

Lung adenocarcinoma with RET fusion: early experience with diagnosis and targeted therapy

*Gautschi O, Pall G, Schultheis A, Aebersold F, Gardizi M, Heuckmann J,
Merkelbach-Bruse S, Wolf J, Diebold J, Heukamp LC.*

From the University of Köln (DE), University of Innsbruck (AT),
Cantonal Hospital Luzern (CH), and Blackfield AG Köln (DE).

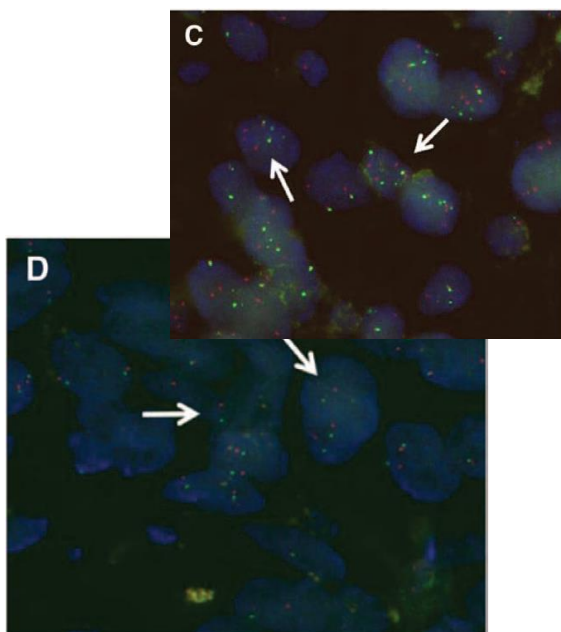
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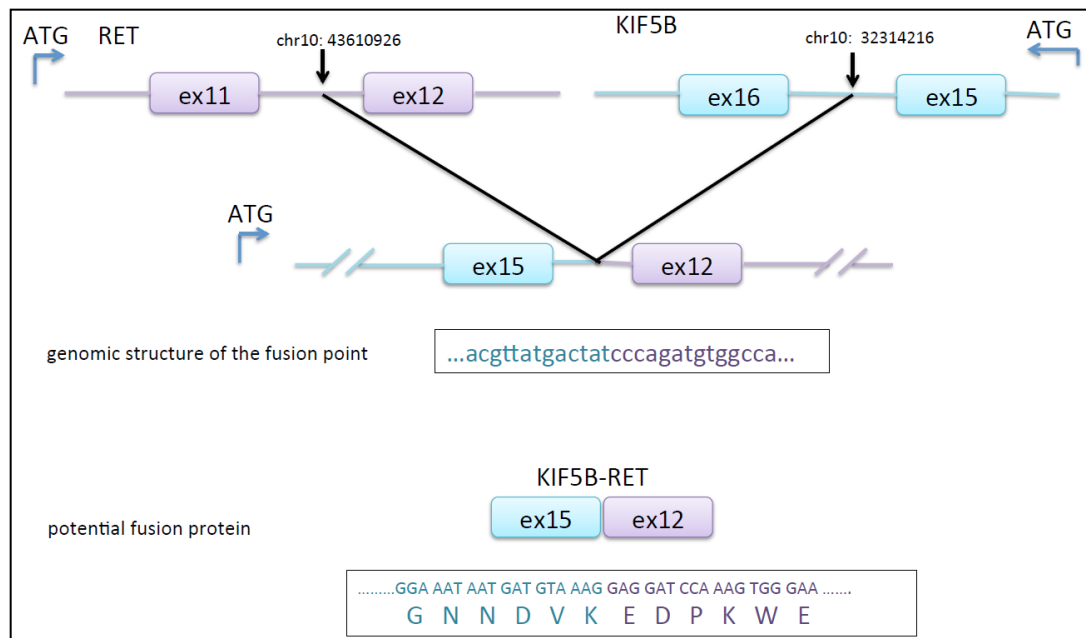
Objectives

