evaluation Criteria in Solid Tumors guideline version 1.1; LNs, lymph nodes; FDG, fluorodeoxyglucose; PET, positron emission tomography.

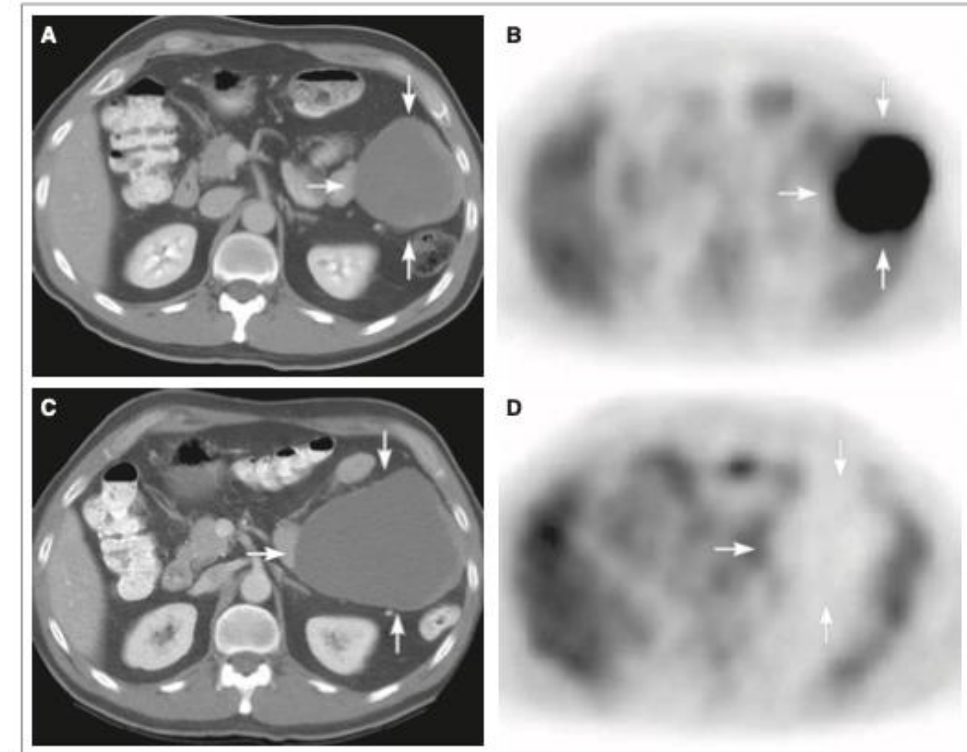
## Correlation of Computed Tomography and Positron Emission Tomography in Patients With Metastatic Gastrointestinal Stromal Tumor Treated at a Single Institution With Imatinib Mesylate: Proposal of New Computed Tomography Response Criteria

Haesun Choi, Chusrip Charusangavej, Silvana C. Faria, Homer A. Macapinlac, Michael A. Burgess, Shreyaskumar R. Patel, Lei L. Chen, Donald A. Podoloff, and Robert S. Benjamin

## Criteri di risposta nei tumori solidi (CHOI)

Table 3. Modified CT Response Evaluation Criteria	
Response	Definition
CR	Disappearance of all lesions No new lesions
PR	A decrease in size* of $\geq 10\%$ or a decrease in tumor density (HU) $\geq 15\%$ on CT No new lesions No obvious progression of nonmeasurable disease
SD	Does not meet the criteria for CR, PR, or PD No symptomatic deterioration attributed to tumor progression
PD	An increase in tumor size of $\geq 10\%$ and does not meet criteria of PR by tumor density (HU) on CT New lesions New intratumoral nodules or increase in the size of the existing intratumoral nodules

Abbreviations: CR, complete response; PR, partial response; HU, Hounsfield unit; CT, computed tomography; SD, stable disease; PD, progression of disease; RECIST, Response Evaluation Criteria in Solid Tumors.  
\*The sum of longest diameters of target lesions as defined in RECIST.<sup>10</sup>



**Fig 5.** A 51-year-old male with primary gastrointestinal stromal tumors of colon and recurrent peritoneal metastases. Pretreatment computed tomography (CT) scan shows (A) a relatively low-density peritoneal mass (42 Hounsfield units [HU]) (—) corresponding to (B) a lesion with markedly increased glucose uptake (—) on positron emission tomography using [<sup>18</sup>F]fluorodeoxyglucose (FDG-PET). At 2 months after treatment, (C) the mass (—) has become larger, however, the CT density has decreased (30 HU), (D) with no appreciable glucose uptake (—) on FDG-PET, corresponding to initial improvement. [Reprinted with permission.<sup>11</sup>]

# Early functional evaluation

$^{18}\text{F}$ FDG-Positron emission tomography for the early prediction of response in advanced soft tissue sarcoma treated with imatinib mesylate (Glivec<sup>®</sup>)

S. Stroobants<sup>a,\*</sup>, J. Goeminne<sup>b</sup>, M. Seegers<sup>b</sup>, S. Dimitrijevic<sup>c</sup>, P. Dupont<sup>a</sup>, J. Nuyts<sup>a</sup>, M. Martens<sup>b</sup>, B. van den Borne<sup>b</sup>, P. Cole<sup>c</sup>, R. Sciot<sup>d</sup>, H. Dumez<sup>b</sup>, S. Silberman<sup>c</sup>, L. Mortelmans<sup>a</sup>, A. van Oosterom<sup>b</sup>

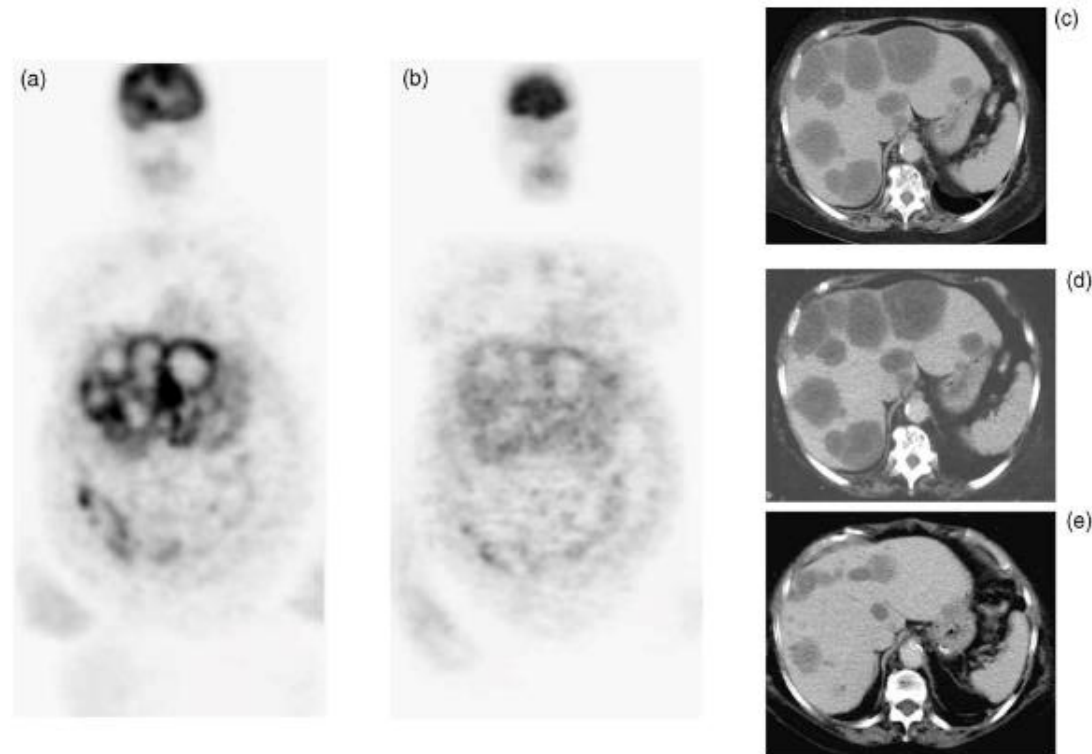
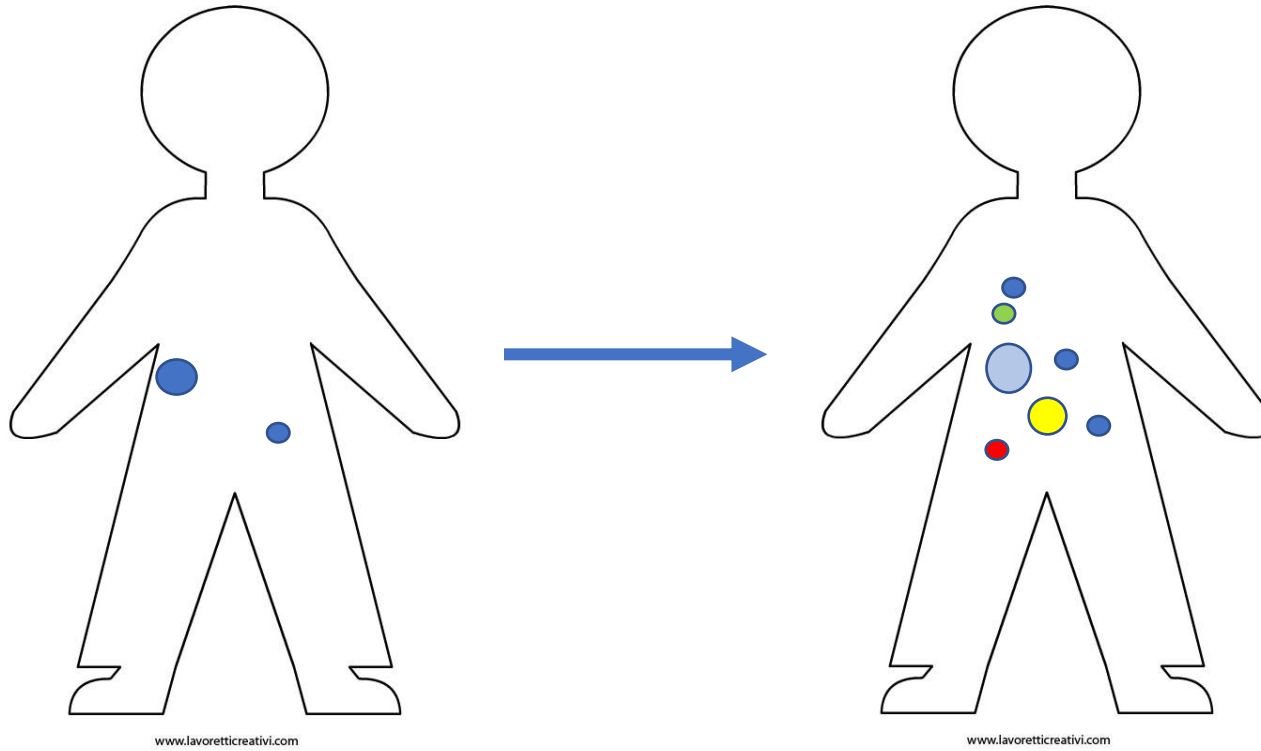


Fig. 3. GIST patient with multiple liver and peritoneal metastases prior to the start of treatment on positron emission tomography (PET) (a) and computerised tomography (CT) (c). A complete remission was achieved on PET 8 days after the start of imatinib treatment (b). On CT at 4 weeks, no major volume changes were observed (d). Only after 24 weeks of treatment (e) was an objective tumour response observed on CT.

