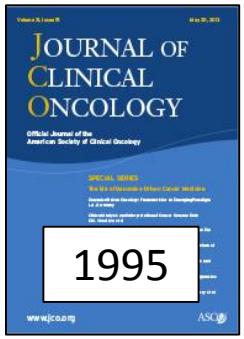
La malattia oligometastatica: ruolo della RT nel 2017

Marta Scorsetti
Radiotherapy and Radiosurgery Dep.
Humanitas Clinical and Research Hospital
Department of Biomedical Sciences,
Humanitas University, Milan, Italy

Oligometastases



Hellman S,
Weichselbaum RR.

EDITORIAL

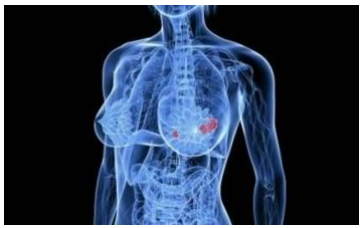
Oligometastases

CANCER TREATMENT is based on an often unstated paradigm of disease pathogenesis. Since 1894, when W.S. Halsted[1,2] clearly elucidated a mechanism of breast cancer spread and used it to design and support the radical mastectomy, surgical and radiotherapeutic approaches to most cancers have been based on this theory. The Halsted theory proposed that cancer spread is orderly, extending in a contiguous fashion from the primary tumor through the lymphatics to the lymph nodes and then to distant sites. Radical en bloc surgery, such as radical neck dissection in continuity with removal of the primary tumor, radical hysterectomy, and primary and regional irradiation for a variety of tumor sites are all based on this notion of cancer spread. More recently, another hypothesis has gained prominence, also first suggested with regard to breast cancer.[3-5] This systemic hypothesis proposes that clinically apparent can
temic disease. Small tumors are just
manifestation of such systemic disease, wh
to metastasize, has already metastasized. L
involvement is not orderly contiguous ex
rather a marker of distant disease. Systemic
are multiple and widespread, and when sub
referred to as micrometastases. Under the
stances, treatment of local or regional diseas
affect survival.

more about the multistep nature of the development of malignancy.[11-13] Once tumors become invasive, they may gradually acquire the properties necessary for efficient and widespread metastatic spread.[14] Therefore the likelihood, number, and even sites of metastases may reflect the state of tumor development. This suggests that there are tumor states intermediate between purely localized lesions and those widely metastatic. Such clinical circumstances are not accounted for by either the contiguous or the systemic hypotheses. The systemic hypothesis is binary: metastases either do or do not exist. If present, even if microscopic, they are extensive and widespread. The contiguous hypothesis considers systemic metastases to occur only after nodal disease; but when they occur, they are also blood borne, extensive, and widespread.

From considerations of these theories of cancer dissem-

An oligometastatic state is an "**intermediate state between purely localized lesions and those widely metastatic**". The state was expounded to be "**amenable to a curative therapeutic strategy**" and "**amenable to localized therapy**".



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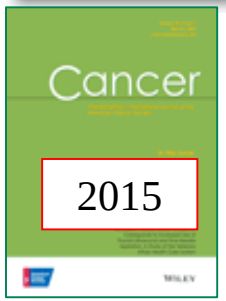
Oligometastases



The Rise in Metastasectomy Across Cancer Types Over the Past Decade

Edmund K. Bartlett, MD; Kristina D. Simmons, PhD; Heather Wachtel, MD; Robert E. Roses, MD; Douglas L. Fraker, MD; Rachel R. Kelz, MD; and Giorgos C. Karakousis, MD

Historically, the **role of surgery in patients with metastatic cancer** was predominately limited to **palliative or emergent operations**.

By the 1980s, a few centers were consistently performing surgical resections for select patients with metastatic cancer and reporting promising results. In addition, theories of cancer biology began to suggest that **in a subset of patients, oligometastatic disease might indeed represent the entire clinically relevant disease burden.**

In these cases, **complete resection was associated with prolonged disease-free survival and**, in some patients, **clinical cure**. As a result, in selected patients surgical resection is now considered for the treatment of oligometastatic disease to most anatomic sites from many different primary cancer types

Oligometastases

Of the 5 most common cancer types, **colorectal cancer** has been the subject of the largest number of studies of metastasectomy with demonstrated **5-year survival rates of >50%, and 10-year survival ranging from 17% to 36%.**

The role of metastasectomy in **other cancer types remains more controversial**. Multiple metastasectomy series have now been published for **breast cancer, lung cancer, and melanoma**, all of which with relatively favorable survival in carefully selected patients, but the series are smaller and less frequently report long-term follow-up.

