DEGRO AG Stereotaxie Symposium, München, 2019

TOaSTT Update

Matthias Guckenberger

DEGRO AG Stereotaxie Project: TOaSST

Register Study of concomitant use of SRT and targeted drugs, retrospective & prospective cohort

Eligibility criteria:
- Treatment of **any metastatic tumor** with
- **Stereotactic radiotherapy**
- and any **targeted drug** (antibodies, small molecules, immunotherapy)
- within **+ / - 4 weeks** prior and after SBRT

Primary endpoint:
- High grade toxicity > grade II

Secondary endpoints:
- OS, LC, DFS

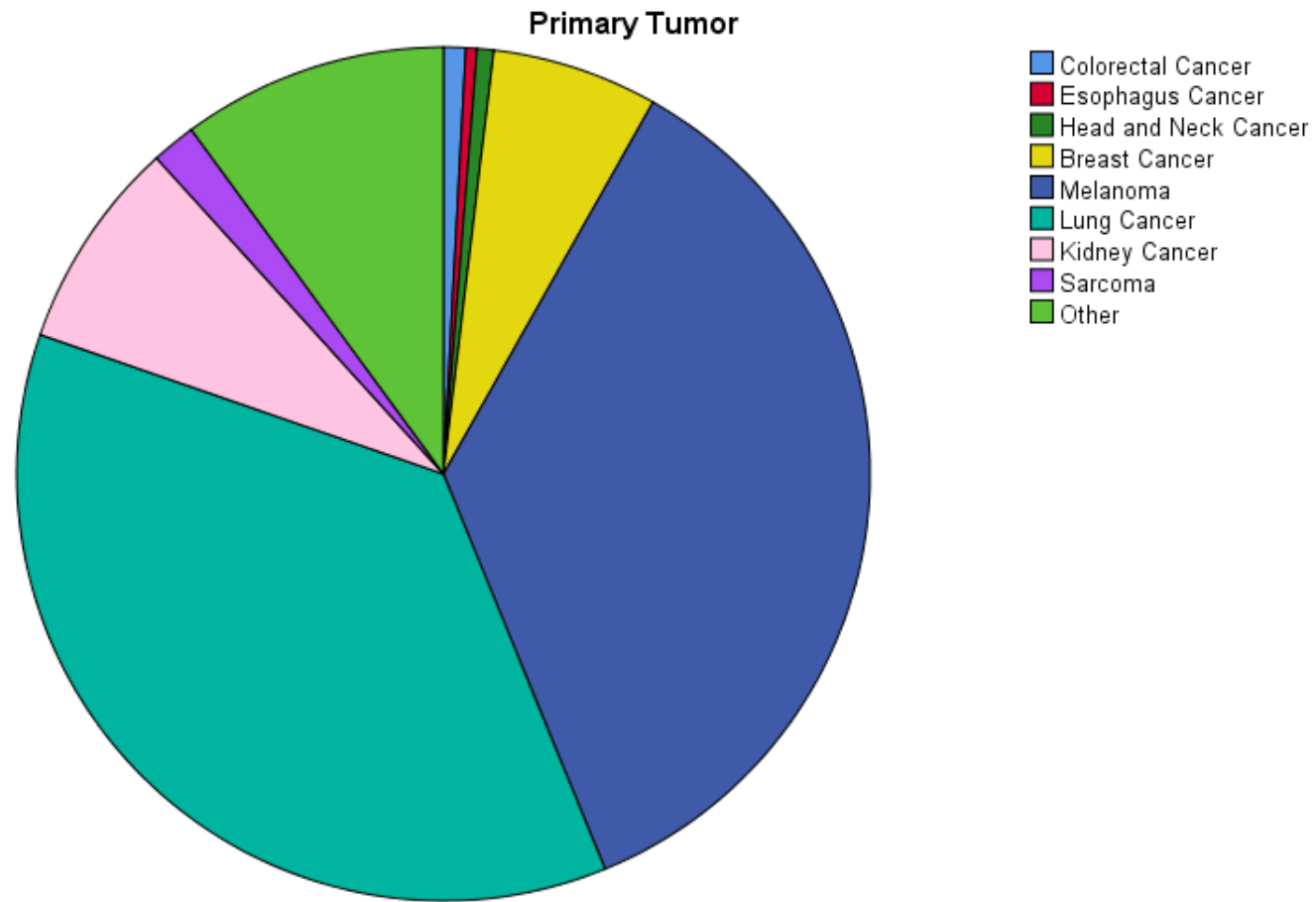USZ Universitäts Spital Zürich   Universität Zürich UZH