# Tipologia della Progressione lesionale

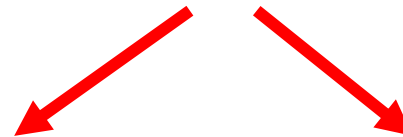
**Imaging**



**Clinica**

symptomatic

asymptomatic



# Heterogeneity inter-lesions and intra-lesions

Summary of secondary imatinib resistant *KIT* mutations evaluated by DHPLC and AS-PCR

Patient no.	Treatment	Location	Primary <i>KIT</i> mutations	Secondary <i>KIT</i> mutation frequencies			
				DHPLC	AS-PCR <sup>+</sup>		AS-PCR <sup>+</sup>
					~15%	>5%	
1	IM	Serosal nodule (1)	Exon 9	NMF	NMF	NMF	NMF
2	IM, SU	Serosal nodule right lower quadrant	Exon 9	NMF	NMF	NMF	NMF
		Omental nodule	Exon 9	NMF	NMF	NMF	V654A
		Periumbilical tumour	Exon 9	Exon 17	N822Y	NMF	D820G
		Serosal nodule right upper quadrant (1)	Exon 9	Exon 17	N822K	N822K (T → G)	V654A
		Serosal nodule right upper quadrant (2)	Exon 9	Exon 17	N822K	N822K (T → G)	NMF
3	IM, SU	Stomach (1)	Exon 11	Exon 17	D816H	NMF	NMF
4	IM	Liver metastasis	Exon 11	Exon 18	A829P	NMF	NMF
		Stomach (1)	Exon 11	Exon 13	V654A	V654A	NMF
5	IM, SU	Liver metastasis	Exon 11	Exon 13	V654A	V654A	D820G
		Mesenteric nodule (1)	Exon 11	Exon 17	N822Y	NMF	N822K (T → A)
		Mesenteric nodule (2)	Exon 11	Exon 17	N822Y	NMF	N822K (T → G)
		Nodule attached to gallbladder	Exon 11	Exon 17	D820G	D820G	NMF
6	IM	Intra-abdominal 1	Exon 11	Exon 13	V654A	V654A	NMF
		Intra-abdominal 2	Exon 11	Exon 13	V654A	V654A	NMF
7	IM, SU	Stomach	Exon 11	NMF	NMF	NMF	NMF
		Liver metastasis	Exon 11	NMF	NMF	NMF	NMF
		Serosal nodule	Exon 11	NMF	NMF	NMF	NMF
8	IM	Abdominal tumour (1)	Exon 11	NMF	NMF	NMF	NMF
		Abdominal tumour (2)	Exon 11	Exon 17	D820Y	NMF	NMF
		Abdominal tumour (3)	Exon 11	Exon 17	D820Y	NMF	NMF
9	IM, SU	Mesenteric nodule 1	Exon 11	Exon 13	V654A	V654A	NMF
		Skin metastasis	Exon 11	Exon 13	V654A	V654A	NMF



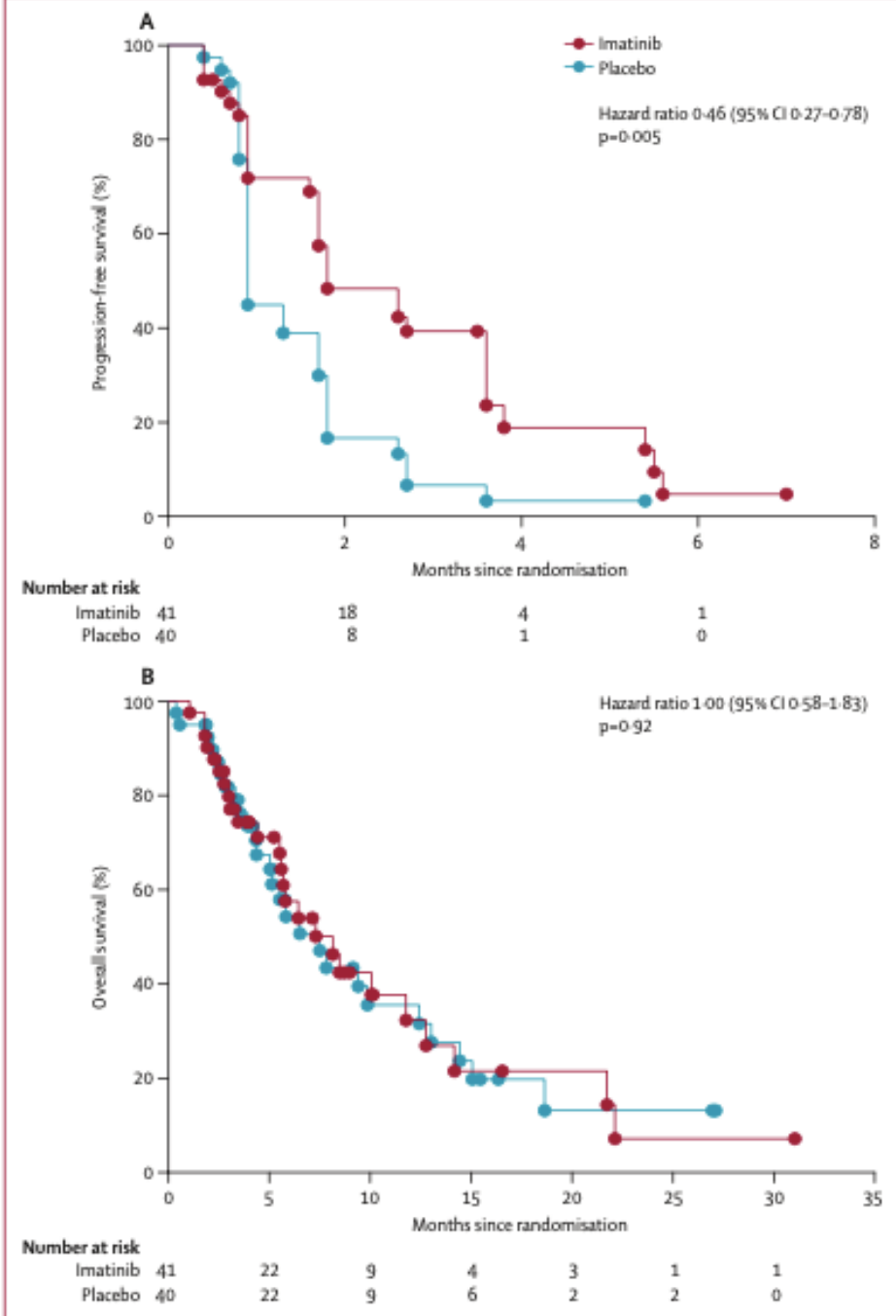
Exon 17  
mutation

Exon 11  
mutation

GIST patient after treatment with Imatinib 400 mg



# TKI for life



## Resumption of imatinib to control metastatic or unresectable gastrointestinal stromal tumours after failure of imatinib and sunitinib (RIGHT): a randomised, placebo-controlled, phase 3 trial



Yoon-Koo Kang, Min-Hee Ryu, Changhoon Yoo, Baek-Yeol Ryoo, Hyun Jin Kim, Jong Jin Lee, Byung-Ho Nam, Nikhil Ramaiya, Jyothi Jagannathan, George D Demetri

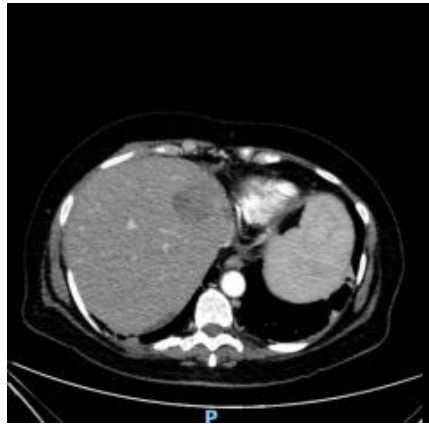
Figure 2: Progression-free survival (A) and overall survival (B)



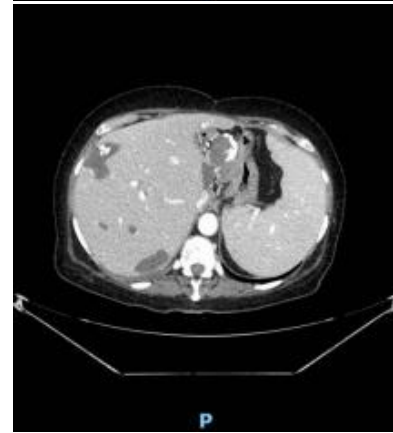
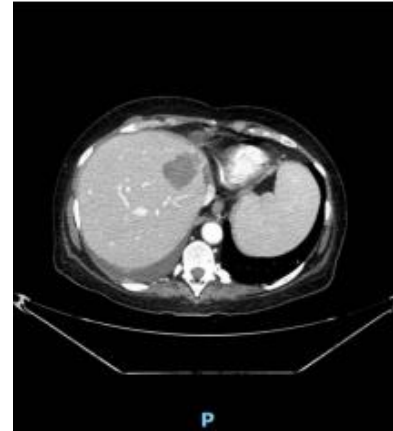
# TKI for life