TABLE 1. National Estimates of Admissions for Metastasectomy by Cancer Type, 2000 Through 2011

	Colorectal Cancer		Lung Cancer		Breast Cancer		Melanoma	
	No.	95% CI	No.	95% CI	No.	95% CI	No.	95% CI
All admissions	87,407	(86,307-88,507)	58,245	(57,453-59,036)	26,271	(25,672-26,870)	20,298	(19,897-20,699)
Mean age (SE), y	62.2	0.10	61.4	0.10	56.8	0.17	58.1	0.22
Female sex	46.0%	(45.3%-46.8%)	45.8%	(44.9%-46.7%)	99.4%	(99.2%-99.6%)	33.6%	(32.2%-35.1%)
Liver metastasectomy	41,312	(40,500-42,125)	503	(405-601)	1663	(1486-1839)	550	(448-652)
Lung metastasectomy	19,590	(18,994-20,185)	NA[a]	NA[a]	6609	(6266-6951)	5839	(5534-6144)
Brain metastasectomy	5588	(5263-5912)	52,944	(52,167-53,720)	16,091	(15,591-16,590)	11,094	(10,718-11,471)
Small bowel metastasectomy	20,916	(20,303-21,529)	2762	(2535-2988)	1724	(1544-1905)	2440	(2233-2646)
Adrenal metastasectomy	599	(493-705)	2067	(1870-2264)	230	(165-295)	471	(377-566)
Mean no. of Elixhauser comorbidities	1.98	(1.96-2.00)	2.72	(2.69-2.75)	1.87	(1.83-1.91)	1.84	(1.80-1.88)
Inpatient mortality rate	2.13%	(1.91%-2.34%)	3.18%	(2.86%-3.51%)	1.91%	(1.54%-2.28%)	1.65%	(1.26%-2.04%)

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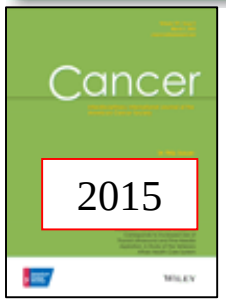
Metastasectomy in Breast cancer



The Rise in Metastasectomy Across Cancer Types Over the Past Decade

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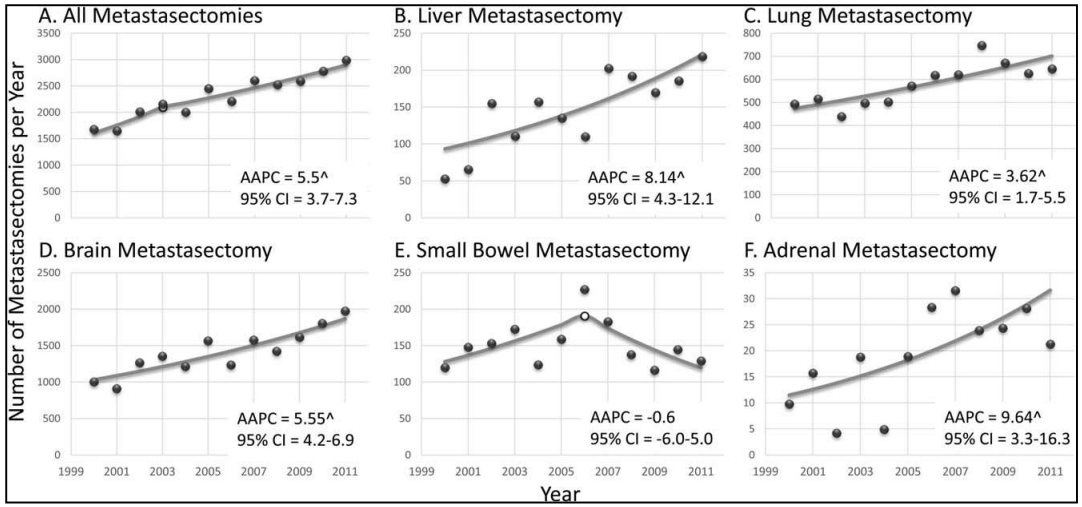
Incidence-adjusted metastasectomies for breast cancer increased from 1680 metastasectomies to 2991 metastasectomies from 2000 to 2011