- Incidence of RET fusion in routine diagnostics
- Preliminary experience with targeted therapy in the absence of a clinical trial
- Decision-making about specific prospective trials in the near future

FISH and CAGE[®]



KIF5B (C) and RET (D) FISH
Joachim Diebold
JTO 2013



CAGE[®] technology by Backfield AG
Frauke Leenders and Roman Thomas
Dept. of Translational Genomics, Cologne University

Count	Age	Gender	Smoking status	TNM at initial diagnosis	RET FISH+ cells	Fusion partner	Lines of CTX and RET inhibitors
1	69	F	Never	T1N2M0	49%	KIF5B	1 / 1
2	62	M	Never	T1N2M0	87%	KIF5B	2 / 3
3	63	M	Former	M1 (BRA)	47%	Unknown	3 / 2
4	72	M	Never	M1 (ADR)	77%	KIF5B	2 / 2
5	62	F	-	-	100%	KIF5B	- / -
6	-	-	-	-	26%	KIF5B	- / -
7	37	M	-	-	23%	KIF5B	- / -
8	69	M	-	-	87%	KIF5B	- / -
9	48	F	-	-	23%	KIF5B	- / -
10	79	M	-	-	25%	KIF5B	- / -
11	47	M	-	-	22%	KIF5B	- / -
12	70	M	-	-	22%	Unknown	- / -
13	53	F	Never	T1N2M0	65%	KIF5B	- / -
14	76	M	30 py	M1A (PLE)	87%	TBD	- / -
15	77	M	40 py	M1A (PLE)	27%	TBD	- / -
16	53	F	20 py	T1N0M0	34%	TBD	- / -
17	46	M	35 py	M1B (OSS)	18%	TBD	- / -