Beyond progression

Ripretinib progression

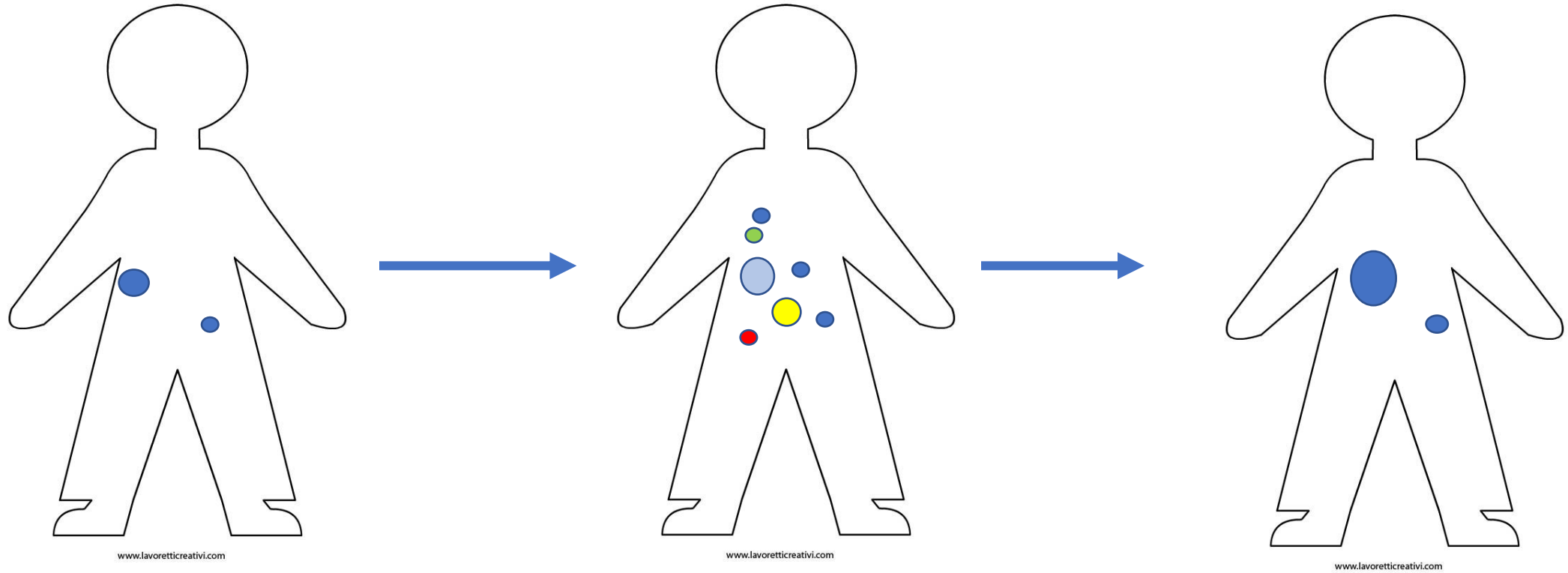


Ripretinib continuing



# Tipologia della Progressione lesionale

**Imaging**



**Clinica**

symptomatic

asymptomatic

# Focal progression

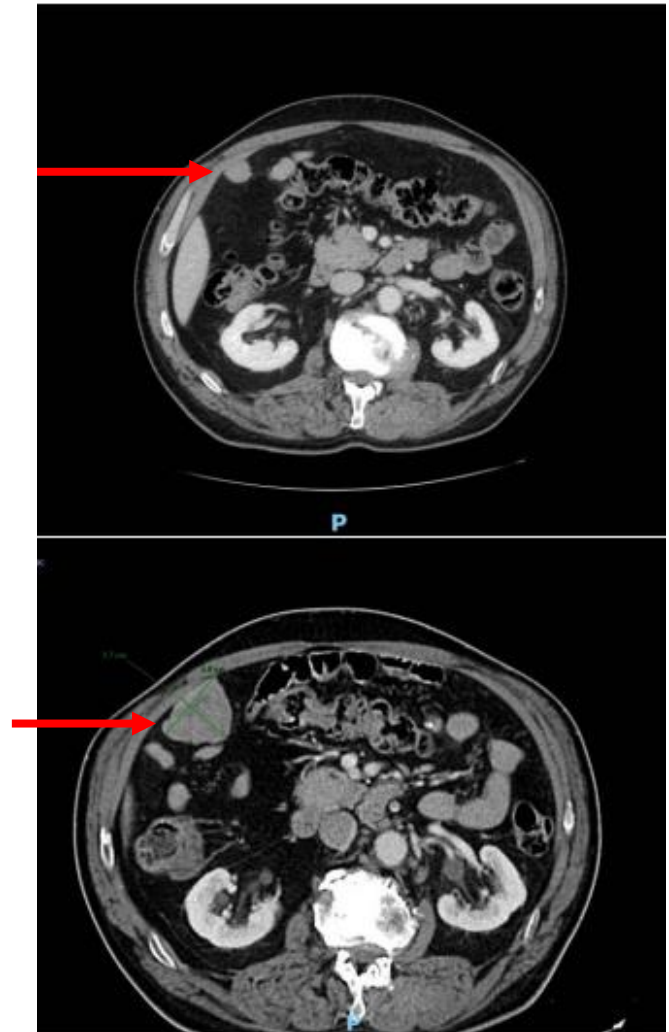
“nodule in the nodule”



“single new nodule”



“single progressing nodule”



# Local treatment in metastatic GIST



## Local treatment in metastatic GIST patients: A multicentre analysis from the Dutch GIST Registry

Pien Brink <sup>a,1</sup>, Gijsbert M. Kalisvaart <sup>b,\*</sup>, Yvonne M. Schrage <sup>c</sup>, Mahmoud Mohammadi <sup>d</sup>, Nikki S. Ijzerman <sup>e</sup>, Roos F. Bleckman <sup>f</sup>, Tom Wal <sup>g</sup>, Lioe-Fee de Geus-Oei <sup>b,h</sup>, Henk H. Hartgrink <sup>a</sup>, Dirk J. Grunhagen <sup>i</sup>, Cornelis Verhoef <sup>i</sup>, Stefan Sleijfer <sup>j</sup>, Astrid W. Oosten <sup>j</sup>, Lukas B. Been <sup>k</sup>, Robert J. van Ginkel <sup>k</sup>, An K.L. Reyners <sup>f</sup>, Han J. Bonenkamp <sup>l</sup>, Ingrid M.E. Desar <sup>g</sup>, Hans Gelderblom <sup>d</sup>, Winan J. van Houdt <sup>c</sup>, Neeltje Steeghs <sup>e</sup>, Marta Fiocco <sup>m,n</sup>, Jos A. van der Hage <sup>a</sup>

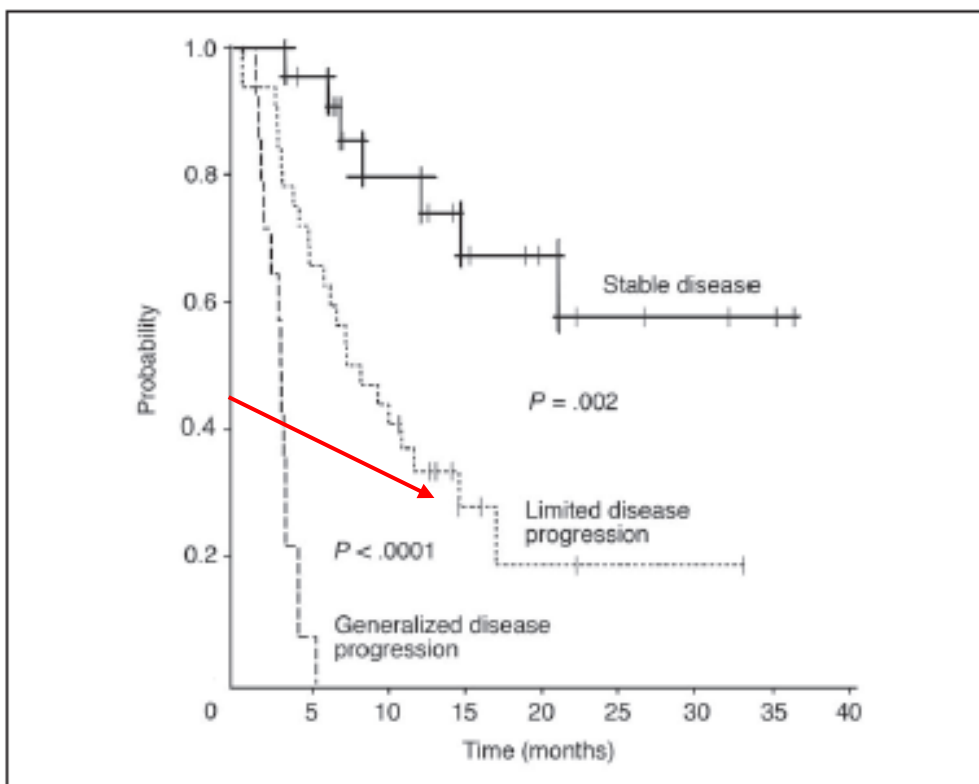


- Surgery
- Radiofrequency
- Radiotherapy
- Others...