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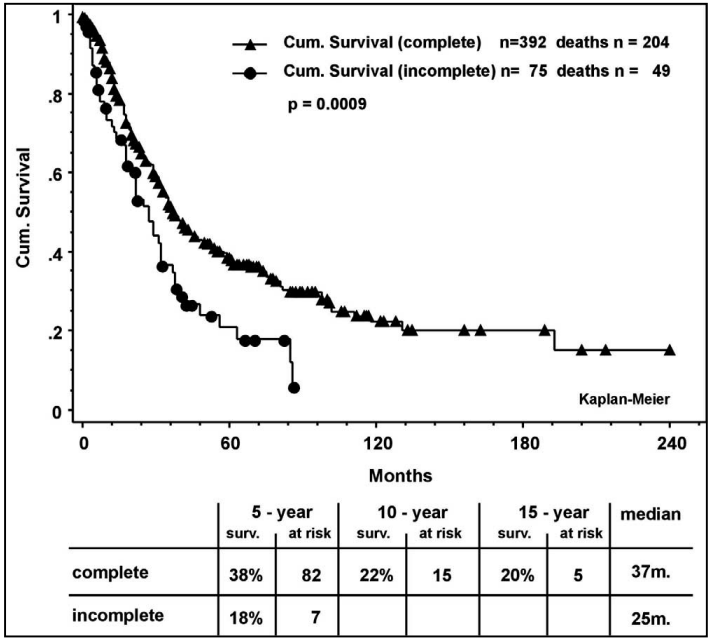
Prognostic factors

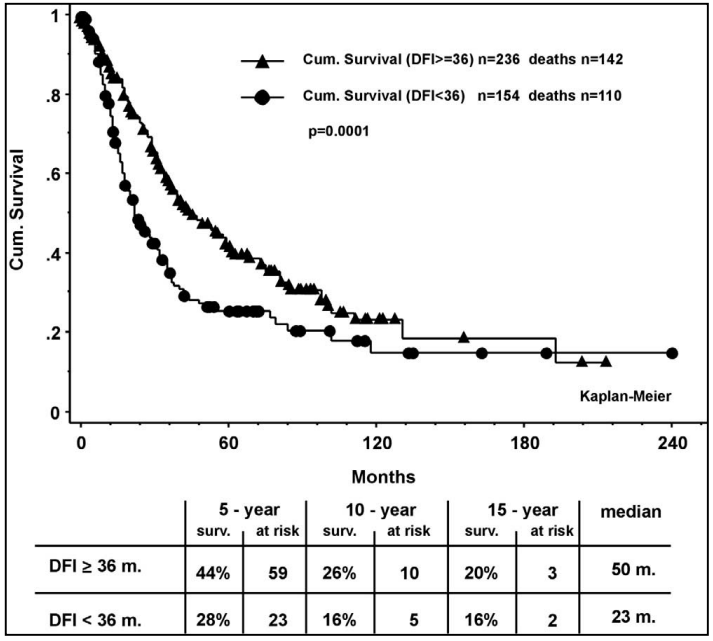
Results of lung metastasectomy from breast cancer: prognostic criteria on the basis of 467 cases of the international registry of lung metastases ☆

Godehard Friedel[a,*], Ugo Pastorino[b], Robert J. Ginsberg[c], Peter Goldstraw[d], Micheal Johnston[c], Harvey Pass[e], Joe B. Putnam[f], Heikki Toomes[a],
on behalf of the International Registry of Lung Metastases, London, England



	5 - year surv.	5 - year at risk	10 - year surv.	10 - year at risk	15 - year surv.	15 - year at risk	median
complete	38%	82	22%	15	20%	5	37m.
incomplete	18%	7					25m.

