



TOP

THORACIC
ONCOLOGY
PADOVA

NON-SMALL CELL LUNG CANCER:
FOCUS ON OLIGOMETASTATIC DISEASE
AND 2017 UPDATE

March 31 - April 01, 2017
PADOVA

Caso Clinico

V Polo



Oncologia Medica 2
IOV IRCCS – Padova

*Panelists: U. Fantoni, A. Favaretto, L. Loreggian,
G. Marulli, R. Polverosi, A. Santo*

Caso clinico – F.P.

Anamnesi fisiologica:

- ✓ Maschio, 58 anni
- ✓ Tabagismo attivo, 40 *pack-years*
- ✓ Pregressa assunzione di eroina per 10 anni, sospesa da 20 anni

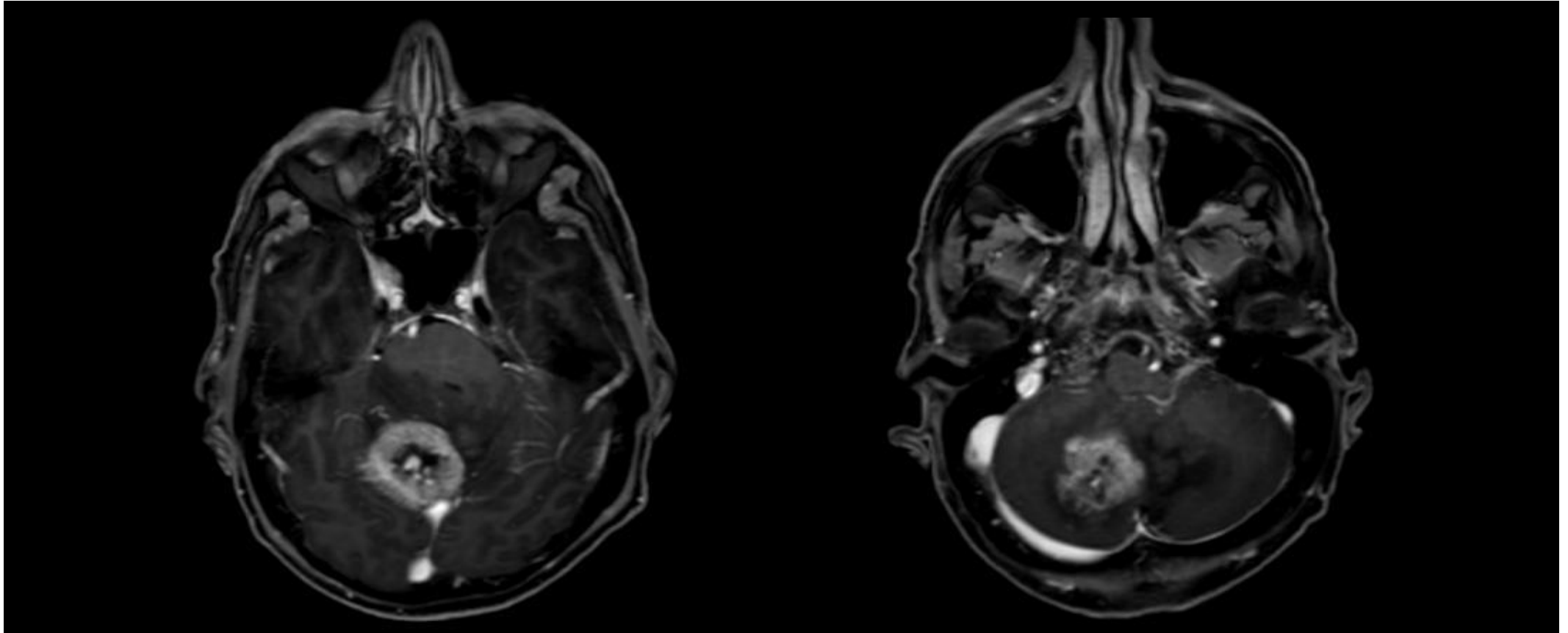
Anamnesi familiare:

- ✓ Padre: deceduto per epatocarcinoma

Anamnesi patologica remota e prossima:

- ✓ Pregresse infezioni malariche
- ✓ Calo ponderale di 10 Kg in 4 mesi. A luglio 2014 comparsa di cefalea e disartria per cui si reca in PS

Caso clinico – F.P.