# Surgery in metastatic setting

## Surgical Management of Advanced Gastrointestinal Stromal Tumors After Treatment With Targeted Systemic Therapy Using Kinase Inhibitors

Chandrajit P. Raut, Matthew Posner, Jayesh Desai, Jeffrey A. Morgan, Suzanne George, David Zahrieh, Christopher D.M. Fletcher, George D. Demetri, and Monica M. Bertagnolli



### Impact of Surgery on Advanced Gastrointestinal Stromal Tumors (GIST) in the Imatinib Era

S. Bonvalot,<sup>1</sup> H. Eldweny,<sup>1</sup> C. Le Pêchoux,<sup>2</sup> D. Vanel,<sup>3</sup> P. Terrier,<sup>4</sup> A. Cavalcanti,<sup>1</sup> C. Robert,<sup>5</sup> N. Lassau,<sup>3</sup> and A. Le Cesne<sup>5</sup>

Preoperative imatinib mesylate for unresectable or locally advanced primary gastrointestinal stromal tumors (GIST)

M. Fiore<sup>a</sup>, E. Palassini<sup>b</sup>, E. Fumagalli<sup>b</sup>, S. Pilotti<sup>c</sup>, E. Tamborini<sup>c</sup>, S. Stacchiotti<sup>b</sup>, E. Pennacchioli<sup>a</sup>, P.G. Casali<sup>b</sup>, A. Gronchi<sup>a\*</sup>

### Surgical Resection of Gastrointestinal Stromal Tumors After Treatment with Imatinib

Robert H. I. Andtbacka, MD, CM,<sup>1</sup> Chuan S. Ng, MD,<sup>2</sup> Courtney L. Scaife, MD,<sup>5</sup> Janice N. Cormier, MD, MPH,<sup>1</sup> Kelly K. Hunt, MD,<sup>1</sup> Peter W. T. Pisters, MD,<sup>1</sup> Raphael E. Pollock, MD, PhD,<sup>1</sup> Robert S. Benjamin, MD,<sup>3</sup> Michael A. Burgess, MD,<sup>3</sup> Lei L. Chen, MD, PhD,<sup>3</sup> Jonathan Trent, MD,<sup>3</sup> Shreyaskumar R. Patel, MD,<sup>3</sup> Kevin Raymond, MD,<sup>4</sup> and Barry W. Feig, MD<sup>1</sup>

# Multimodality treatment: RFA

Cardiovasc Intervent Radiol  
DOI 10.1007/s00270-013-0615-1

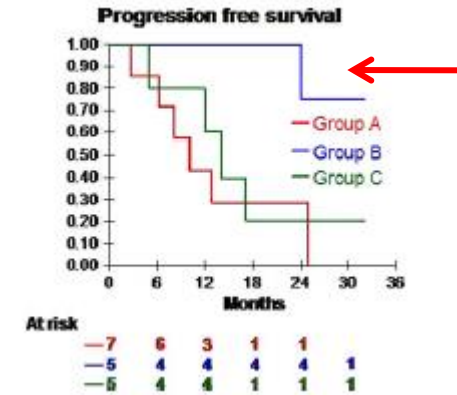


CLINICAL INVESTIGATION

## A Role for Adjuvant RFA in Managing Hepatic Metastases from Gastrointestinal Stromal Tumors (GIST) After Treatment with Targeted Systemic Therapy Using Kinase Inhibitors

Antoine Hakimé · Axel Le Cesne · Frederic Deschamps ·  
Geoffroy Farouil · Sana Boudabous ·  
Anne Aupérin · Julien Domont · Thierry Debaere

**17 patients**  
**Median PFI > 12 months**



**In TKI responsive or continuing patients**

CLINICAL STUDY

## Safety and Efficacy of Radiofrequency Ablation for Hepatic Metastases from Gastrointestinal Stromal Tumor

Jin-Hee Jung, MD, Hyung Jin Won, MD, Yong Moon Shin, MD,  
and Pyo Nyun Kim, MD

**28 patients**  
**In TKI resistant patients**



# Multimodality treatment: Radiotherapy

**Table 3**  
Patients with GISTs treated by radiotherapy.

Refs.	n (M/F)	Location	Previous TKIs	Surgery	RT	Concomitant TKIs	Toxicity (n)	Response (n)	Palliation symptoms	Follow-up (months)	Recurrence/progression	OS (month)
Cuaron et al. (2013) [141]	15 (8/7)	Abdomen/bone/pelvis (rectum)	11 (sorafenib, sunitinib, imatinib, nilotinib, pazopanib)	NR	3 Gy × 10 Fr (n=8) Other schemes: 1.8 × 25 Fr, 2 Gy × 25 Fr SBRT: n=2: 24 Gy × 1 Fr n=1: 8 Gy × 3 Fr n=2: 6 Gy × 5 Fr n=2: 5 Gy × 5 Fr Partial course 3 Gy × 10 Fr (n=3)	9 (imatinib, nilotinib, sorafenib, sunitinib)	G1: (3) G2: (4) G3 (1)	PR (5) SD (9)	12	5.1	NR	6.6
Joensuu et al. (2015) [142]	25 (17/8)	Abdomen	25 (imatinib)	No	30–40 Gy (3DRT/IMRT)	19	G1–2 (14) G3 (11)	PR (2) SD (20) PD (3)	NR	19	12	19
Rathmann et al. (2015) [143]	9 (7/2)	Liver	9 (imatinib, sunitinib)	No	0.55–1.88 GBq	None	G1–2	CR (3) SD (1) PR (5)	NR	NR	8	29.8
Pollock et al. (2001) [144]	1 F	Rectum	None	Yes, R1	Adjuvant RT 36 Gy whole pelvis Additional 9 Gy to the partial pelvic field Boost residual tumor 54 Gy	None	G2	PR	Yes	24	No	18
Ciresa et al. (2009) [145]	1 M	Rectum	None	Yes	Neoadjuvant 50.4 Gy (1.8 × 28 Fr) planned dose Cy final dose due to toxicity	Imatinib	G2–3	pCR	Yes	NR	NR	NR
Knowlton et al. (2011) [146]	1 M	Stomach	None	Yes (debulky)	3DRT 36 Gy (1.5 Gy × 24 Fr)	None	None	NR	Yes	240	No	240
Jang et al. (2018) [150]	1 M	Liver	Imatinib	Yes	40 (16 Fr) RE	Imatinib	NR	NR	Yes	NR	No	6
Yang et al. (2018) [147]	1 M	Duodenal bulb	Imatinib–sunitinib	No	32.5 Gy (2.5 Gy × 13 Fr) IMRT	None	NR	PR	Yes	19	PD	16
Crosby et al. (2001) [148]	50 (31/19)	Small intestine	None	Yes R1 (n=22) R2 (n=9)	45 Gy (1.8 Gy × 25 Fr)	None	NR	NR	No	20	21	>60
Gatto et al. (2017) [149]	2 M	Stomach + liver metastases	Imatinib–sunitinib	Yes, R1	1st case: 35 Gy (2.5 Gy × 14 Fr) 2nd case: 45 Gy (9 Gy × 5 Fr)	Regorafenib (1)	None	PR (1) SD (1)	Yes	NR	1	1 (36) 1 (5)

TKIs: tyrosine kinase inhibitors; RT: radiotherapy; RE: radio-embolization; NR: not reported; CR: complete response; PR: partial response; SD: stable disease; PD: progressive disease; Gy: gray; G: grade; OS: overall survival; R1: microscopic residual tumor; R2: macroscopic residual tumor; Fr: fractions.

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Review article

## Radiotherapy in the management of rare gastrointestinal cancers: A systematic review

### Radiothérapie dans la prise en charge des cancers gastro-intestinaux rares : revue générale

F.Z. Bellefkih<sup>a,\*</sup>, N. Benchakroun<sup>a,b</sup>, I. Lalya<sup>b</sup>, B. Amaoui<sup>b</sup>, H. El Kacemi<sup>b</sup>, A. Acharki<sup>b</sup>, M. El Hfid<sup>b</sup>, A. El Mazghi<sup>b</sup>, T. Chekrine<sup>a</sup>, Z. Bouchbika<sup>a</sup>, H. Jouhadi<sup>a</sup>, S. Sahraoui<sup>a,b</sup>, N. Tawfiq<sup>a</sup>, M. Michalet<sup>c</sup>

<sup>a</sup> Department of Radiotherapy–Oncology, Ibn Rochd University Hospital, Hassan II University, Casablanca, Morocco

<sup>b</sup> Association marocaine d'oncologie–radiothérapie (Aoram), Casablanca, Morocco

<sup>c</sup> Service d'oncologie–radiothérapie, institut du cancer de Montpellier, Fédération d'oncologie–radiothérapie d'Occitanie Méditerranée (Forom), Montpellier, France



# Multimodality treatment: Radiotherapy

CASE REPORT

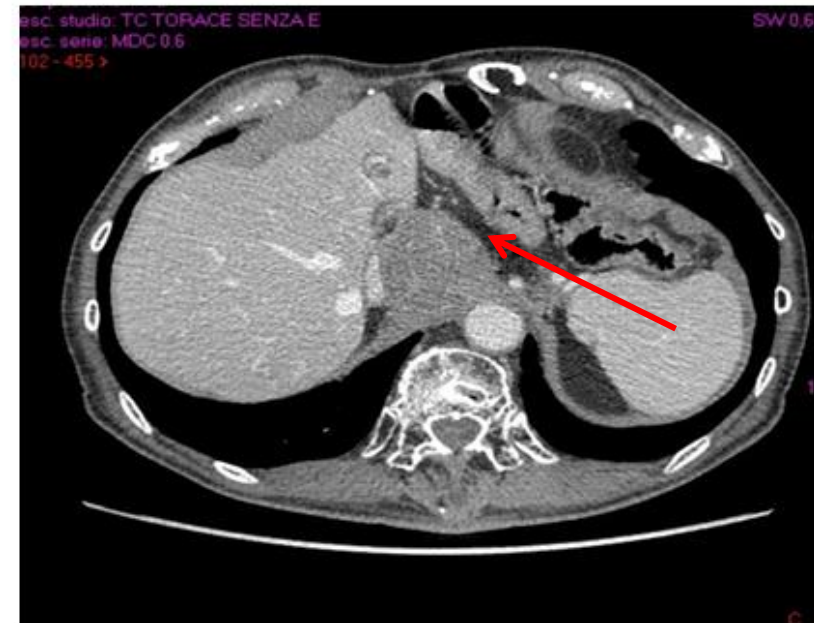
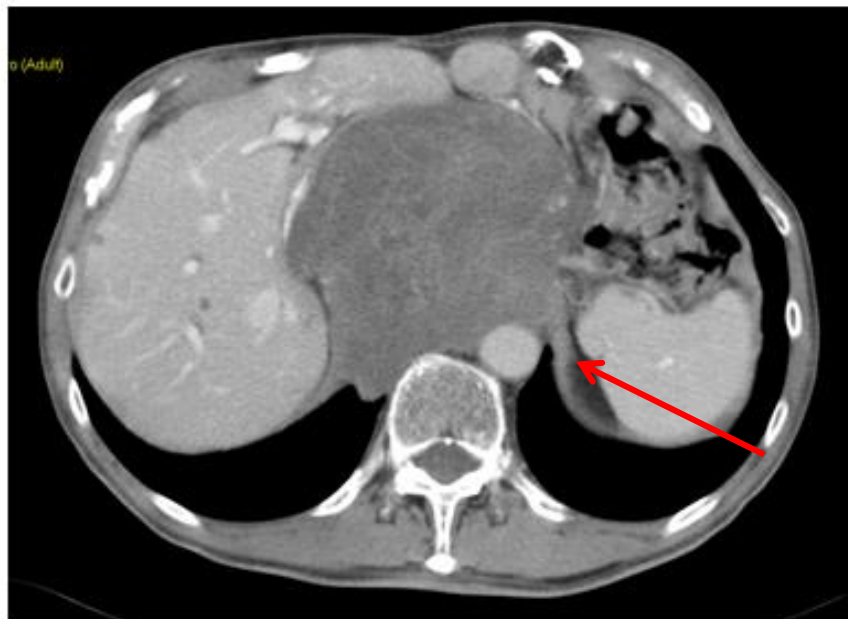
Open Access