TOaSST prospective cohort

N=557, data entry of new patients closed since 01.09.2019

20 centers entered patients:
- Germany (14)
- Switzerland (2)
- Netherlands (1)
- Belgium (1)
- Australia (1)
- Austria (1)

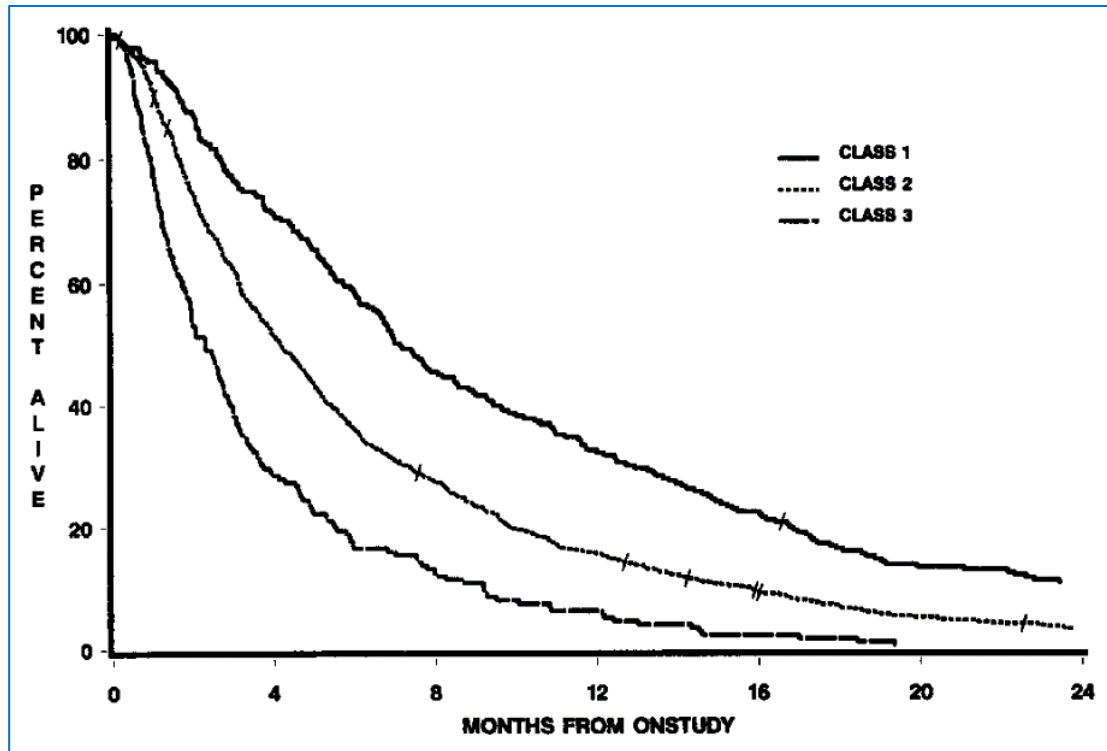# TOaSST prospective cohort

Primary Tumor

- Colorectal Cancer
- Esophagus Cancer
- Head and Neck Cancer
- Breast Cancer
- Melanoma
- Lung Cancer
- Kidney Cancer
- Sarcoma
- Other