21/07/2014

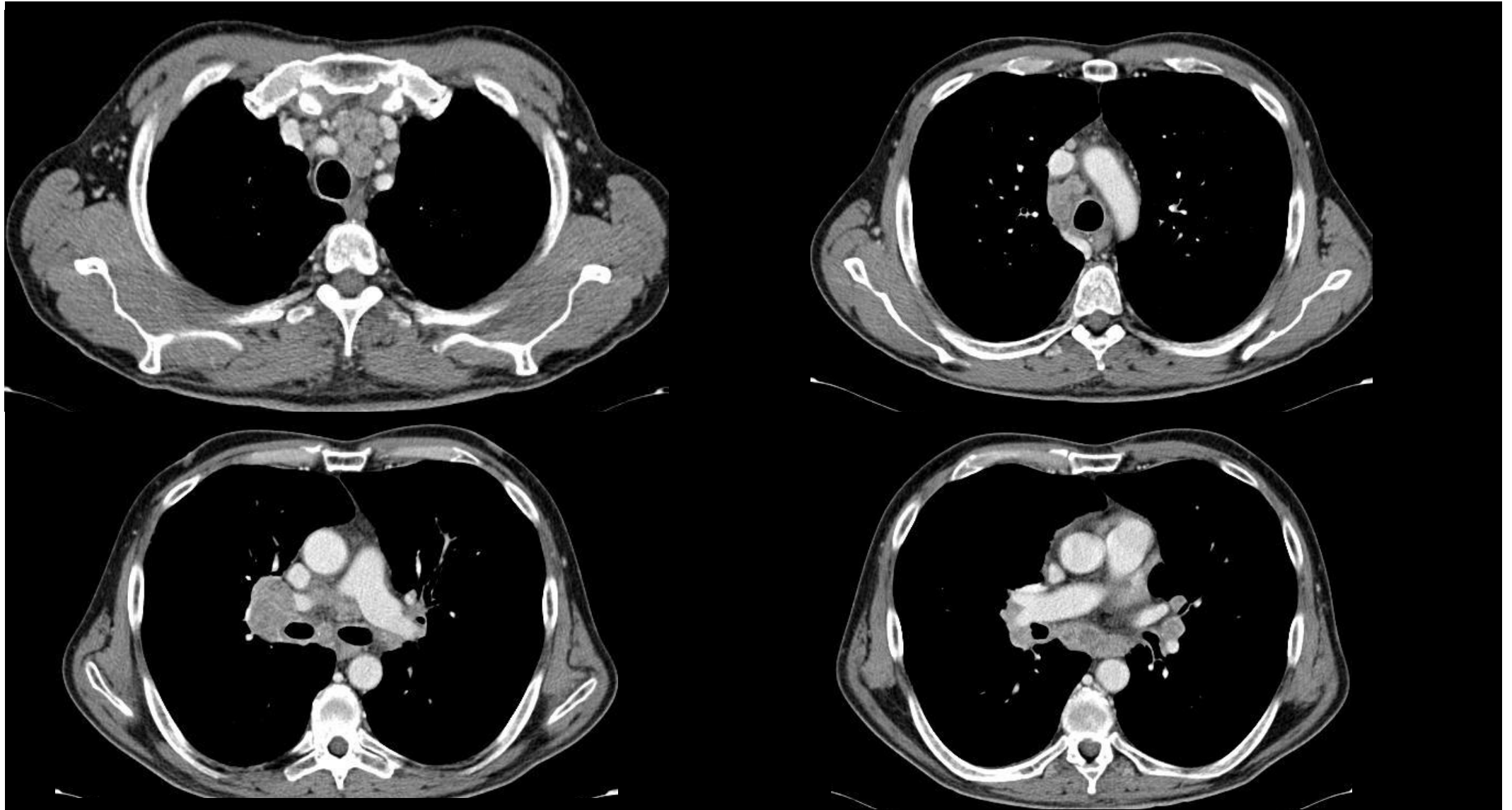
NEUROCHIRURGIA

Asportazione lesione
cerebellare dx

**Adenocarcinoma G2 con estese
aree di necrosi compatibile
con l'origine polmonare
(TTF1+, CK₇+, CK₂₀-)**

EGFR non mutato

Caso clinico – F.P.



22/08/2014

TC TORACE ADDOME CON MDC

Esteso tessuto solido mediastinico

Caso clinico – F.P.



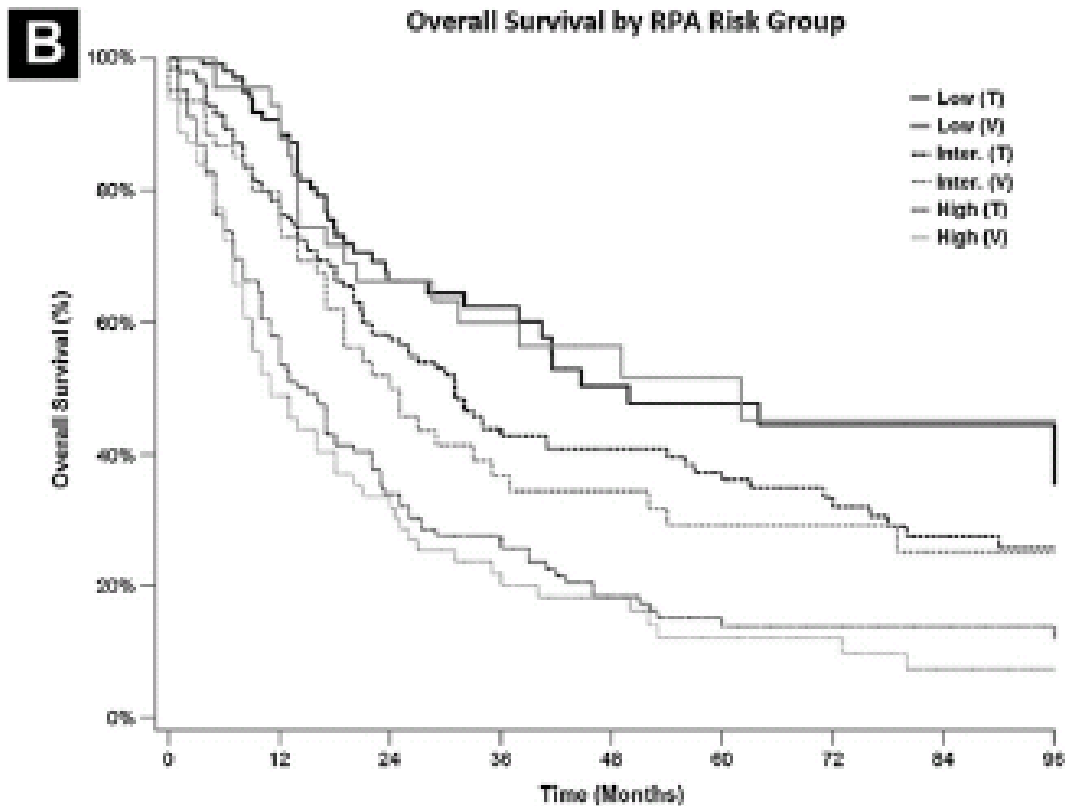
22/08/2014

TC TORACE ADDOME CON MDC

Enfisema parasettale, nodo parenchimale al LSD

An Individual Patient Data Metaanalysis of Outcomes and Prognostic Factors After Treatment of Oligometastatic Non–Small-Cell Lung Cancer

Allison B. Ashworth,¹ Suresh Senan,² David A. Palma,¹ Marc Riquet,³
 Yong Chan Ahn,⁴ Umberto Ricardi,⁵ Maria T. Congedo,⁶ Daniel R. Gomez,⁷
 Gavin M. Wright,⁸ Giulio Melloni,⁹ Michael T. Milano,¹⁰ Claudio V. Sole,¹¹
 Tommaso M. De Pas,¹² Dennis L. Carter,¹³ Andrew J. Warner,¹
 George B. Rodrigues¹



Number at risk:	0	12	24	36	48	60	72	84	96
L (T):	101	79	45	30	19	16	11	8	5
L (N):	45	35	23	17	12	8	5	3	3
I (T):	140	107	72	45	25	22	24	16	15
I (N):	61	46	25	16	12	9	8	6	5
H (T):	122	67	37	28	17	12	10	9	7
H (N):	62	29	20	12	10	6	5	3	1

Log-rank: $P < .001$

LOW RISK (5-year OS: 47.8%):

Metachronous metastases

INTERMEDIATE RISK (5-year OS: 36.2%):

Synchronous metastases and NO disease

HIGH RISK (5-year OS 13.8%):

Synchronous metastases and N1/2 disease

Caso clinico – F.P.

Settembre 2014

DISCUSSIONE MULTIDISCIPLINARE

- Stadiazione: cT1N3M1
- Dato il carico di malattia si soprassiede a RT cerebrale
- CT di 1[^] linea a base di Carboplatino e Pemetrexed con rivalutazione radiologica dopo 4 cicli



- **Necessari altri esami di stadiazione?**
- **Ruolo della RT adiuvante a livello cerebrale?**
- **RT whole brain o radiocirurgia stereotassica?**