## Radiotherapy in the management of gist: state of the art and new potential scenarios

L. Gatto<sup>1</sup>, M. Nannini<sup>1</sup>, M. Saponara<sup>1</sup>, V. Di Scioscio<sup>2</sup>, G. Beltramo<sup>3</sup>, G. P. Frezza<sup>4</sup>, G. Ercolani<sup>5</sup>, A. D. Pinna<sup>5</sup>, A. Astolfi<sup>6</sup>, M. Urbini<sup>6</sup>, G. Brandi<sup>1,6</sup>, G. Biasco<sup>1,6</sup> and M. A. Pantaleo<sup>1,6\*</sup>

### Radiotherapy in sunitinib resistant patient



# Liquid Biopsy in GIST

Clinical  
Cancer  
Research

Predictive Biomarkers and Personalized Medicine

## Detection of Mutant Free Circulating Tumor DNA in the Plasma of Patients with Gastrointestinal Stromal Tumor Harboring Activating Mutations of *CKIT* or *PDGFRA*

Jacqueline Maier<sup>1</sup>, Thoralf Lange<sup>1</sup>, Irina Kerle<sup>3</sup>, Katja Specht<sup>5</sup>, Melanie Bruegel<sup>4</sup>, Claudia Wickenhauser<sup>2</sup>, Philipp Jost<sup>3</sup>, Dietger Niederwieser<sup>1</sup>, Christian Peschel<sup>3</sup>, Justus Duyster<sup>5</sup>, and Nikolas von Bubnoff<sup>6</sup>

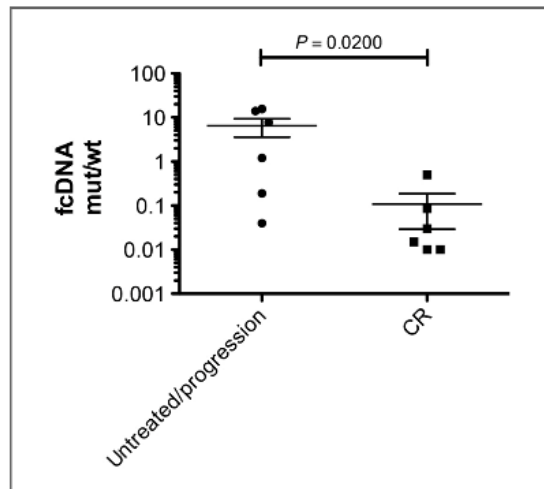


Figure 1. Correlation of mutant fcDNA and disease setting. Shown are the highest fcDNA mutant to wt (mut/wt) ratios measured for individual patients who were test-positive. Patients with untreated GIST or progressive disease (untreated/progression) versus patients in CR. There were no significant differences in mean follow-up ( $P = 0.8255$ ) and sample frequency ( $P = 0.8761$ ) between "untreated/progression" ( $n = 6$ ) and "CR" ( $n = 6$ ) groups.

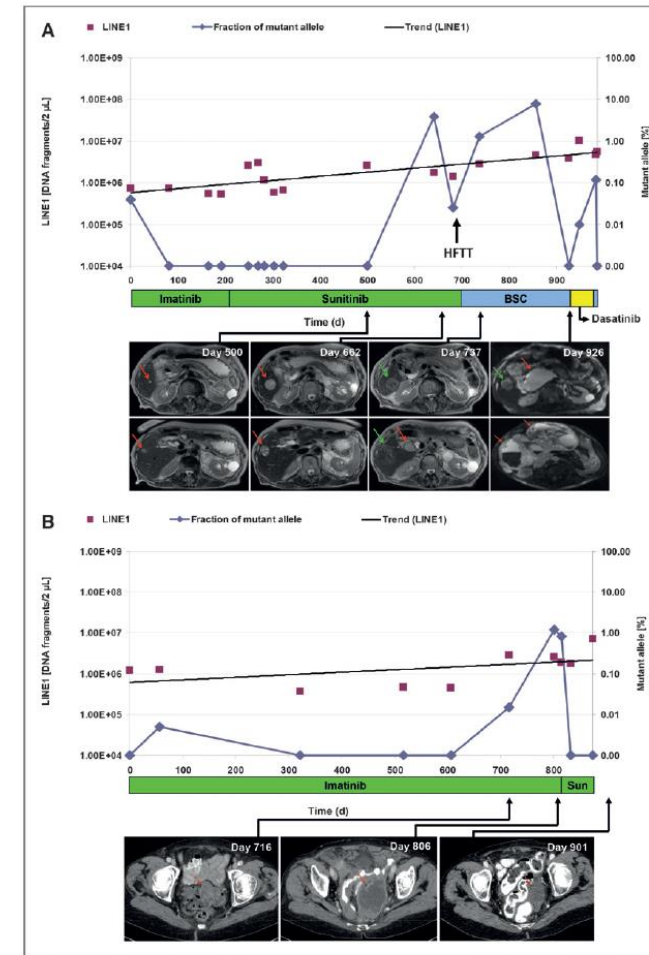


Figure 3. A–E, *LINE1* and mutant fcDNA in correlation with clinical response in individual patients over time. *LINE1* (long interspersed nuclear elements; left y-axis) reflects total fcDNA; mutant allele in percentage wt indicates the amount of mutant fcDNA (right y-axis). Treatments and results of imaging (MRI, CT, and FDG-PET/CT) are shown below the time line (x-axis). Patient numbers correspond to Fig. 2. A, patient 5 (age, 76 years; female), *CKIT* exon 9 insertion AY502-503 mutation (BSC, best supportive care). B, patient 7 (age, 75 years; female), *CKIT* exon 11 deletion Y553-Q556 mutation.

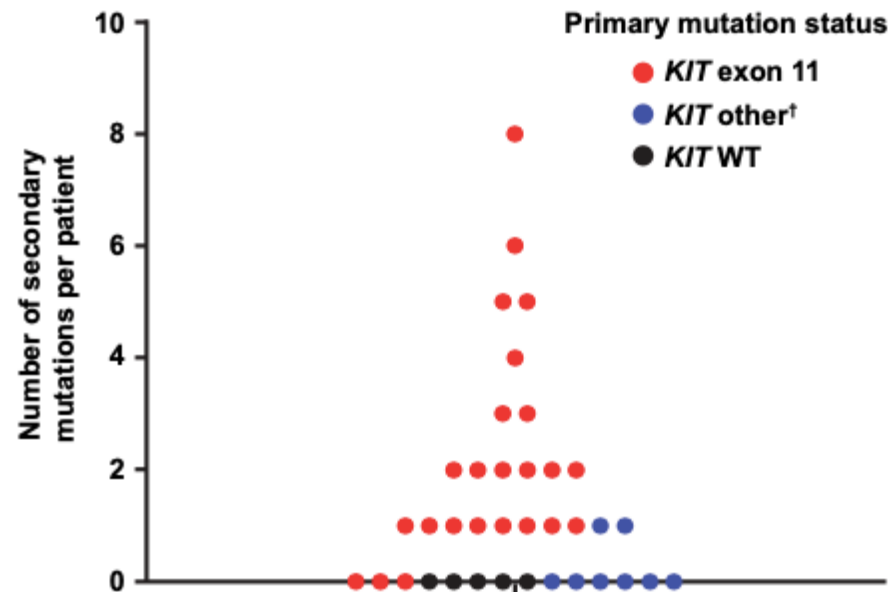
# Liquid Biopsy in GIST

CLINICAL CANCER RESEARCH | CLINICAL TRIALS: TARGETED THERAPY

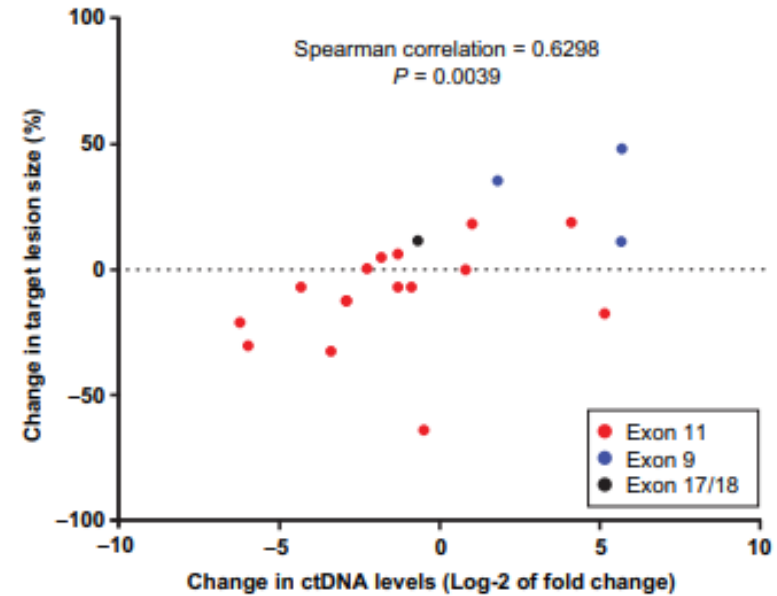
## Phase II Study of Ponatinib in Advanced Gastrointestinal Stromal Tumors: Efficacy, Safety, and Impact of Liquid Biopsy and Other Biomarkers