Complete resection better than incomplete



	5 - year surv.	5 - year at risk	10 - year surv.	10 - year at risk	15 - year surv.	15 - year at risk	median
DFI ≥ 36 m.	44%	59	26%	10	20%	3	50 m.
DFI < 36 m.	28%	23	16%	5	16%	2	23 m.

Better outcomes with longer disease free interval

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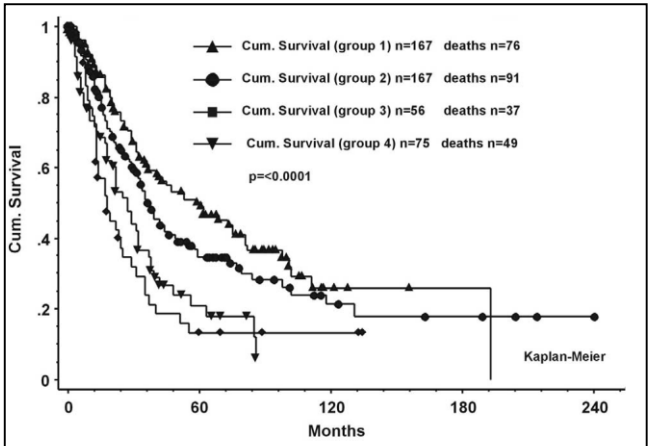
Prognostic factors



	5 - year surv.	5 - year at risk	10 - year surv.	10 - year at risk	15 - year surv.	15 - year at risk	median
Group 1 (no risk factor)	50%	47	26%	5	26%	1	59 m.
Group 2 (1 risk factor)	35%	31	21%	8	18%	4	36 m.
Group 3 (2 risk factors)	13%	4	13%	2			18 m.
Group 4 (incomplete res.)	18%	7					25 m.

Group I: Complete resection, DFI ≥ 36 months, solitary metastasis 5-year survival 50%, 10 and 15-year survival 26% with a median survival of 59 months.

Group II: Complete resection, DFI < 36 months or multiple metastases 5-year survival 35%, 10-year survival of 21% and 15-year survival of 18% with a median survival of 36 months.

Group III: complete resection, DFI < 36 months and multiple metastases survival after 5 and 10 years 13% with a median survival of 25 months.

Group IV: Incomplete resection. Five-year survival of 18% with a median survival of 25 months.

Groups of factors that portend better outcomes

In conclusion, this study with the largest documented number of resected lung metastases from breast cancer shows that **metastasectomy at present provides better long-term results** than chemotherapy and hormone therapy.

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Local treatments: surgery

Metastasectomy increases local control with significant improvement of survival in selected patients

Most patients are inoperable for comorbidities, sites of metastases, etc.

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Local treatments: RT

Do we have a safe and efficient alternative to surgical metastasectomy?

SBRT

(Stereotactic Body Radiation Therapy)

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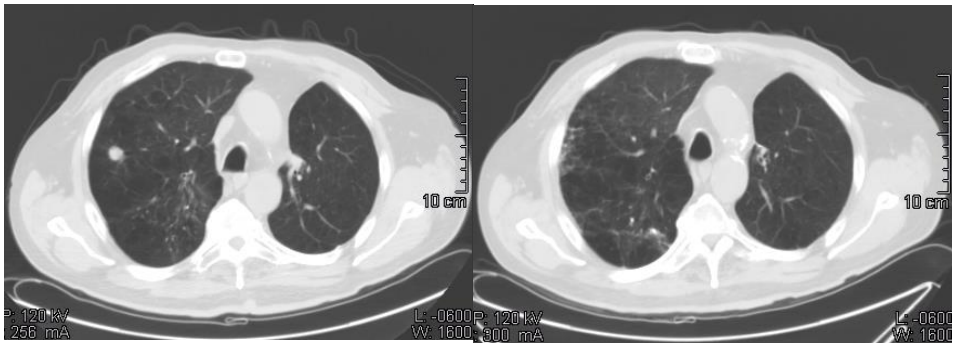
SBRT