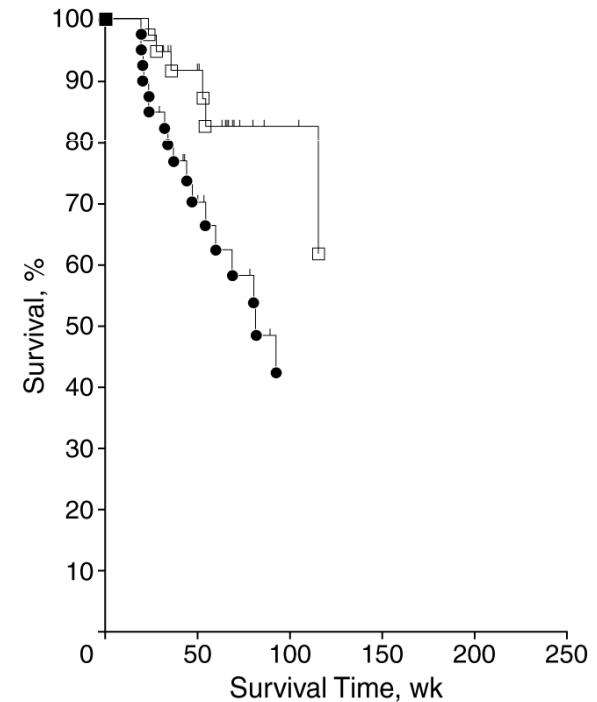
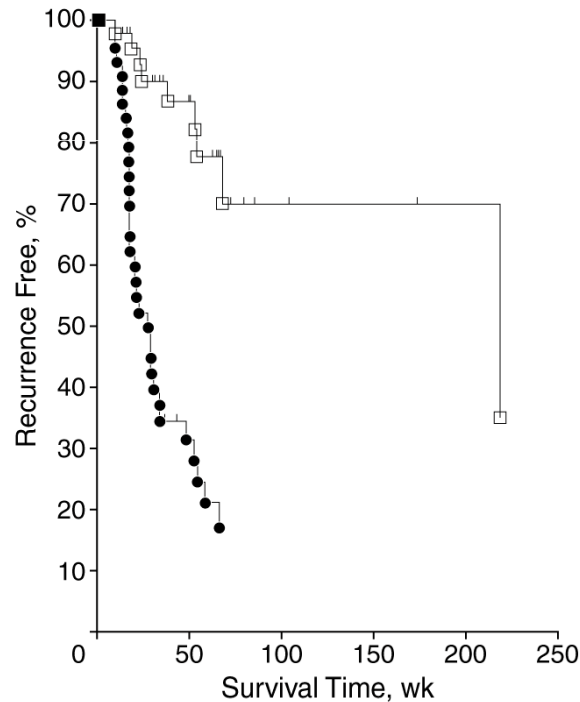
JAMA 1998

Postoperative Radiotherapy in the Treatment of Single Metastases to the Brain. A Randomized Trial.

Patchell RA *et al*

□ WBRT

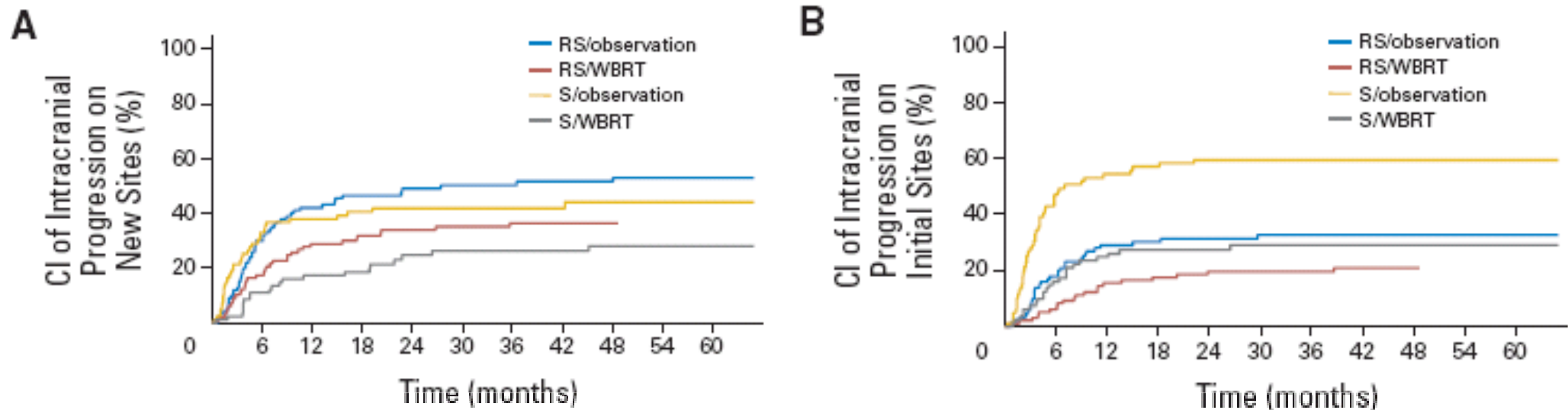
● Observation



- The recurrence rate of tumor anywhere in the brain was significantly less in the WBRT group and time to any brain recurrence was also significantly longer in the WBRT group
- No difference in OS, but postoperative RT prevented death due to neurological causes

Adjuvant Whole-Brain Radiotherapy Versus Observation After Radiosurgery or Surgical Resection of One to Three Cerebral Metastases: Results of the EORTC 22952-26001 Study

Martin Kocher, Riccardo Soffietti, Ufuk Abacioglu, Salvador Villà, Francois Fauchon, Brigitta G. Baumert, Laura Fariselli, Tzahala Tzuk-Shina, Rolf-Dieter Kortmann, Christian Carrie, Mohamed Ben Hassel, Mauri Kouri, Egils Valeinis, Dirk van den Berge, Sandra Collette, Laurence Collette, and Rolf-Peter Mueller