abstract

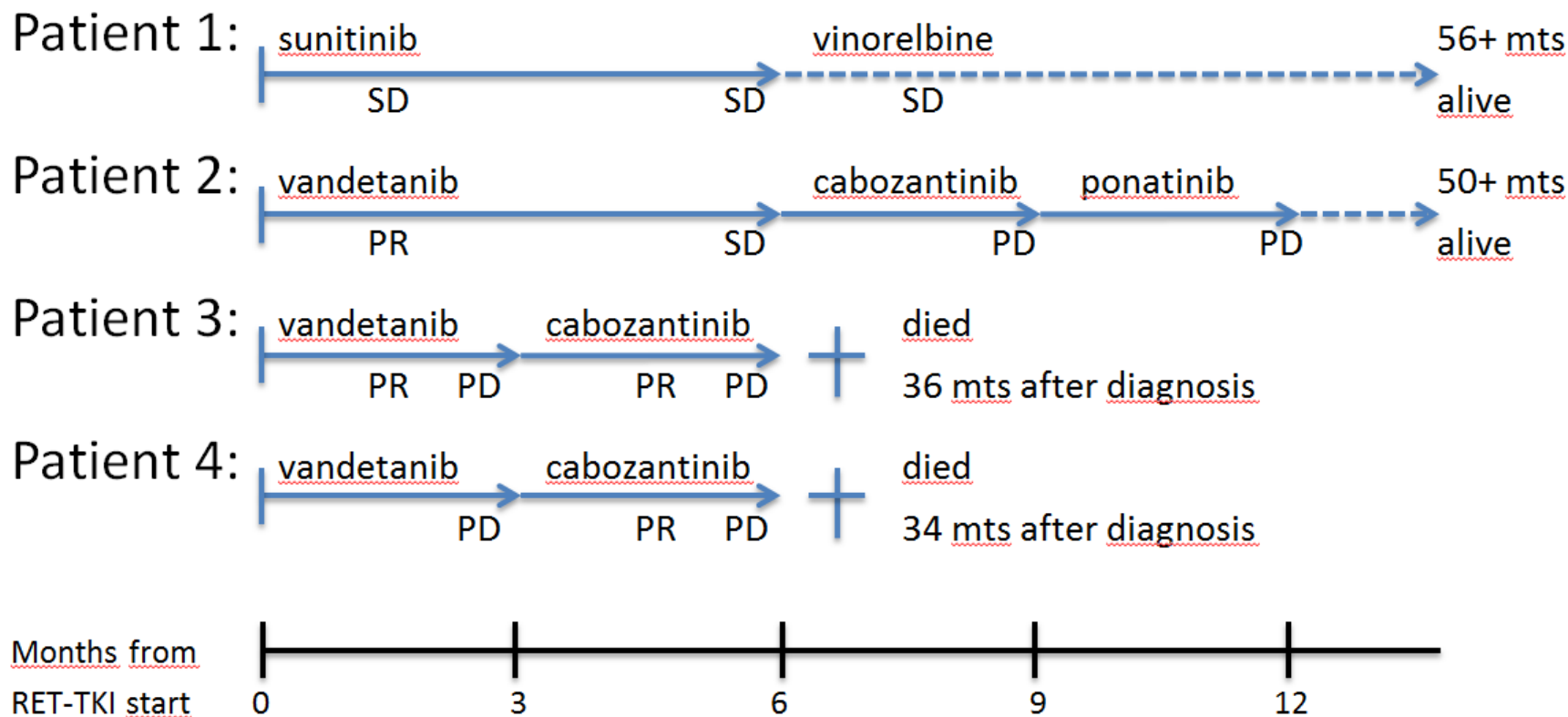
follow up

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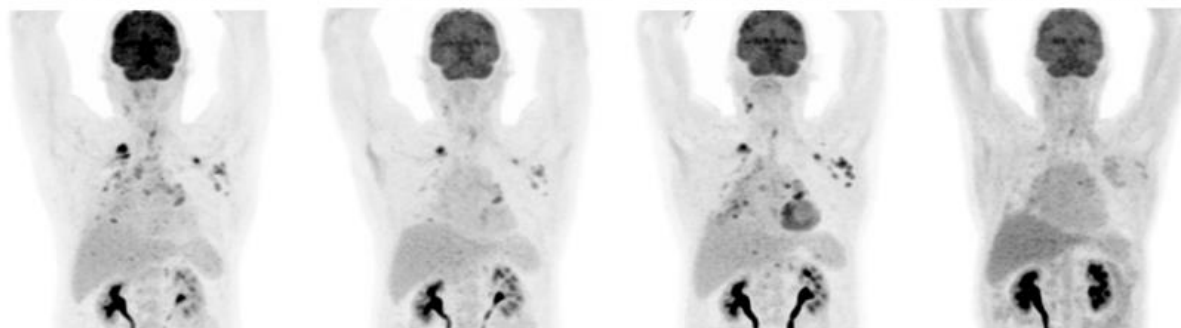