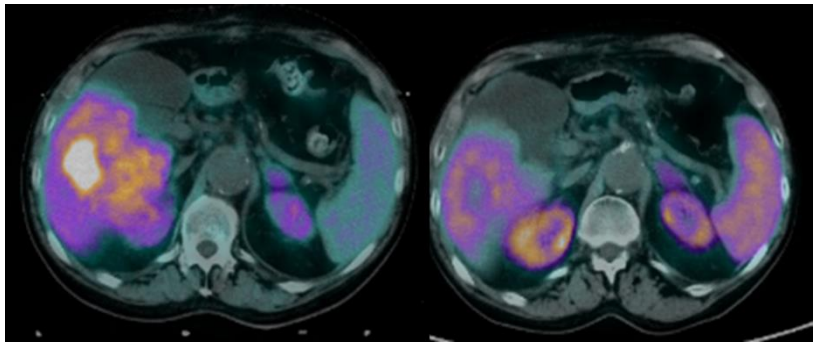
REPORT

AMERICAN SOCIETY FOR THERAPEUTIC RADIOLOGY AND ONCOLOGY (ASTRO) AND AMERICAN COLLEGE OF RADIOLOGY (ACR) PRACTICE GUIDELINE FOR THE PERFORMANCE OF STEREOTACTIC BODY RADIATION THERAPY

Stereotactic body radiation therapy (SBRT) is an external beam radiation therapy method used to very precisely deliver a **high dose of radiation** to an extracranial target within the body, using either a single dose or a small number of fractions.

The ability to deliver a **single or a few fractions of high-dose ionizing radiation** with **high targeting accuracy** and rapid dose falloff gradients encompassing tumors within a patient provides the basis for the development of SBRT.





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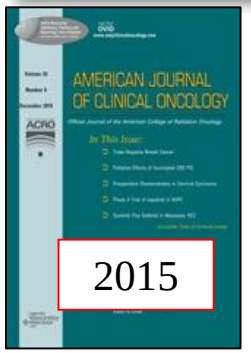
SBRT

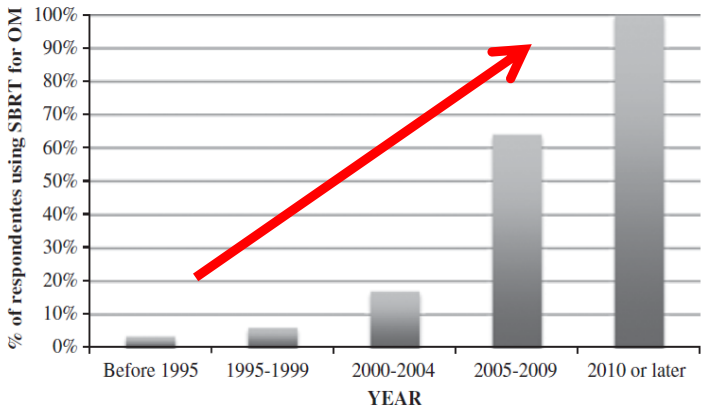


Definitive Stereotactic Body Radiotherapy (SBRT) for Extracranial Oligometastases

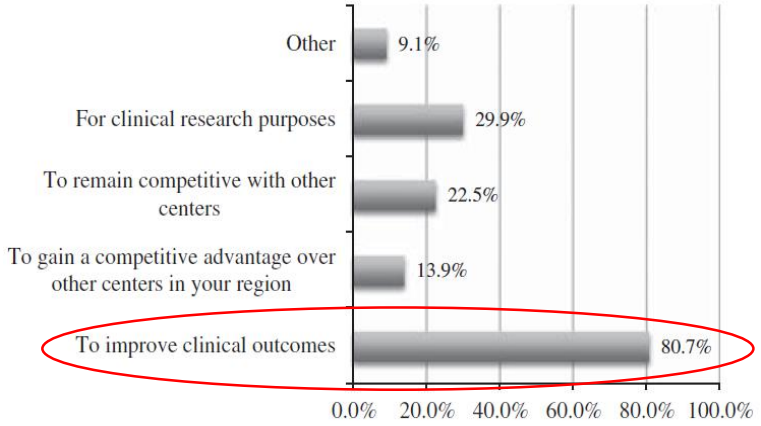
An International Survey of >1000 Radiation Oncologists

Stephen L. Lewis, MD, Sandro Porceddu, MD,† Naoki Nakamura, MD, PhD,‡ David A. Palma, MD, PhD,§ Simon S. Lo, MD,|| Peter Hoskin, MD, FRCR,¶ Drew Moghanaki, MD,# Steven J. Chmura, MD, PhD,** and Joseph K. Salama, MD**

A 25-question survey was distributed to radiation oncologists.