• Most frequently melanoma & lung cancer

Toxicity

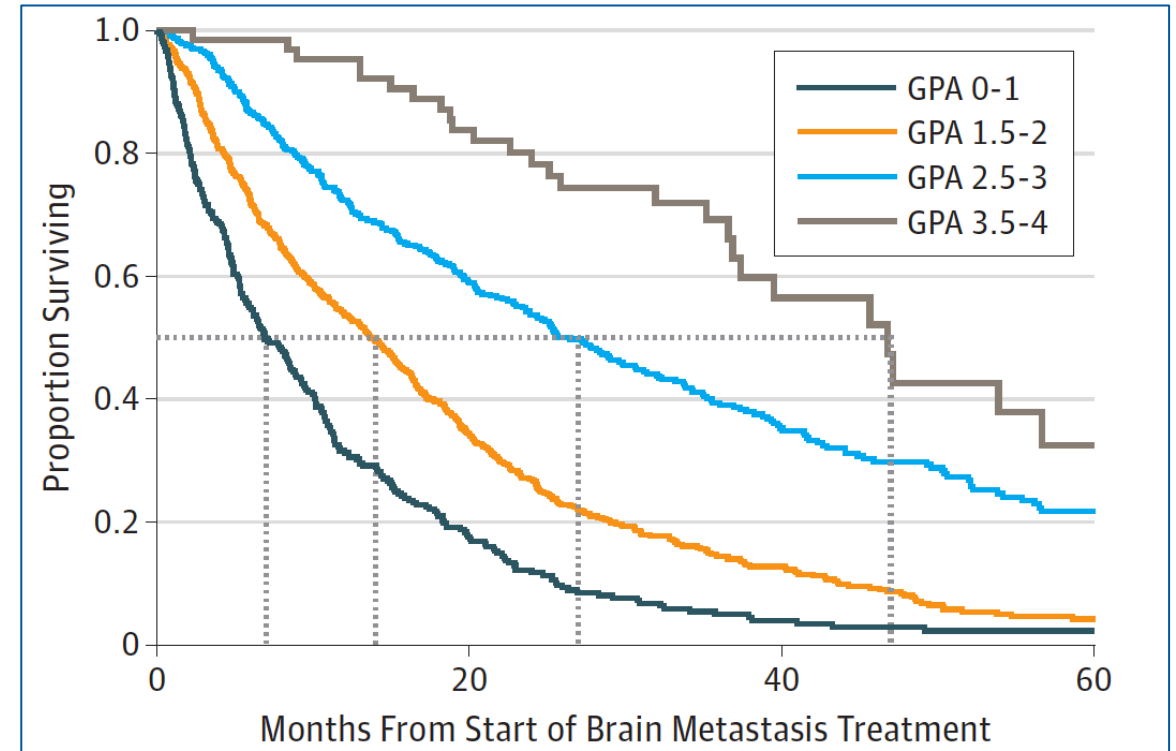| Sub-cohort	Patients	BM	TKI	ICI	Toxicity
NSCLC	N=108	68%	65%	33%	Grade 3&4: 4.4%
Melanome BM	N=145	100%	37%	61%	Grade 3&4: 7.7% Grade V: n=1
RCC	N=53	52%	68%	32%	Grade 3 N=1