Suzanne George<sup>1</sup>, Margaret von Mehren<sup>2</sup>, Jonathan A. Fletcher<sup>3</sup>, Jichao Sun<sup>4</sup>, Sen Zhang<sup>4</sup>, Justin R. Pritchard<sup>4</sup>, John Graeme Hodgson<sup>4</sup>, David Kerstein<sup>5</sup>, Victor M. Rivera<sup>4</sup>, Frank G. Haluska<sup>4</sup>, and Michael C. Heinrich<sup>6</sup>

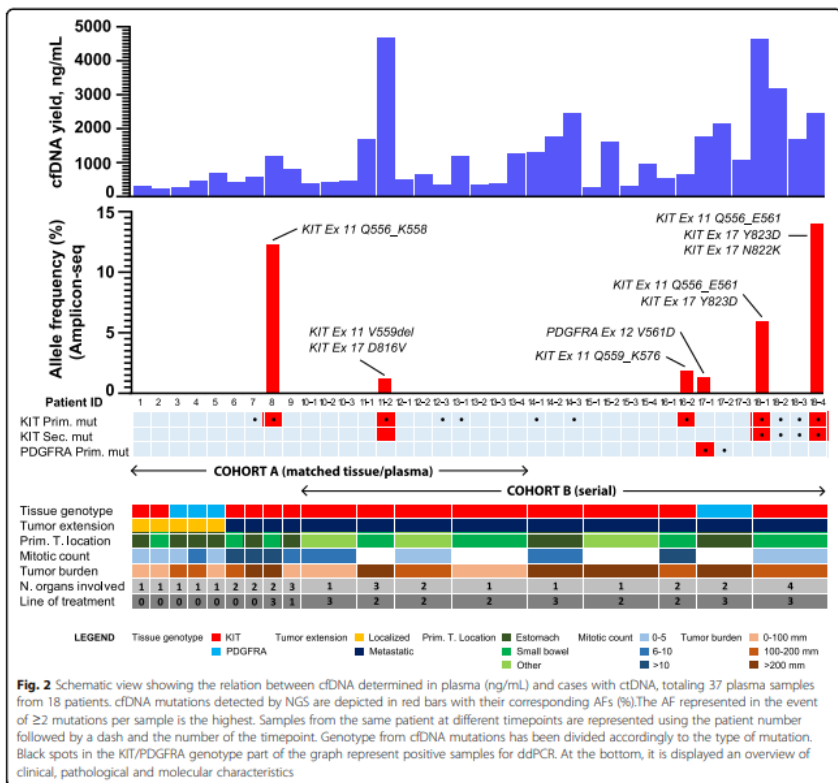


George et al.



## Clinical value of next generation sequencing of plasma cell-free DNA in gastrointestinal stromal tumors

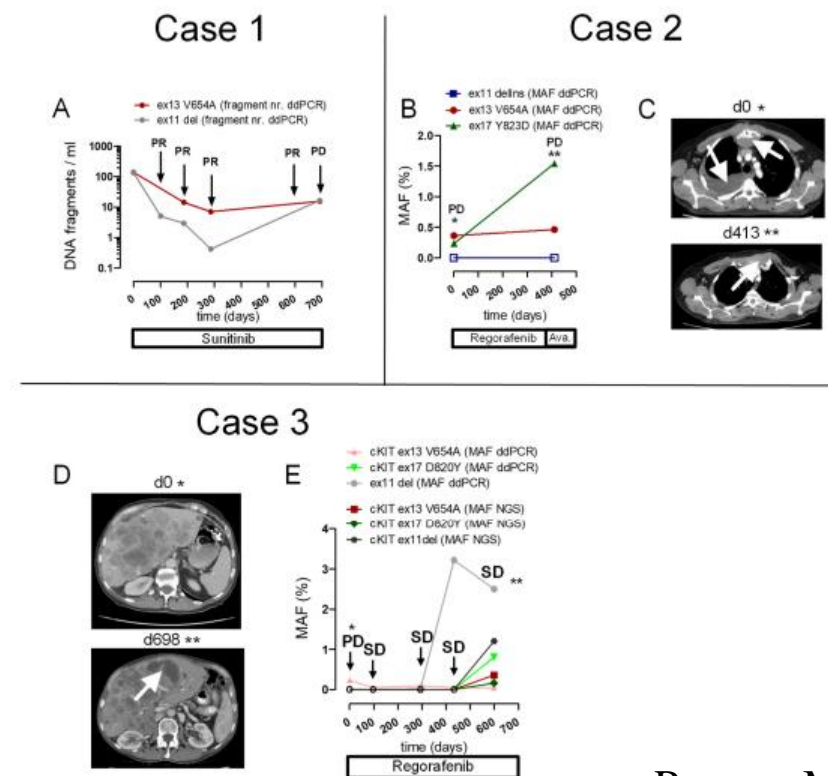
César Serrano<sup>1,2\*</sup>, Ana Vivancos<sup>3†</sup>, Antonio López-Pousa<sup>4</sup>, Judit Matito<sup>3</sup>, Francesco M. Mancuso<sup>3</sup>, Claudia Valverde<sup>1</sup>, Sergi Quiroga<sup>5</sup>, Stefania Landolfi<sup>6</sup>, Sandra Castro<sup>7</sup>, Cristina Dopazo<sup>7</sup>, Ana Sebio<sup>4</sup>, Anna C. Virgili<sup>4</sup>, María M. Menso<sup>8</sup>, Javier Martín-Broto<sup>9</sup>, Miriam Sansó<sup>3</sup>, Alfonso García-Valverde<sup>2</sup>, Jordi Rosell<sup>2</sup>, Jonathan A. Fletcher<sup>10</sup>, Suzanne George<sup>11</sup>, Joan Carles<sup>11</sup> and Joaquín Arribas<sup>2,12†</sup>



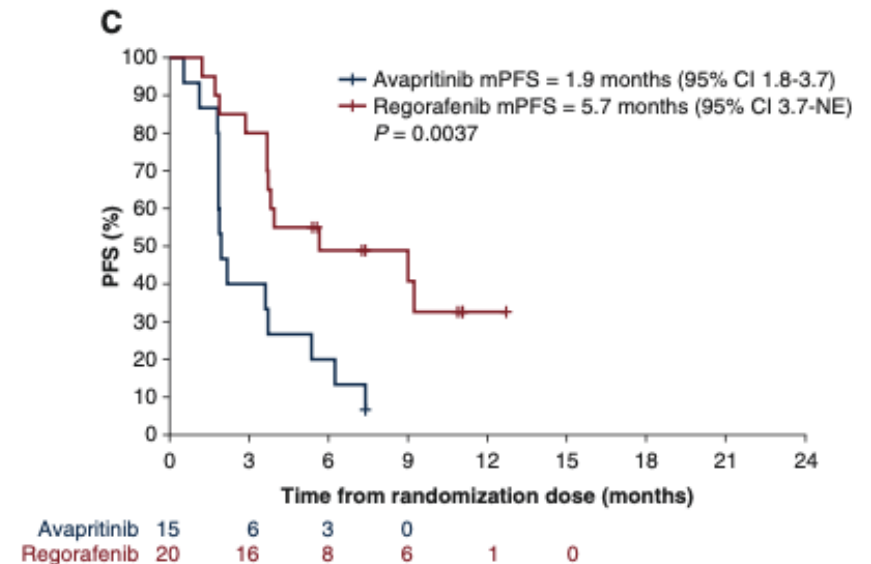
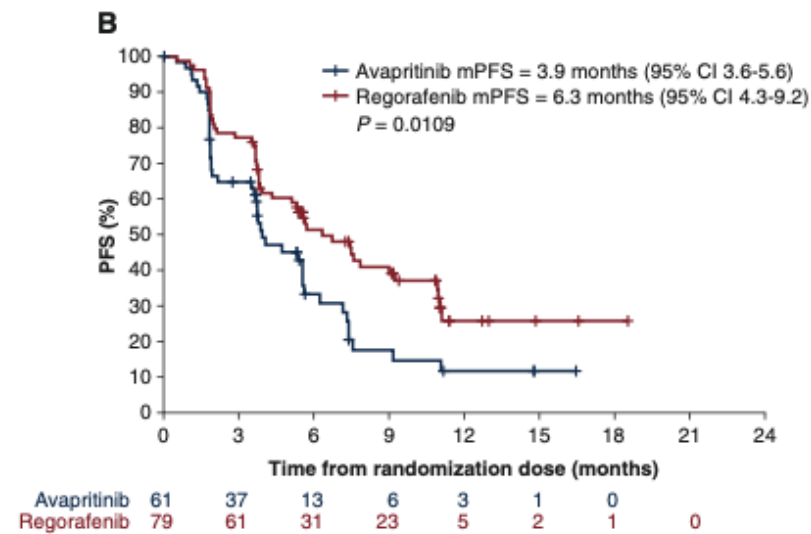
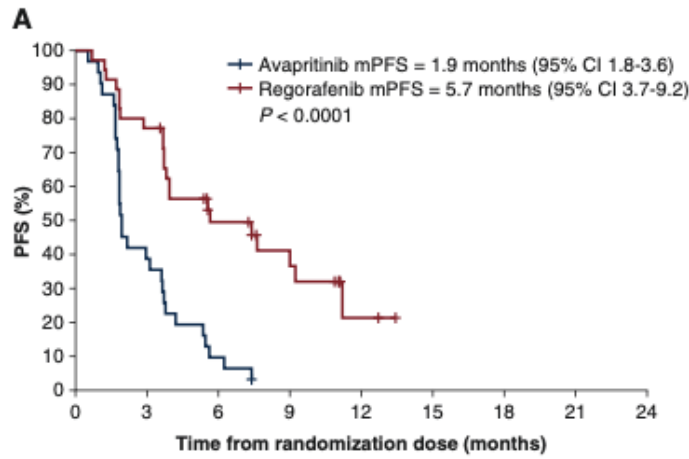
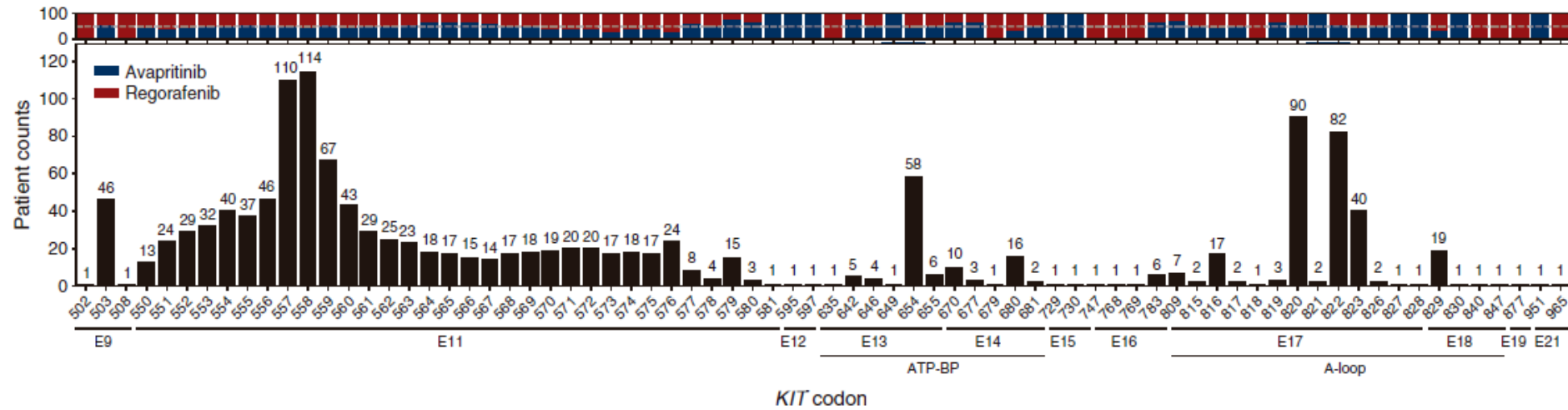
Article