Patients with targeted therapy

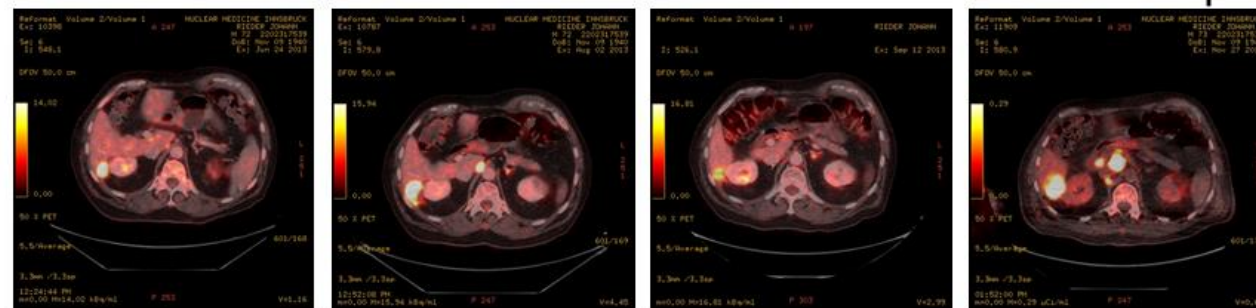


FDG-PET responders

Patient 3: baseline vandetanib baseline cabozantinib



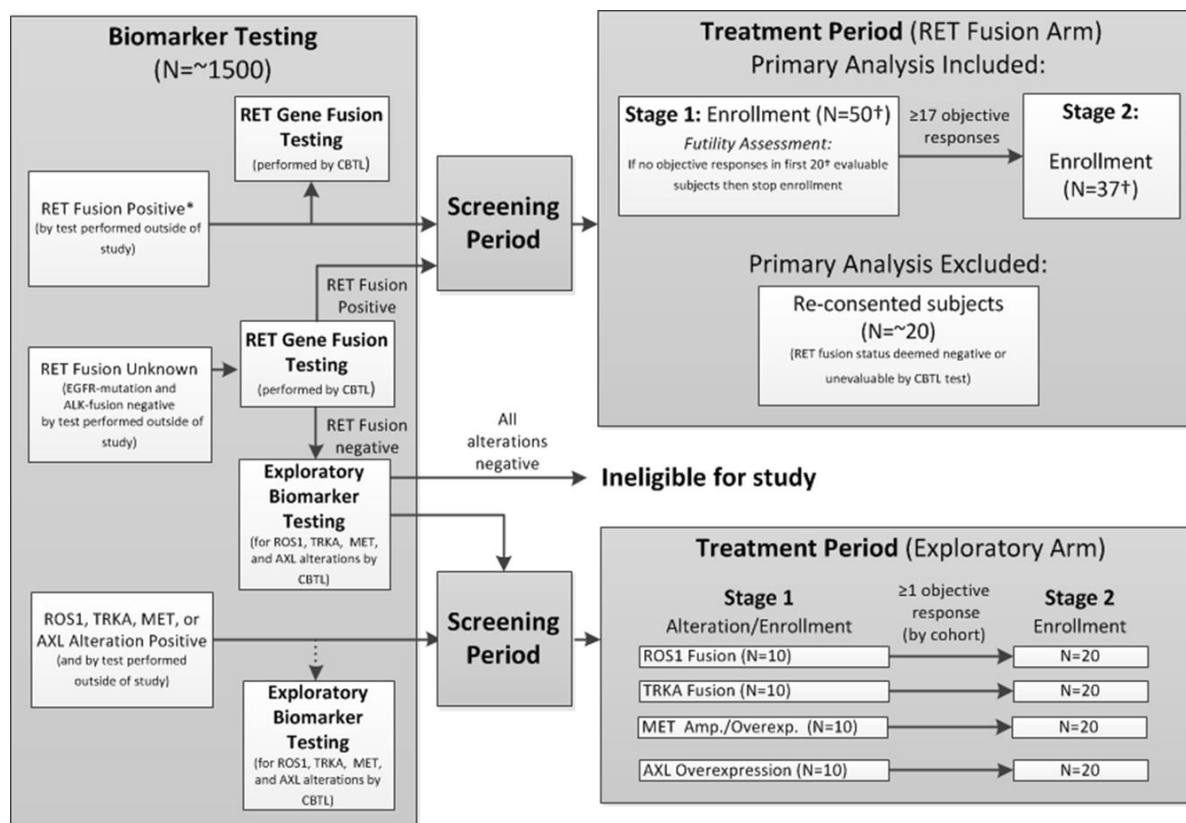
Patient 4: baseline vandetanib cabozantinib follow-up



Conclusions

- RET fusion was detectable in routine diagnostics.
- New technologies are needed for high-throughput testing of multiple fusion genes.
- No secondary RET mutations identified so far.
- Chemotherapy remains the standard of care.
- Preliminary activity of targeted therapy was observed and prospective studies are ongoing.

Global Phase II Trial XL184-212



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