- Overall low rates of sever toxicity
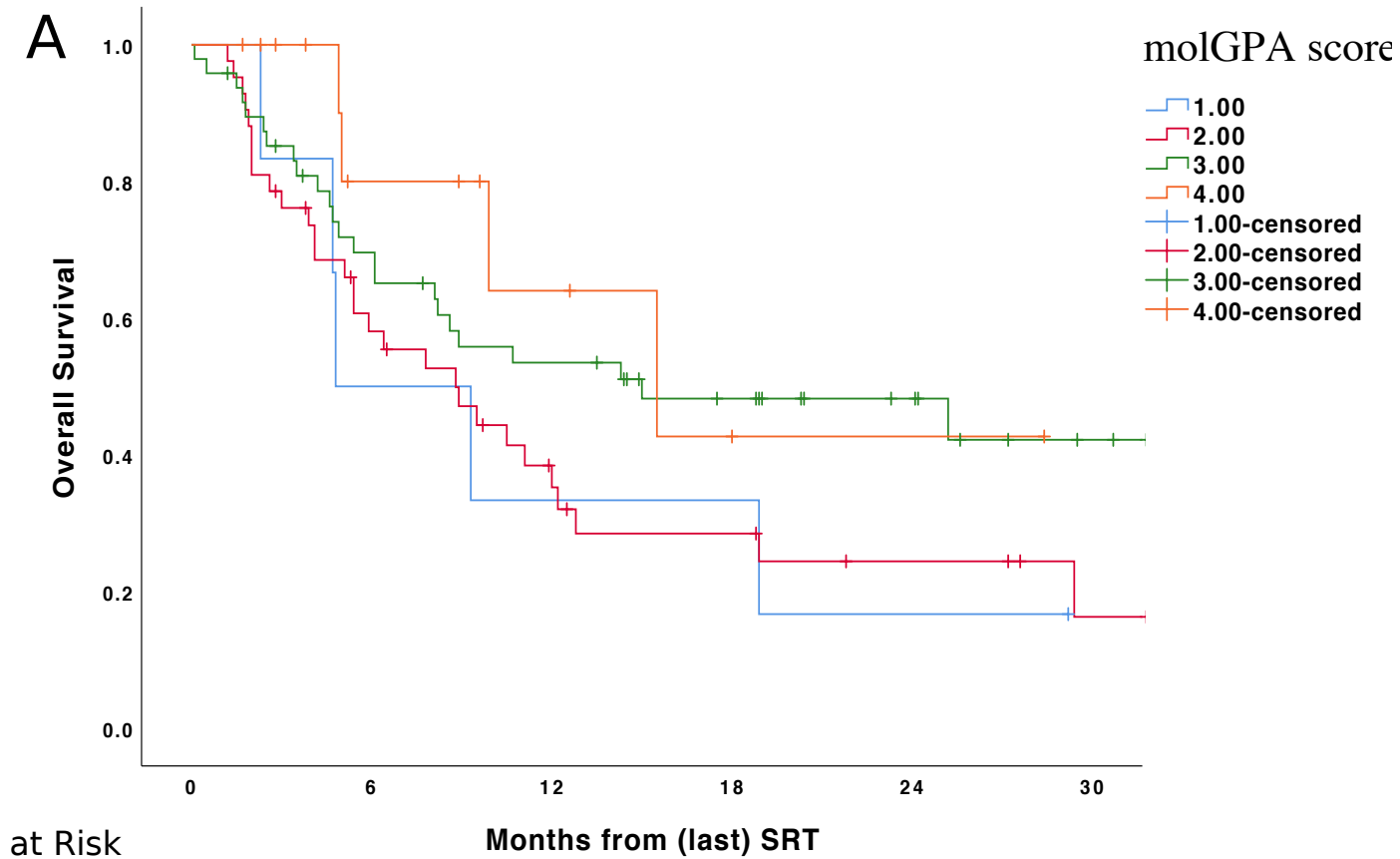
Melanoma brain metastases

RPA

Lung molGPA

> ➢ Applicability to current patients treated with IO and SRS ?