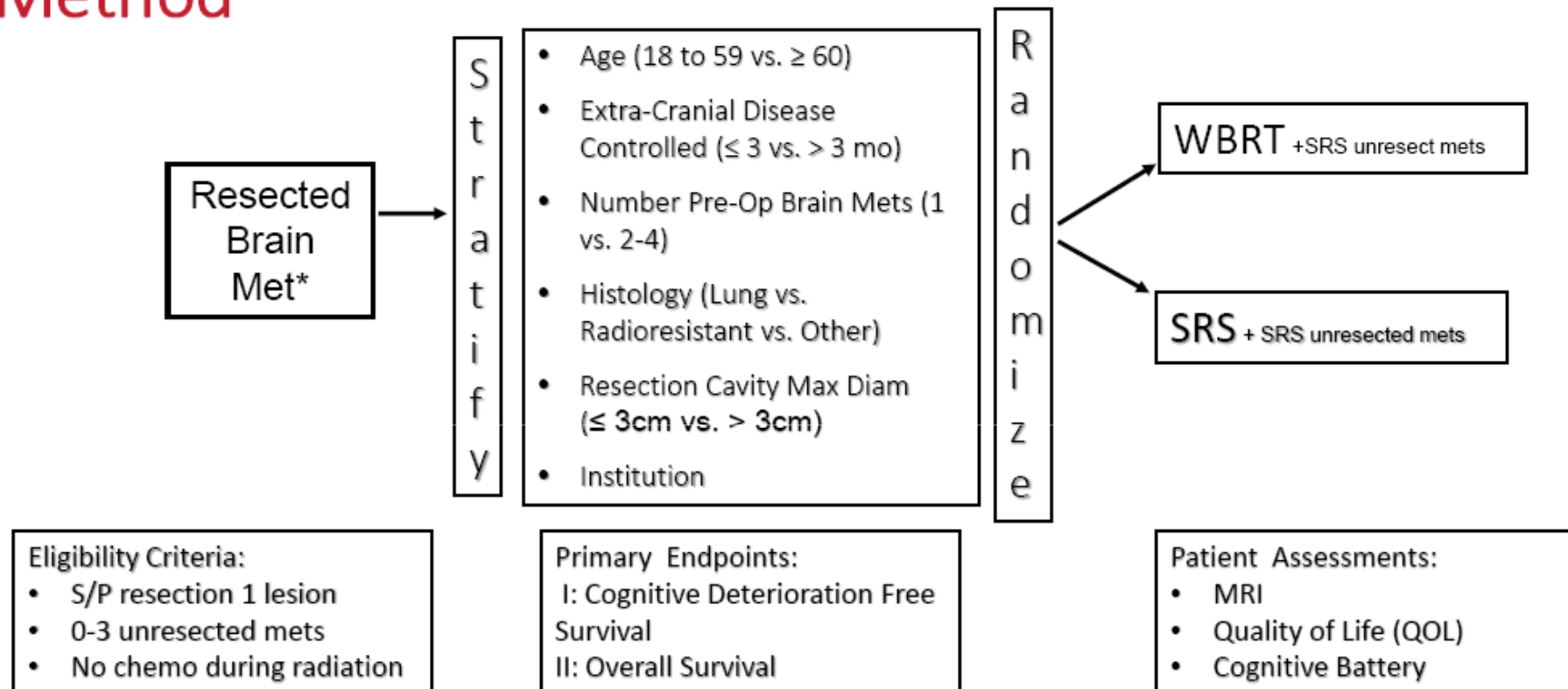


- Standard adjuvant WBRT reduces the probability of intracranial relapses from nearly 80% to approximately 50%
- No difference in OS
- No difference in survival with functional independence (Time to PS > 2)

N107C/CEC.3: A Phase III Trial of Post-Operative Stereotactic Radiosurgery (SRS) Compared with Whole Brain Radiotherapy (WBRT) for Resected Metastatic Brain Disease

P. D. Brown^{1,2}, K. V. Ballman³, J. Cerhan¹, S. K. Anderson¹, X. W. Carrero¹, A. C. Whitton⁴, J. Greenspoon⁴, I. F. Parney¹, N. N. Laack¹, J. B. Ashman⁵, J. P. Bahary⁶, C. G. Hadjipanayis⁷, J. J. Urbanic⁸, F. G. Barker II⁹, E. Farace¹⁰, D. Khuntia¹¹, C. Giannini¹, J. C. Buckner¹, E. Galanis¹, and D. Roberge⁶

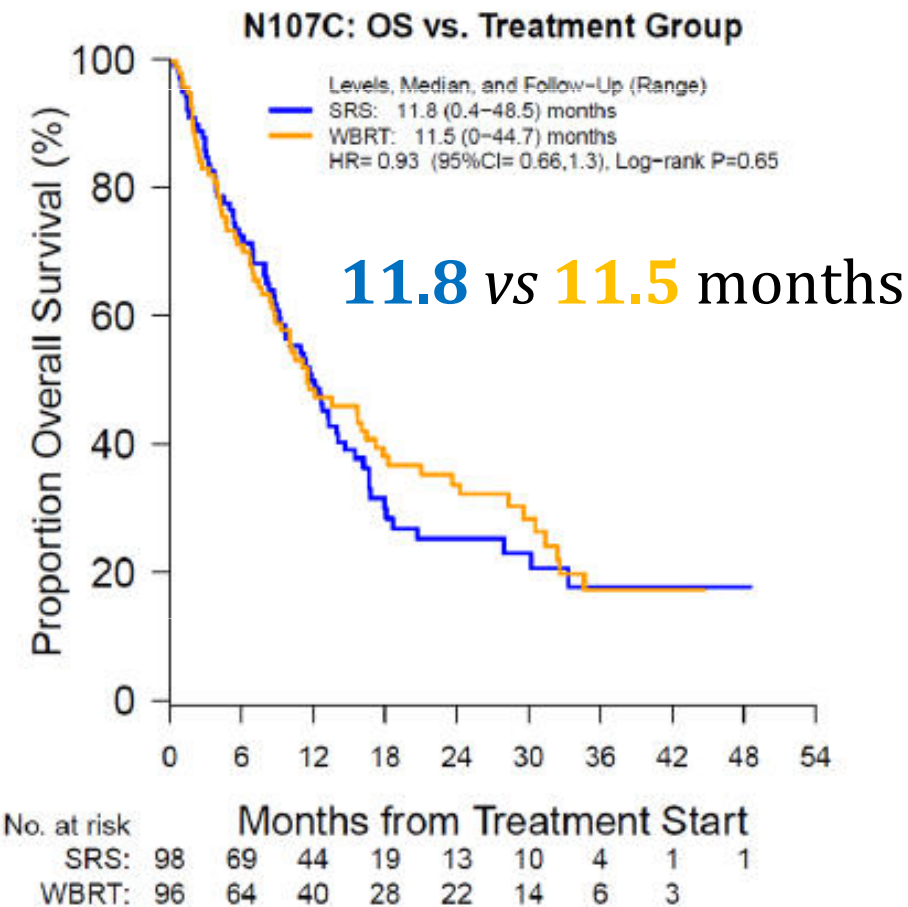
Method



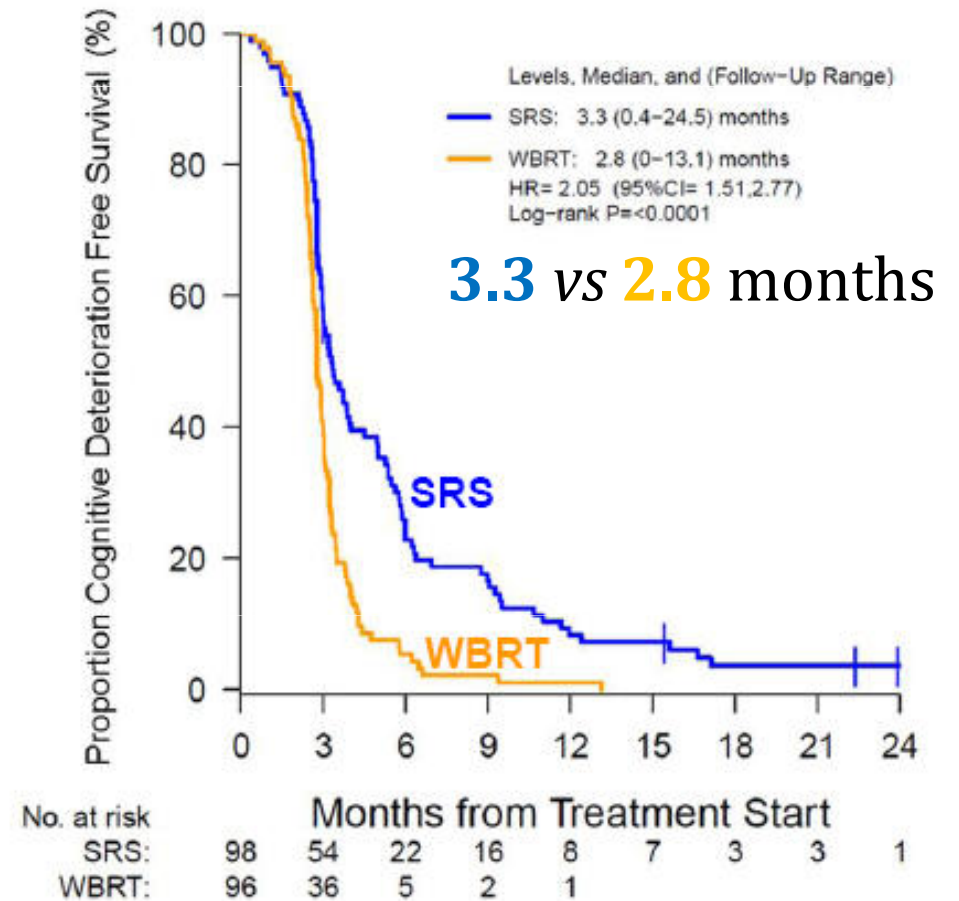
*194 patients, 59% Lung Primary Tumor, 77% single metastasis