## Development of Highly Sensitive Digital Droplet PCR for Detection of cKIT Mutations in Circulating Free DNA That Mediate Resistance to TKI Treatment for Gastrointestinal Stromal Tumor (GIST)

Michael Rassner<sup>1†</sup>, Silvia Waldeck<sup>1,2</sup>, Marie Follo<sup>1†</sup>, Stefanie Jilg<sup>3,4</sup>, Ulrike Philipp<sup>1</sup>, Martina Jolic<sup>1,5</sup>, Julius Wehrle<sup>1</sup>, Philipp J. Jost<sup>3,6</sup>, Christian Peschel<sup>3</sup>, Anna Lena Illert<sup>1,2</sup>, Justus Duyster<sup>1,2†</sup>, Florian Scherer<sup>1,2</sup> and Nikolas von Bubnoff<sup>1,2,7,\*†</sup>

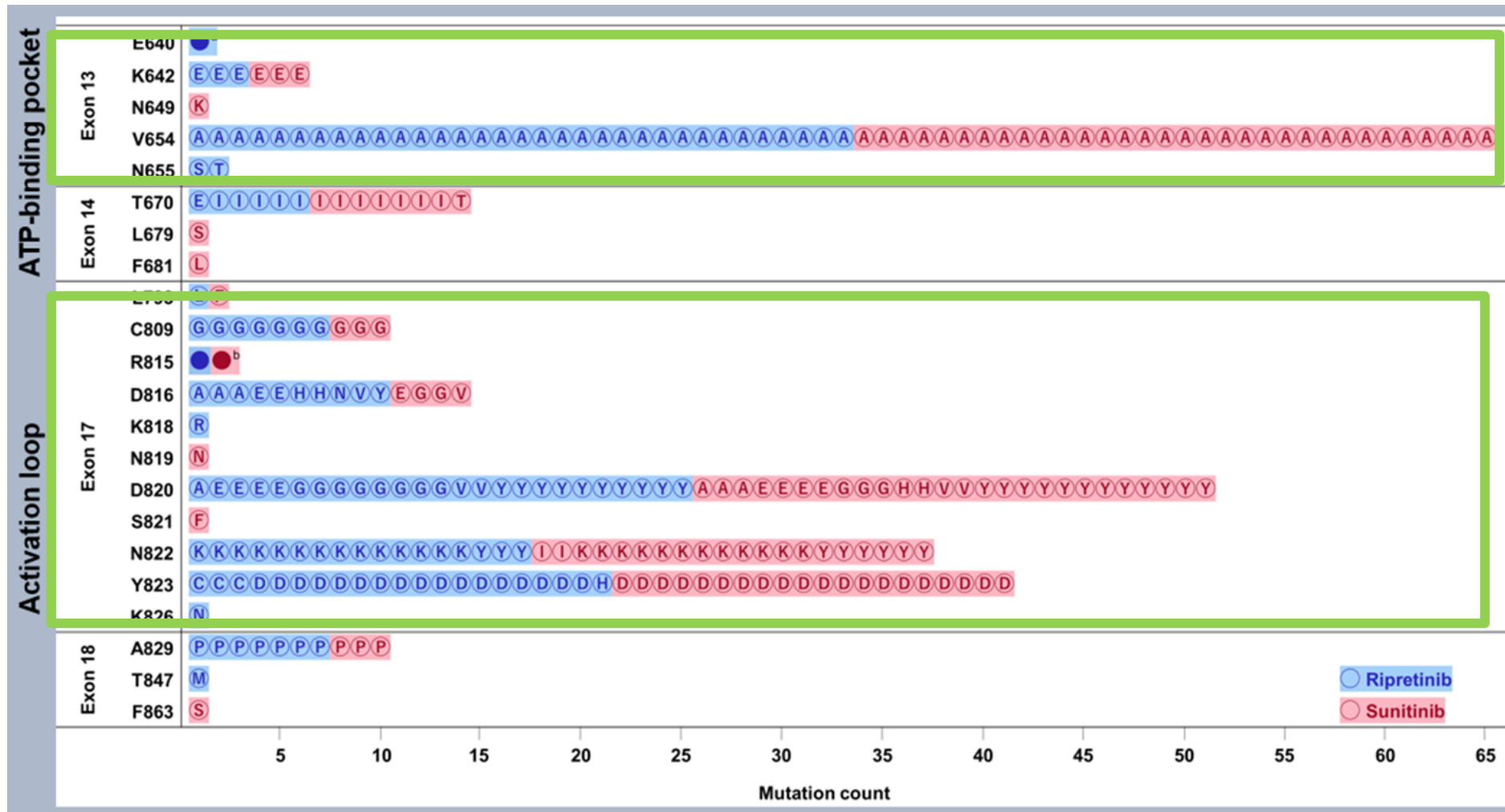


# Voyager Trial: KIT mutational spectrum as determined by ctDNA analysis

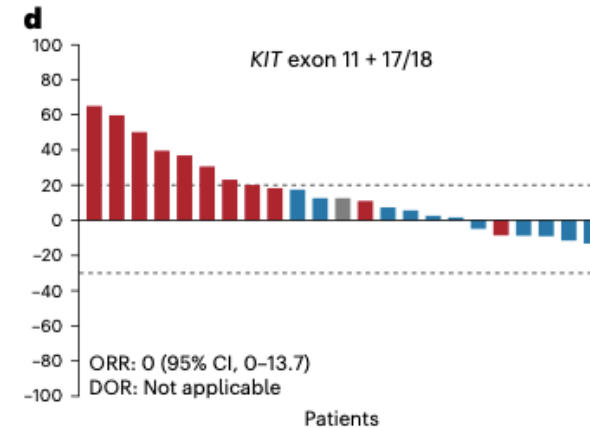
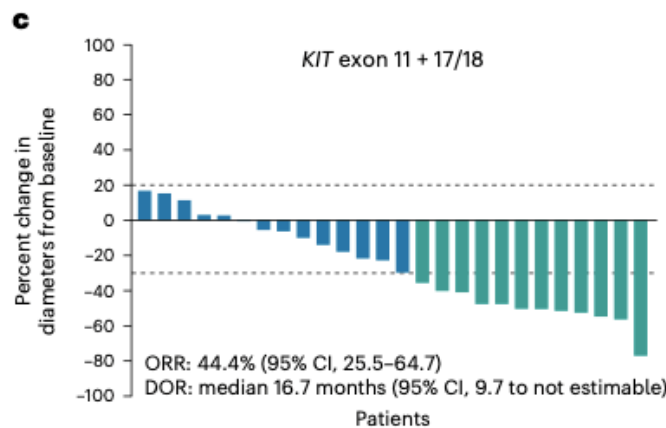
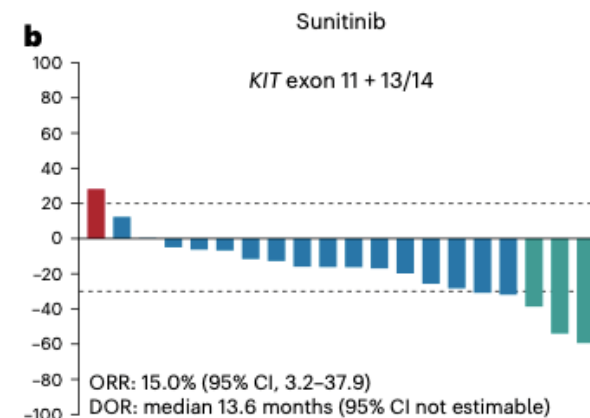
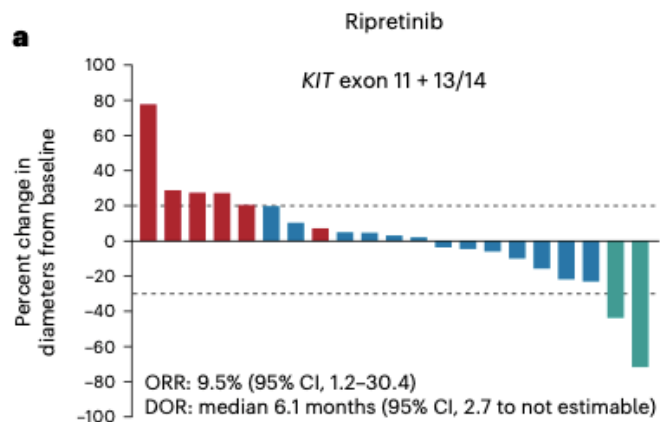
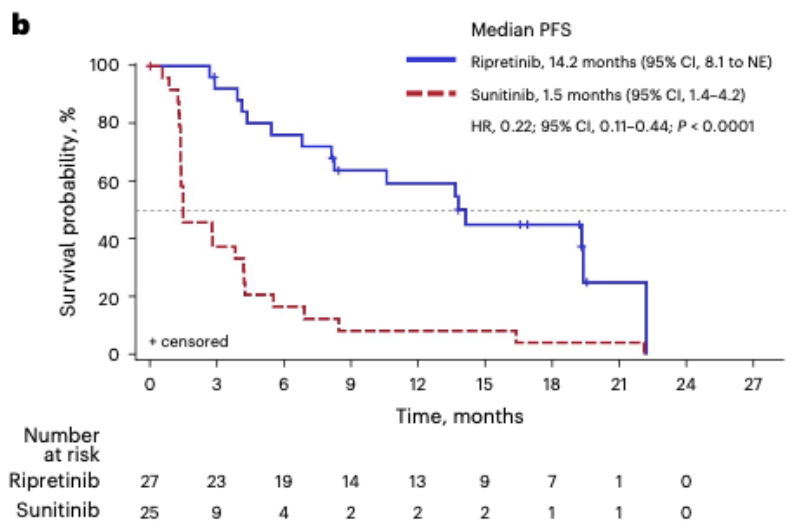
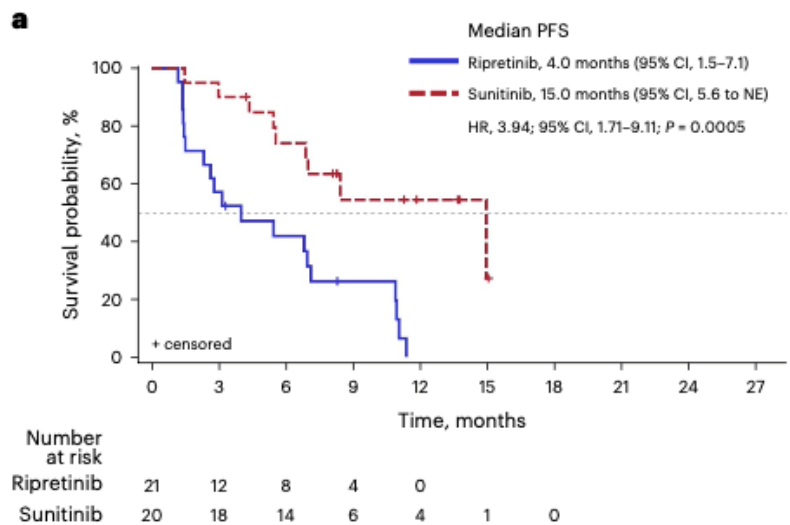