Gaspar IJROBP 1997, Sperduto JAMA 2016

Melanoma brain metastases

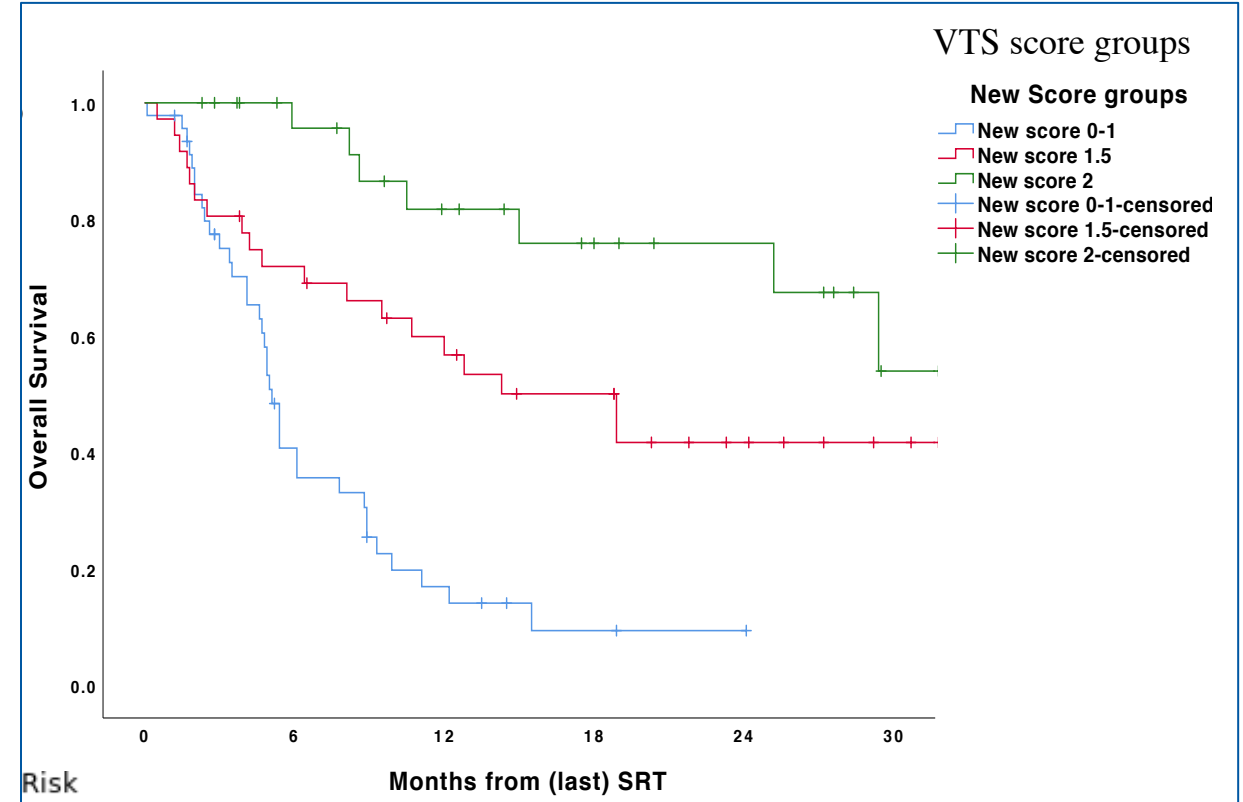| n = 110 patients	Median / n (% / range)
Age	59.4 (25-82)
ECOG 0	77 (70.0)
Number of brain metastases 1 2-4 >4	median: 2 (1-30) 47 (42.7) 53 (48.1) 10 (9.0)
BRAF status positive	57 (48.2)
extracranial metastases yes	83 (75.5)
volume of brain metastases ≥ 1.5cc <1.5cc	55 (50.0) 1.5-24.54cc 55 (50.0) 0.05-1.4cc
Concomitant systemic therapy IT TT combination	67 (60.9) 34 (30.9) 9 (8.2)

Melanoma brain metastases

- molGPA – lack of prognostic significance

Melanoma brain metastases

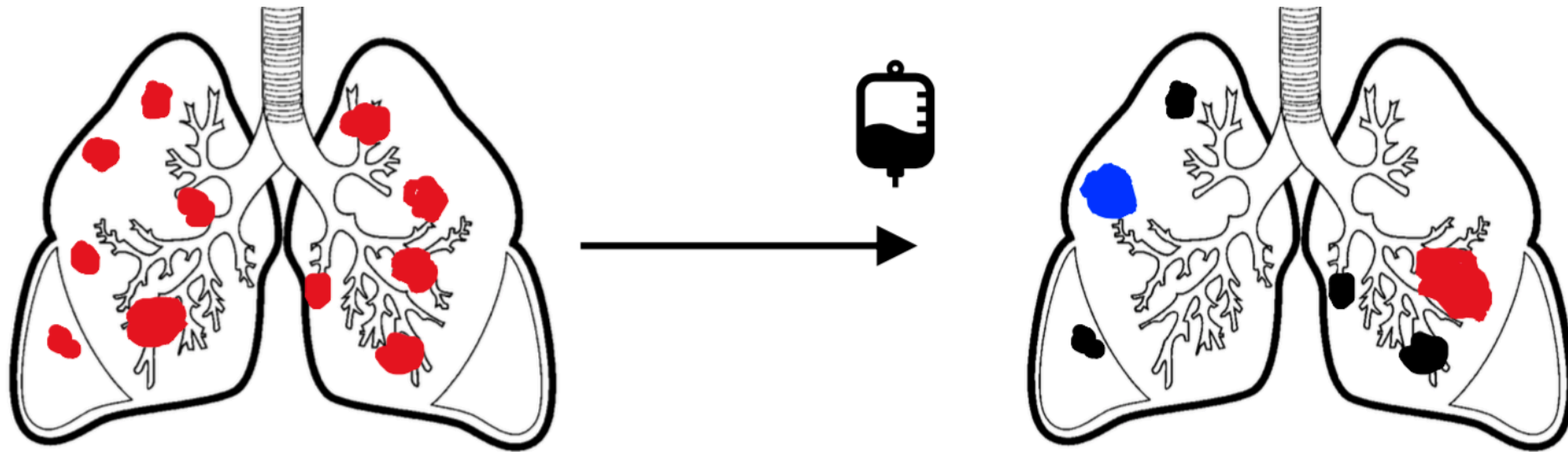## VTS: a prognostic score for OS in MBM treated with SRS and combined TKI or ICI