Results — WBRT — SRS

No Difference in Survival

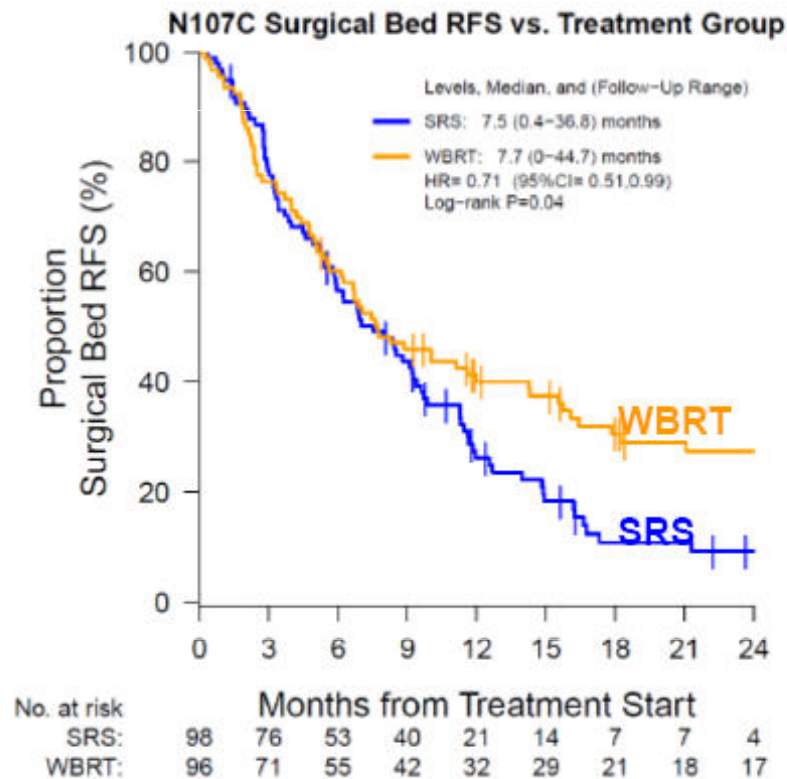


Worse Cognitive Function with WBRT



Results

Surgical bed control similar, although long-term better with WBRT



However, with WBRT...

- Worse quality of life (QOL)
- More toxicity
- Longer treatment course and delayed systemic therapy

and higher overall intracranial tumor control with WBRT

Caso clinico – F.P.

Settembre 2014

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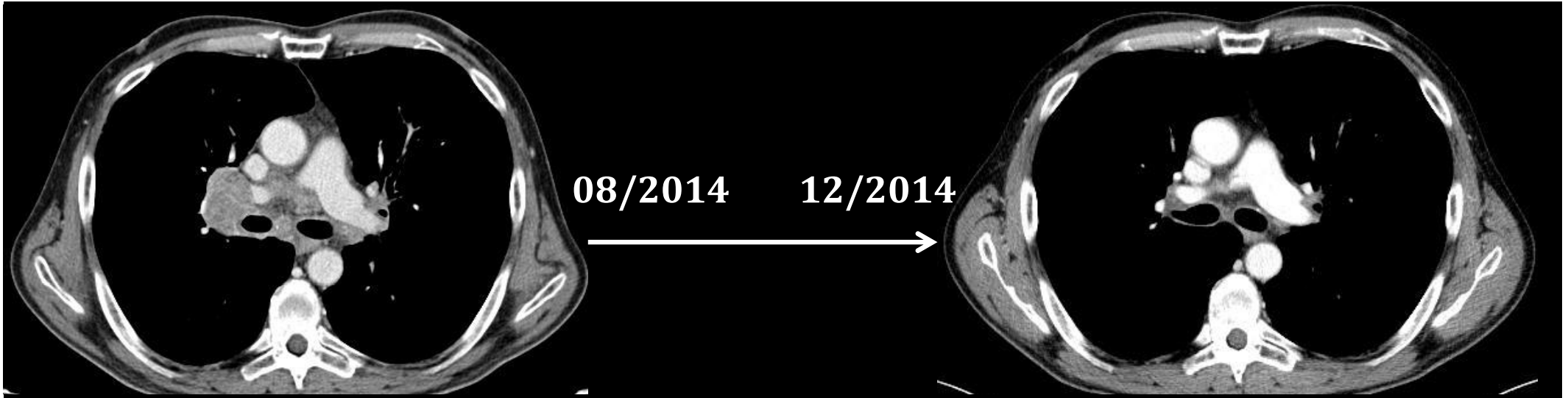
Settembre-Dicembre 2014

1[^] LINEA CT

4 cicli

Carboplatino-Pemetrexed

Caso clinico – F.P.



08/2014 → 12/2014



Dicembre 2014

TC TORACE ADDOME CON MDC E RMN CEREBRALE CON MDC
Non più evidenti le linfadenomegalie mediastiniche. Più sfumato
l'addensamento polmonare. Non lesioni encefaliche.

Caso clinico – F.P.

Gennaio 2015

DISCUSSIONE MULTIDISCIPLINARE

- Dato il tempo intercorso si soprassiede a RT cerebrale
- Data l'ottima risposta si propone RT mediastinica
- In attesa di iniziare RT, si completano i 6 cicli di CT



- **Necessaria PET-TC di valutazione della risposta e prima del trattamento loco-regionale?**