Cumulative percentage of respondents using SBRT for oligometastases during the defined time intervals.



Reasons cited by respondents not currently using SBRT for oligometastases **to start** offering this procedure in the near future.

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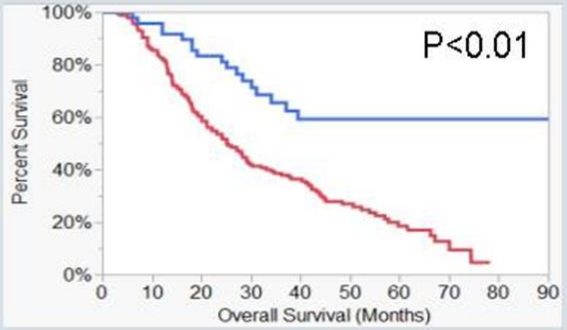
Oligometastases: perfect candidate

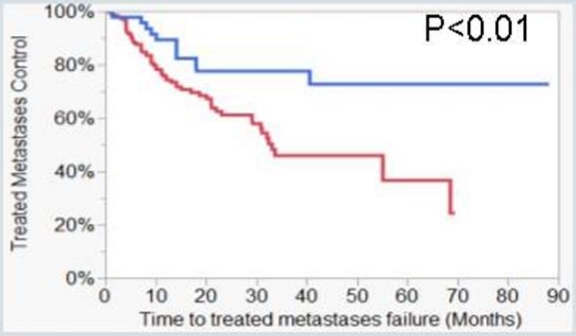
Multi-institution Pooled Analysis of Oligometastatic Patients Treated with SBRT

- 251 patients were identified
- 7 patients had a synchronous primary
- Predominant fractionation was 5 Gy x 10

Median follow-up	23 months
Patients alive at last follow-up	25%
Treated metastases control	66%
Median distant (not irradiated) control	11 months
Median overall survival	23 months

Breast primary vs other histology





Presented by Salama at ASCO meeting 2015

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Critical issues

Heterogeneity of the present published series.

- Different *doses* and *fractionations*
- Different *histologies*
- Different *patients*
- Different *number* and *size* of lesions
- Different *site* of lesions

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Oligometastases: perfect candidate?

Stereotactic body radiotherapy for oligometastases

Alison C Tree, Vincent S Khoo, Rosalind A Eeles, Merina Ahmed, David P Dearnaley, Maria A Hawkins, Robert A Huddart, Christopher M Nutting, Peter J Ostler, Nicholas J van As

***Panel:* Evidence-based practice for extracranial oligometastases**

- Stereotactic body radiotherapy results in a high control rate of treated metastases (~80%)
- About 20% of patients are progression free at 2–3 years after stereotactic body radiotherapy
- Toxicity is low
- Stereotactic body radiotherapy should be considered in patients with isolated metastases, especially if the disease-free interval is longer than 6 months
- Randomised trials are needed to establish whether stereotactic body radiotherapy improves progression free and/or overall survival
- Patients most likely to benefit from stereotactic body radiotherapy have:
  - Long disease-free interval
  - Breast histology
  - One to three metastases
  - Small metastases
  - Higher radiation dose delivered (biologic effective dose >100 Gy)

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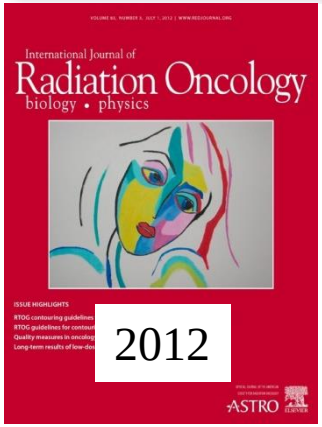
SBRT for oligometastases: perfect candidate?