	0 points	0.5 points	1 point
Cumulative metastases volume	>1.5cc	<1.5cc	
Timing	synchronous	metachronous	
Systemic treatment	TT		ICI

- Prognostic scoring system adapted to local and systemic Tx

USZ Universitäts Spital Zürich   Universität Zürich UZH

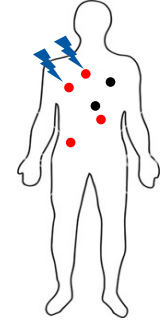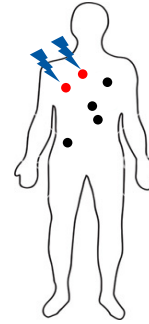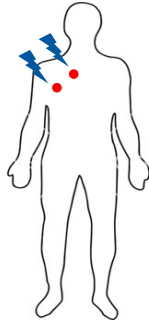# NSCLC - Induced Oligoprogression

➤ **Goal:** Restore sensitivity to current line of systemic therapy

NSCLC - Induced Oligoprogression

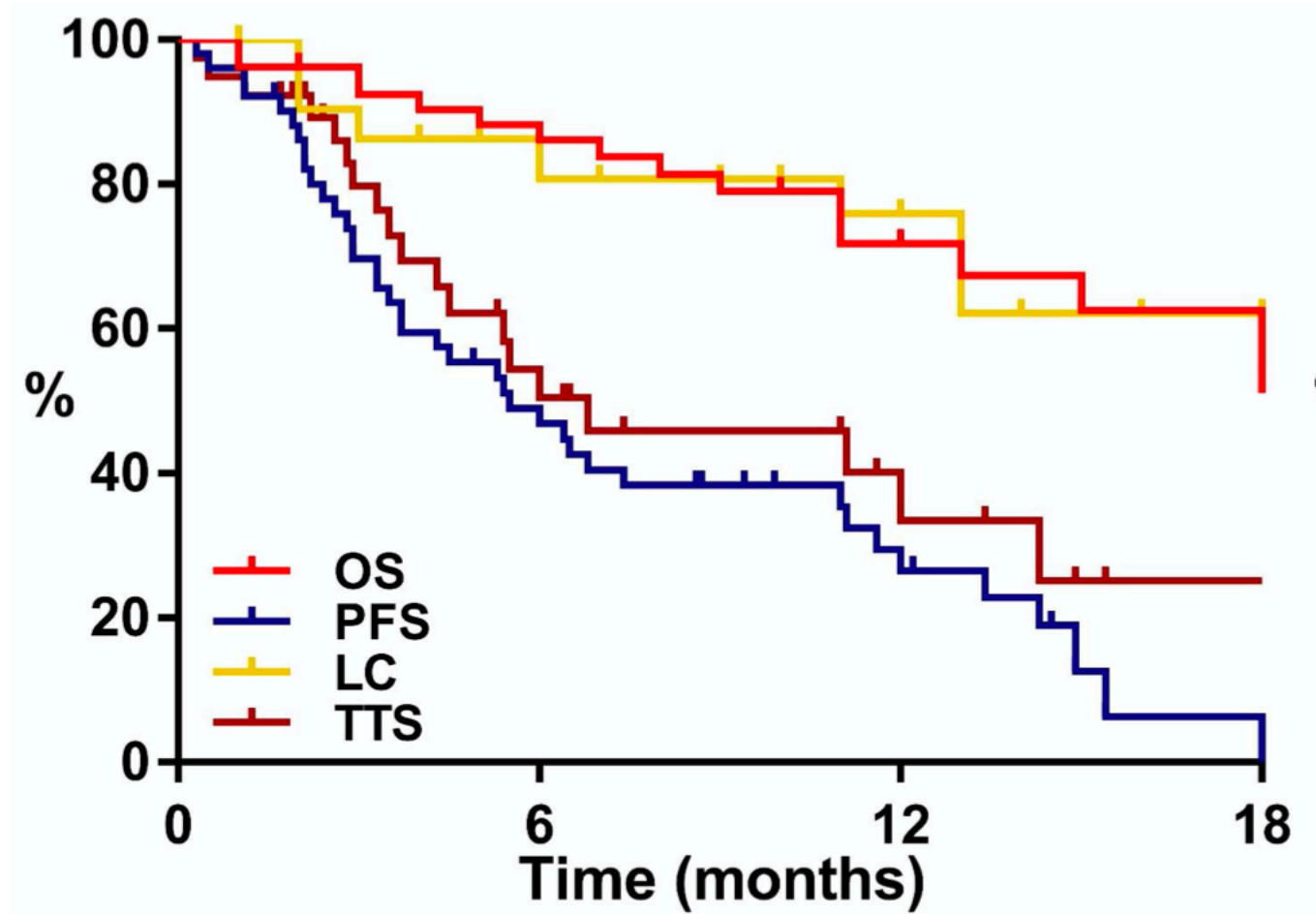| Patient characteristics	N (%), median (range)
	All patients (n=108)
Age (y)	63 (33-80)
Synchronous metastatic disease:	
Yes	81 (75)
No	27 (25)
Driver mutation:	
EGFR	49 (45)
ALK	16 (15)
ROS1	2 (2)
PD-L1	5 (5)
No	30 (28)
Unknown	5 (5)
Lines of previous systemic treatment	1 (1-5)
Presence of metastases at time of SRT:	
≤5	53 (49)
>5	55 (51)
SRT treated lesions per patient:	
Cranial	1 (1-5)
Extracranial	1 (1-3)
Extracranial	8.37 (0.54-86.10)

NSCLC - Induced Oligoprogression