Gennaio-Febbraio 2015

1^ LINEA CT

5° e 6° ciclo

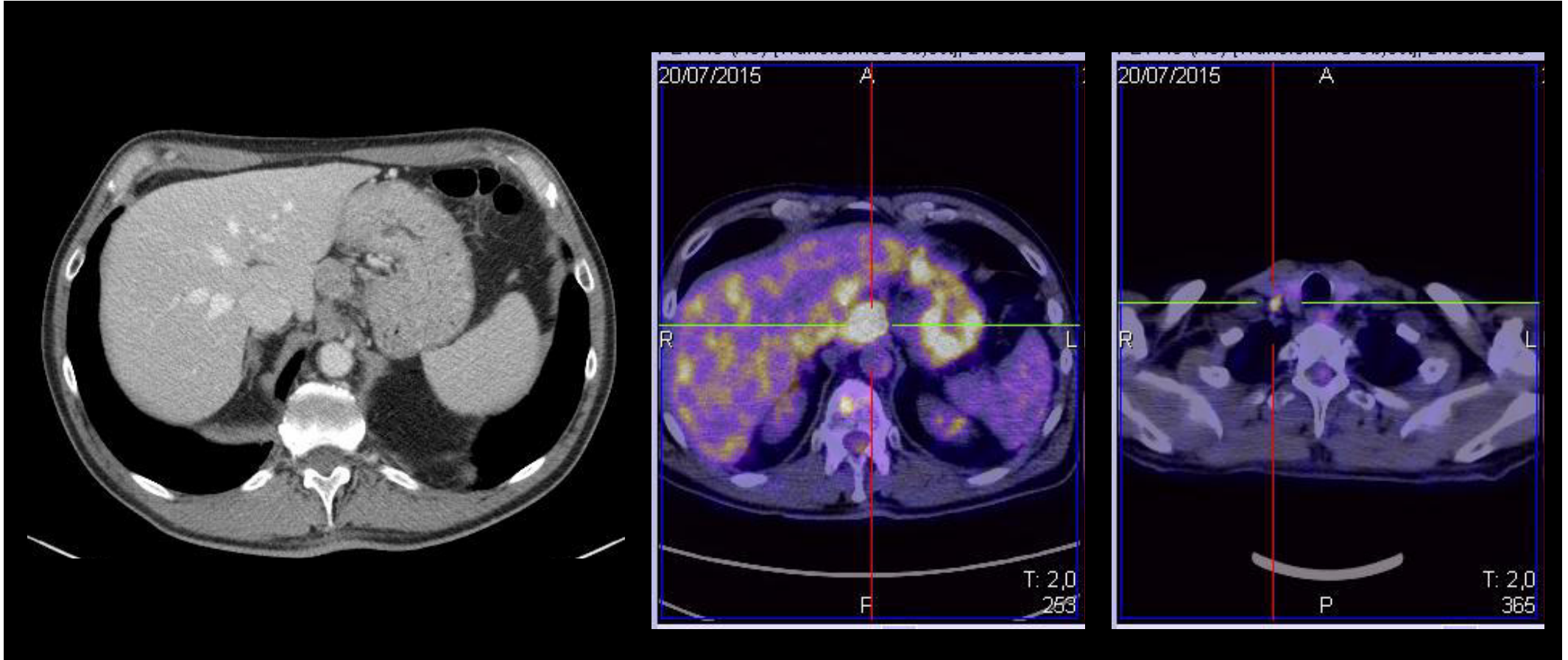
Carboplatino-Pemetrexed

Aprile-Maggio 2015

RT MEDIASTINICA

64 Gy in 32 frazioni

Caso clinico – F.P.



Luglio 2015

**TC TOTAL BODY CON MDC E PET-
TC**

Assenza di malattia a livello toracico.
Sospetto di malattia in
2 sedi linfonodali

31/07/2015

**BIOPSIA LINFONODO
SOVRACLAVEARE DX**
Adenocarcinoma compatibile
con l'origine polmonare

Caso clinico – F.P.

Gennaio 2015

DISCUSSIONE MULTIDISCIPLINARE

- Data la presenza di 2 sedi di malattia ed il tempo intercorso dalla fine del trattamento precedente, si intraprende CT cui associare eventualmente RT in base alla risposta (trattamento sequenziale non concomitante)
- Data la buona tolleranza al trattamento precedente si intraprende CT a base di Carboplatino e Paclitaxel settimanale



- **Ruolo dei trattamenti loco-regionali in questo setting?**

REVIEW ARTICLE



Role of Local Ablative Therapy in Patients with Oligometastatic and Oligoprogressive Non-Small Cell Lung Cancer



Chul Kim, MD, MPH, Chuong D. Hoang, MD, Aparna H. Kesarwala, MD, PhD,
David S. Schrump, MD, MBA, Udayan Guha, MD, PhD, Arun Rajan, MD*

Thoracic and Gastrointestinal Oncology Branch and Radiation Oncology Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland

Received 16 March 2016; revised 23 August 2016; accepted 17 October 2016
Available online - 22 October 2016

Caso clinico – F.P.

Gennaio 2015

DISCUSSIONE MULTIDISCIPLINARE

- Data la presenza di 2 sedi di malattia ed il tempo intercorso dalla fine del trattamento precedente, si intraprende CT cui associare eventualmente RT in base alla risposta (trattamento sequenziale non concomitante)
- Data la buona tolleranza al trattamento precedente si intraprende CT a base di Carboplatino e Paclitaxel settimanale



- **Ruolo dei trattamenti loco-regionali in questo setting?**

Agosto-Ottobre 2015

2[^] LINEA CT

8 somministrazioni settimanali
Carboplatino-Paclitaxel

Novembre 2015

**TC TOTAL BODY CON MDC
E PET-TC**

Assenza di captazioni
patologiche

Caso clinico – F.P.

Novembre 2015

DISCUSSIONE MULTIDISCIPLINARE

➤ Data l'assenza di captazioni si soprassiede a RT e si completa CT

Novembre-Dicembre 2015

2^ LINEA CT

6 somministrazioni settimanali

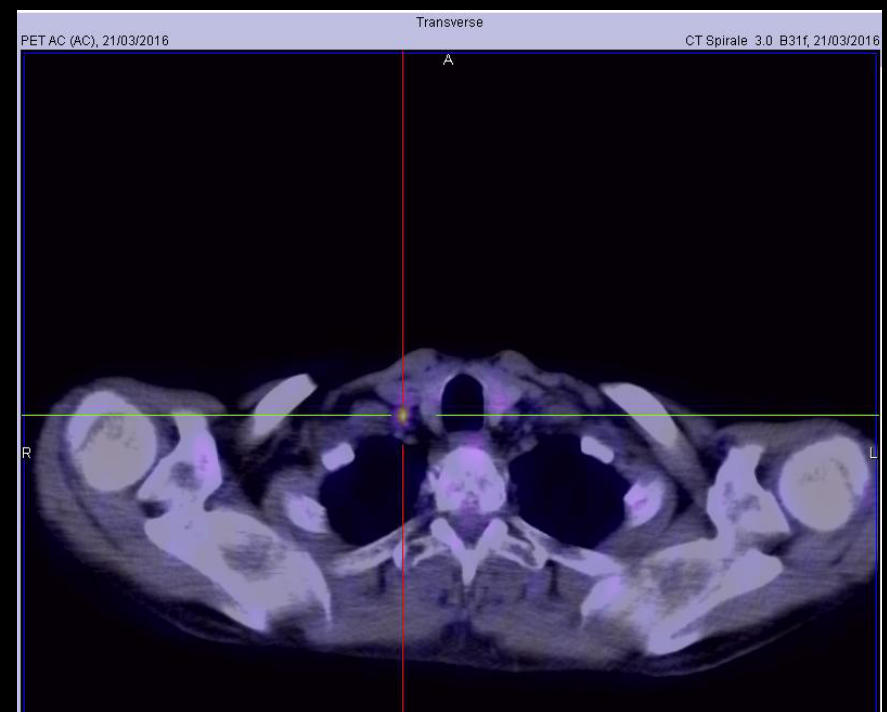
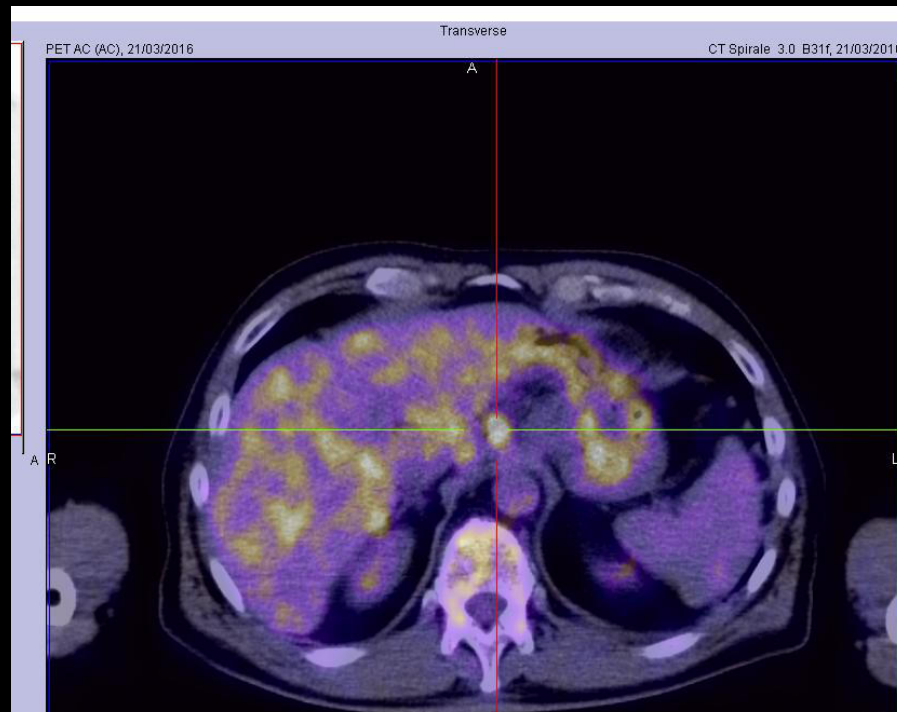
Carboplatino-Paclitaxel