Clinical Investigation: Metastases

Oligometastases Treated With Stereotactic Body Radiotherapy: Long-Term Follow-Up of Prospective Study

Michael T. Milano, M.D., Ph.D.,* Alan W. Katz, M.D., M.P.H.,*
Hong Zhang, Ph.D., M.D.,* and Paul Okunieff, M.D.*,†

*Department of Radiation Oncology, University of Rochester Medical Center, Rochester, NY; and †Department of Radiation Oncology, University of Florida, Gainesville, FL

We prospectively analyzed the long-term OS and cancer control outcomes of 121 patients with five or fewer clinically detectable metastases, from any primary site, metastatic to one to three organ sites, and treated with SBRT.

2-years PFS
- Breast cancer : 36%
- Non-breast cancer: 13%

6-years OS
- Breast cancer : 47%
- Non-breast cancer: 9%

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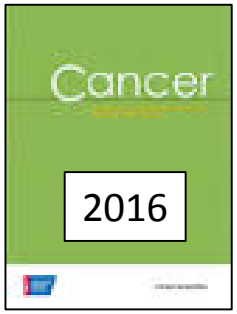
SBRT for oligometastases: perfect candidate?



Clinical and Molecular Markers of Long-Term Survival After Oligometastasis-Directed Stereotactic Body Radiotherapy (SBRT)

Anthony C. Wong, MD, PhD[1]; Sydeaka P. Watson, PhD[2]; Sean P. Pitroda, MD[1]; Christina H. Son, MD[1]; Lauren C. Das, MD[1]; Melinda E. Stack, MD[3]; Abhineet Uppal, MD[3]; Go Oshima, MD[3]; Nikolai N. Khodarev, PhD[1,4]; Joseph K. Salama, MD[5]; Ralph R. Weichselbaum, MD[1,4]; and Steven J. Chmura, MD, PhD[1]

Characteristic	No. of Patients [Months]	% [Range]
Primary sites (histology)		
Breast	7	11.5
Colon/rectum	6	9.8
Head and neck squamous cell	5	8.2
Nonsmall cell lung	11	18
Renal	8	13.1
Sarcoma	5	8.2
Small cell lung	5	8.2
Other (gallbladder, ovary, skin, thymus, thyroid, parotid, PNET)	14	23
Induced oligometastases		
Yes	8	13.1
No	53	86.9

Sixty-one evaluable patients were enrolled from 2004 to 2009 (breast cancer 7/61)

Inclusion criteria: 1 to 5 metastases, a life expectancy of >3 months, and a Karnofsky performance status of >60

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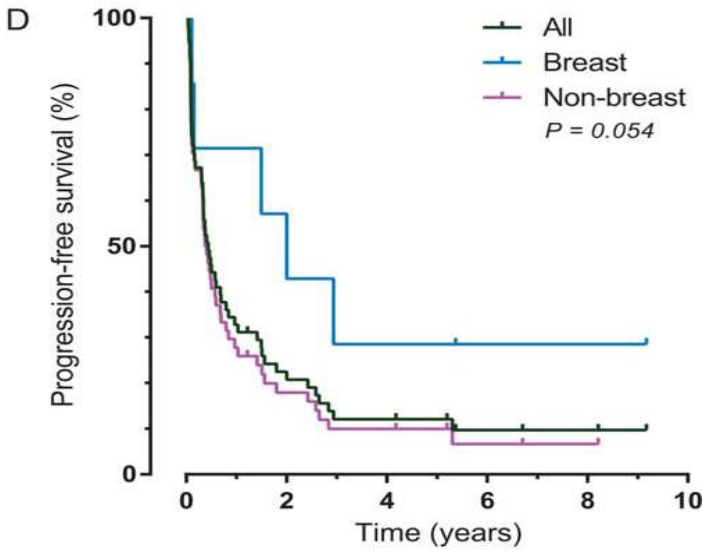
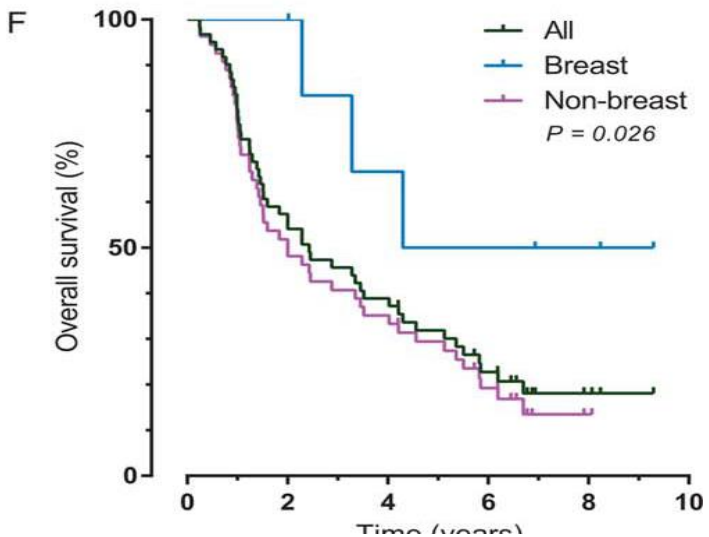
SBRT for oligometastases: perfect candidate?