SBRT of …	... **all visible** and progressive lesions	... **all progressive** lesions, not stable ones	... **clinically selected** progressive lesions
Median PFS	20 months	7 months	4.4 months
On TKI @ 1a	81%	47%	39%
OS @ 2a	64%	44%	25%

➢ Relevant proportion of pts remained on IO/TKI

Renal cell cancer

Patient characteristics	N (%), median (range) (n=53)
Age (y)	61 (range 38-84)
ECOG-PS	
0	26 (49)
1	20 (38)
Goal of SRT	
Synchronous Oligometastases	10 (19)
Oligoprogression (≤5)	10 (19)
Oligprogression (>5)	11 (21)
Palliative	22 (42)
SRT treated lesions per patient	
Cranial	2 (1-11)
Extracranial	1 (1-4)
Type of systemic therapy	
TKI	32 (60)
mTORi	4 (8)
PD-(L)1i	17 (32)

Renal cell cancer

> Favorable LC and OS

USZ Universitäts Spital Zürich   Universität Zürich UZH

Renal cell cancer

> ➢ Best OS when all metastases are treated

TOaSST prospective cohort

N=483, data entry of new patients closed since 01.09.2019

27 centers entered patients:

➢ Germany (15)

➢ Switzerland (4)

➢ Netherlands (4)

➢ Belgium (1)

➢ Spain (1)

➢ Australia (1)

➢ Austria (1)

- Follow-up to be continued