Marzo 2016

PET-TC

Ripresa di malattia

nelle 2 sedi note



Caso clinico – F.P.

Marzo 2016

DISCUSSIONE MULTIDISCIPLINARE

- Dato l'andamento indolente della malattia e la storia di fumo si intraprende terapia a base di Nivolumab (EAP)

Maggio-Giugno 2016

3[^] LINEA TERAPIA

4 somministrazioni

Nivolumab

(sospeso per tossicità)

Agosto-Dicembre 2016

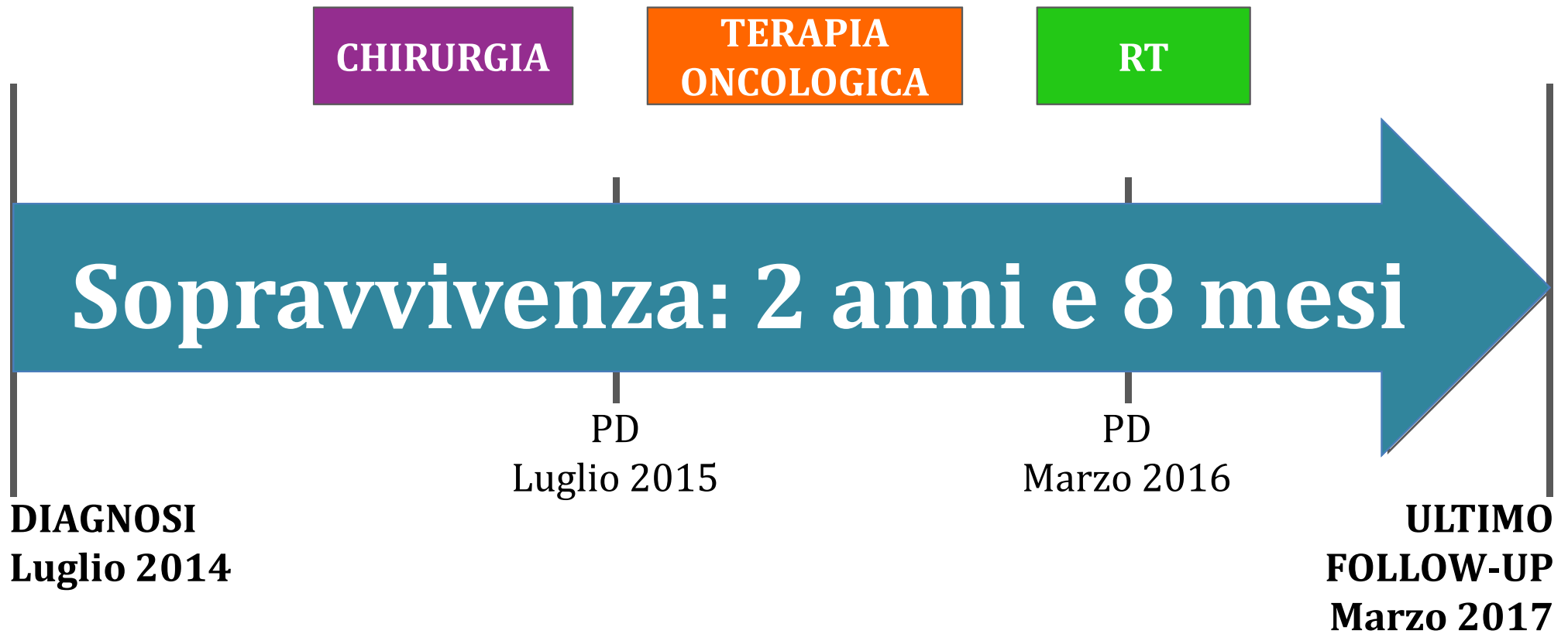
TC TOTAL BODY CON MDC

Risposta di malattia



- **L'immunoterapia è da preferirsi ai trattamenti loco-regionali vista l'efficacia e il profilo di tossicità?**
- **Come proseguire il follow-up: mediante TC o PET-TC?**