# INTRIGUE Trial: KIT mutational spectrum as determined by ctDNA analysis



# INTRIGUE Trial: KIT mutational spectrum as determined by ctDNA analysis



■ PD ■ SD ■ PR ■ NE



# Radiomic approach in GIST

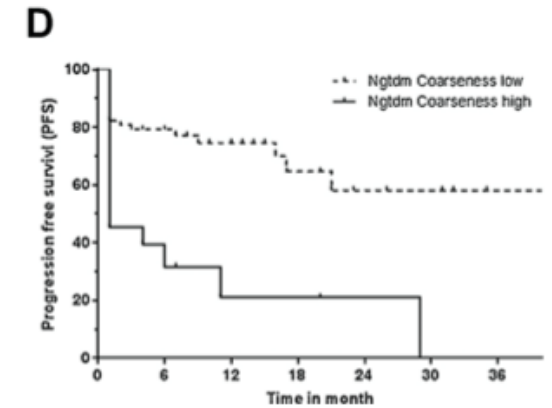
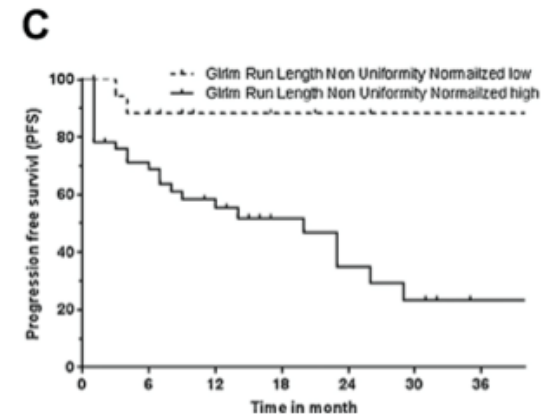
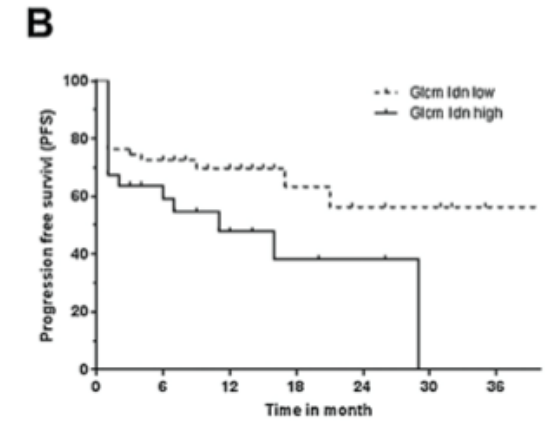
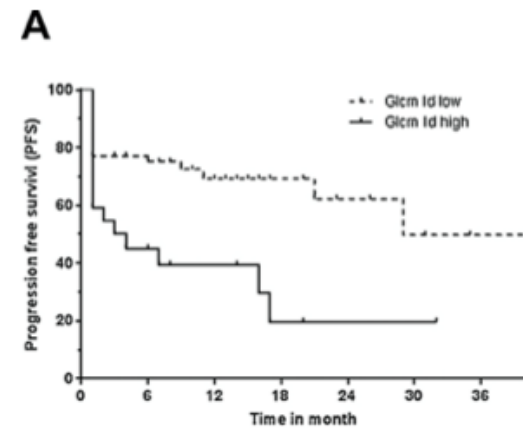
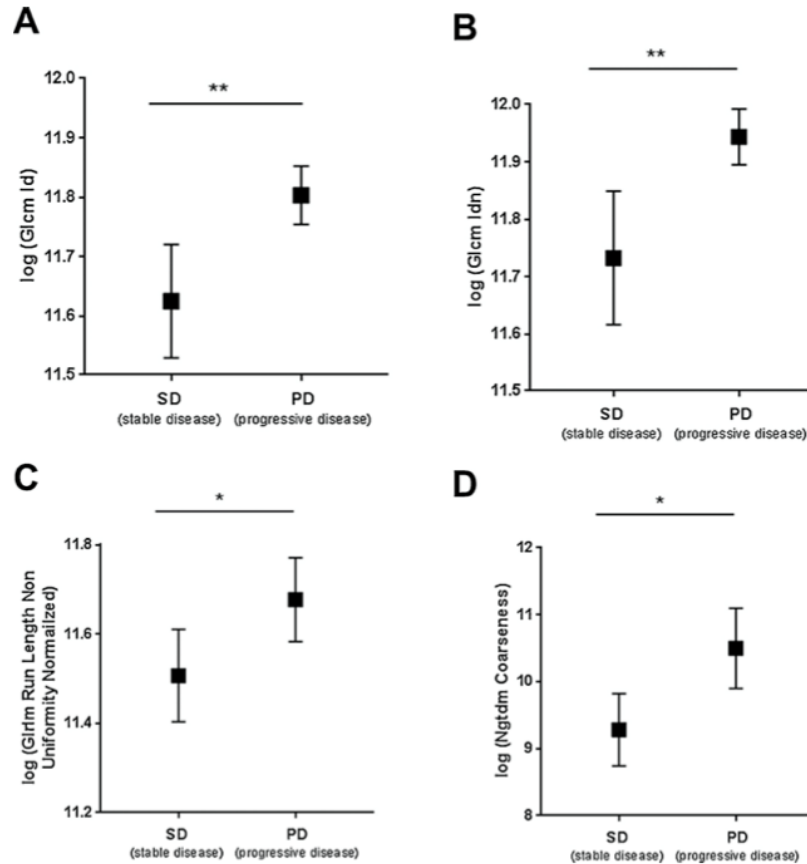


## Prognosis assessment in metastatic gastrointestinal stromal tumors treated with tyrosine kinase inhibitors based on CT-texture analysis

Kaspar Ekert<sup>a,\*</sup>, Clemens Hinterleitner<sup>b,1</sup>, Marius Horger<sup>a,1</sup>

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# Radiomic approach in GIST

## ONCOLOGY

CT features combined with RECIST 1.1  
criteria improve progression assessments  
of sunitinib-treated gastrointestinal stromal  
tumors



Jiazhenq Li<sup>1†</sup>, Shaoqing Huang<sup>2†</sup>, Hui Zhu<sup>3†</sup>, Chunhui Shou<sup>4†</sup>, Tianyu Lin<sup>5†</sup>, Xiaonan Yin<sup>6†</sup>, Quanjian Zhu<sup>7†</sup>,

RECIST 1.1 response		Non-PD	PD
Count features (on the first follow-up CT scan) <ul style="list-style-type: none"><li>Expanded/intensified high-enhancement area</li><li>Progressive EVFDM</li></ul>	None	Non-mPD	mPD
	One	mPD	mPD
	Two	mPD	mPD

**Fig. 5** Modified RECIST (mRECIST) criteria according to multivariate regression. Lesions with the mPD classification included those with the RECIST PD or non-PD classification that exhibited at least one morphologic feature. mPD, modified progressive disease

# Conclusioni

- Ad oggi l'identificazione della PD è dipendente dall'esperienza del MMD
- Le scelte terapeutiche conseguenti andrebbero ponderate bene soprattutto nella progressione focale
- L'integrazione di terapie locoregionali e TKI è il futuro del trattamento dei GIST metastatici
- La biopsia liquida è molto promettente in ricerca clinica, enorme è ancora la discussione in pratica clinica
- Nuovi scenari della ricerca in radiologia sono in divenire