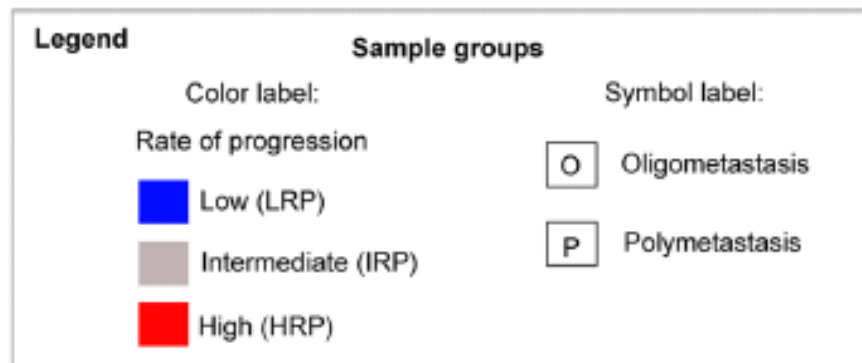
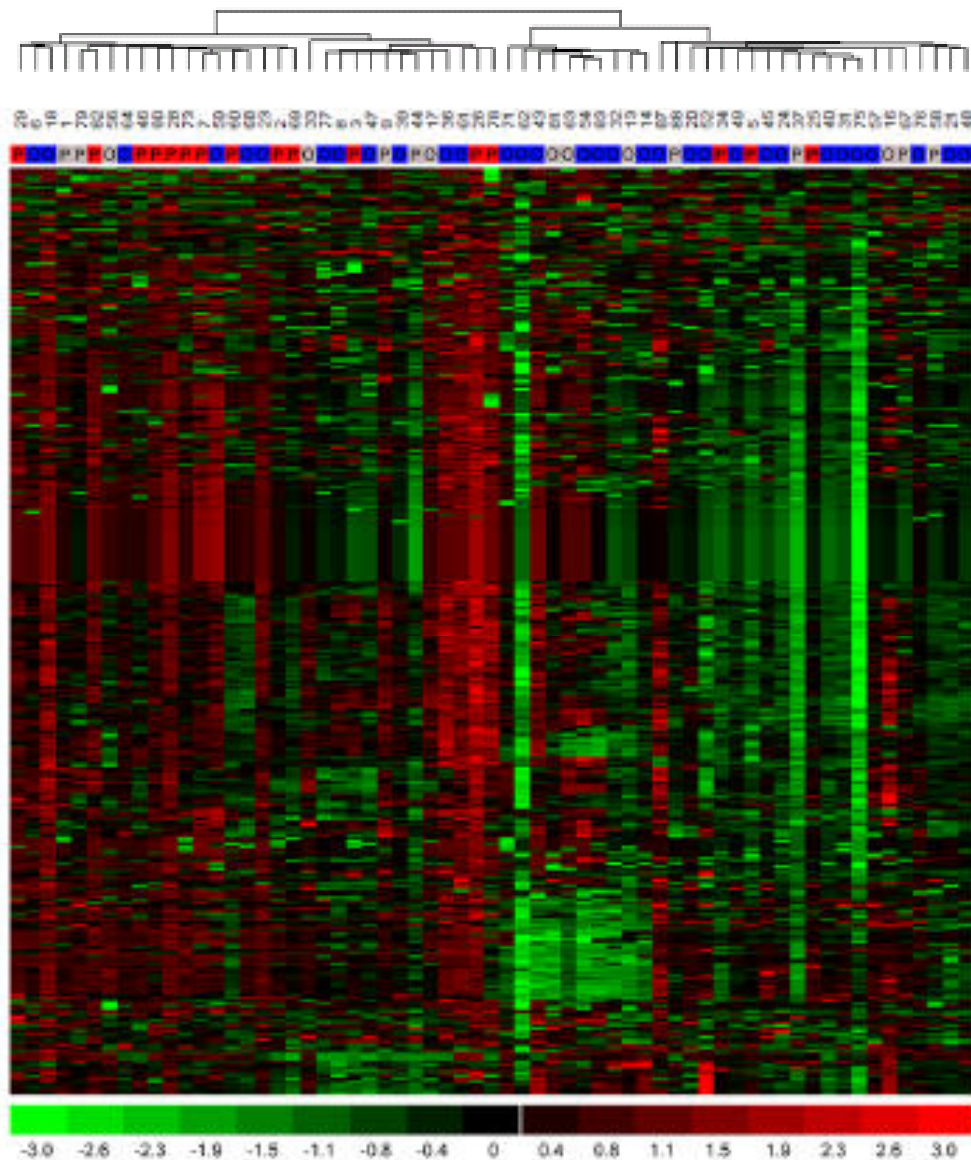
Caso clinico – F.P.



- Vale la pena caratterizzare dal punto di vista molecolare questa malattia?

Oligo- and Polymetastatic Progression in Lung Metastasis(es) Patients Is Associated with Specific MicroRNAs

Yves A. Lussier^{1,2,3,4,5,6,7†*}, Nikolai N. Khodarev^{3,8,9}, Kelly Regan^{4,9}, Kimberly Corbin^{8,9}, Haiquan Li^{4,9}, Sabha Ganai⁹, Sajid A. Khan⁹, Jennifer Gnerlich⁹, Thomas E. Darga⁹, Hanli Fan⁴, Oleksiy Karpenko⁶, Philip B. Paty¹⁰, Mitchell C. Posner⁹, Steven J. Chmura⁸, Samuel Hellman^{3,8}, Mark K. Ferguson⁹, Ralph R. Weichselbaum^{1,3,8*}



- We identified differential microRNA expression patterns between patients with low and high rates of metastatic progression
- Oligo- and poly- metastasis are distinct entities at the clinical and molecular level



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NON-SMALL CELL LUNG CANCER:
FOCUS ON OLIGOMETASTATIC DISEASE
AND 2017 UPDATE

March 31 - April 01, 2017
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***Grazie per
l'attenzione***



Local consolidative therapy versus maintenance therapy or observation for patients with oligometastatic non-small-cell lung cancer without progression after first-line systemic therapy: a multicentre, randomised, controlled, phase 2 study

Daniel R Gomez, George R Blumenschein Jr, Jack Lee, Mike Hernandez, Rong Ye, D Ross Camidge, Robert C Doebele, Ferdinandos Skoulidis, Laurie E Gaspar, Don L Gibbons, Jose A Karam, Brian D Kavanagh, Chad Tang, Ritsuko Komaki, Alexander V Louie, David A Palma, Anne S Tsoo, Boris Sepes, William N Williams, Jianjun Zhang, Qiuling Shi, Xin Shelley Wong, Stephen G Swisher*, John V Heymach*

	Local consolidative therapy (n=25)	Maintenance treatment (n=24)
Age		
Mean (SD)	64 (10)	63 (10)
Median (IQR)	63 (43-83)	61 (43-80)
Sex		
Male	12 (48%)	10 (42%)
Female	13 (52%)	14 (58%)
Ethnicity		
White	20 (80%)	18 (75%)
Black	2 (8%)	3 (12%)
Hispanic	2 (8%)	0
Asian	1 (4%)	3 (12%)
Tumour histology		
Adenocarcinoma	21 (84%)	18 (75%)
Adenosquamous	0	1 (4%)
NSCLC, NOS	1 (4%)	0
Poorly differentiated NSCLC, NOS	2 (8%)	0
SCC	1 (4%)	4 (17%)
Sarcomatoid carcinoma	0	1 (4%)
Time of metastases		
Metachronous	1 (4%)	2 (8%)
Synchronous	24 (96%)	22 (92%)
Non-regional metastases after first-line systemic therapy		
0-1	17 (68)	15 (62)
2-3	8 (32)	9 (38)
Response to first-line chemotherapy		
Partial response or complete response	9 (36%)	9 (38%)
Stable disease	16 (64%)	15 (62%)
CNS metastases		
No	18 (72%)	18 (75%)
Yes	7 (28%)	6 (25%)
Nodal status		
N0/N1	12 (48%)	11 (46%)
N2/N3	13 (52%)	13 (54%)
Mutation type		
None	20 (80%)	21 (88%)
EGFR	3 (12%)	3 (12%)
EML4/ALK	2 (8%)	0

NSCLC=non-small-cell lung cancer, NOS=not otherwise specified, SCC=squamous cell carcinoma.

Table 1: Patient characteristics