The median, 2-year, and 5-year PFS were 5.3 months, 22%, and 12%, respectively.
Patients who had **breast cancer** had a median, 2-year, and 5-year PFS of 2 years, 57%, and 29%, respectively, compared with 4.7 months, 18%, and 10%, respectively, for patients who had non breast cancer (**P = .054**)

The median, 2-year, and 5-year estimated OS were 2.4 years, 57%, and 32%, respectively.
In patients with **breast cancer**, the median, 2-year, and 5-year OS estimates were 4.3 years, 100%, and 50%, respectively, compared with 2 years, 52%, and 29%, respectively, for patients with non breast cancer (**P = .026**)

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SBRT for oligometastases: perfect candidate?

Characteristic	HR for Mortality	95% CI	*P*
Univariate analysis			
Distant metastasis-free interval	0.86	0.77-0.93	< .001
Breast cancer histology	0.32	0.08-0.89	.026
Time from metastatic diagnosis to protocol treatment	0.81	0.64-1.00	.046
Rate of progression	1.06	1.03-1.20	< .05
Induced oligometastatic state	1.81	0.78-3.70	.16
Progression at protocol-treated lesion	1.41	0.79-2.50	.24
Solitary oligometastasis	1.22	0.69-2.20	.48
Age	1.00	0.98-1.03	.87
Dose <36 Gy/3 fractions	1.18	0.67-2.10	.57
Multivariate analysis			
Breast cancer histology	0.12	0.07-0.37	< .05
Distant metastasis-free interval	0.98	0.98-0.99	< .05
Time from metastatic diagnosis to end of protocol treatment	0.98	0.98-0.99	< .05
Rate of progression	1.44	1.24-1.82	< .05

A subset of oligometastatic patients achieves long-term survival after metastasis-directed SBRT.

Clinical features and primary tumor microRNA expression profiling, if validated in an independent dataset, may help select oligometastatic patients most likely to benefit from metastasis-directed therapy

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Breast Cancer Oligomets patients

Resection of liver metastases from breast cancer: Estrogen receptor status and response to chemotherapy before metastasectomy define outcome

Daniel E. Abbott, MD,[a] Antoine Brouquet, MD,[a] Elizabeth A. Mittendorf, MD,[a] Andreas Andreou, MD,[a] Funda Meric-Bernstam, MD,[a] Vicente Valero, MD,[b] Marjorie C. Green, MD,[b] Henry M. Kuerer, MD, PhD,[a] Steven A. Curley, MD,[a] Eddie K. Abdalla, MD,[a] Kelly K. Hunt, MD,[a] *and* Jean-Nicolas Vauthey, MD,[a] *Houston, TX*

Methods: Between 1997 and 2010, **86 patients** underwent resection of breast cancer liver metastases.

Results: Fifty-nine patients (**69%**) had **ER or PgR** positive primary breast neoplasms. Fifty-three patients (**62%**) had a **solitary breast cancer liver metastasis**, and 73 (85%) had breast cancer liver metastases ≤5 cm. Sixty-five patients (76%) received pre-hepatectomy hormonal therapy and/or chemotherapy. Four patients (6%) had progressive disease as the best response, and 19 patients (30%) had progressive disease before hepatectomy ($P < .001$). Seventy percent of patients who received preoperative chemotherapy or hormonal therapy had either response or stable disease immediately before hepatectomy. No postoperative deaths were observed.

At a **62-month median follow-up**, the disease free survival and overall survival were 14 and 57 months, respectively.

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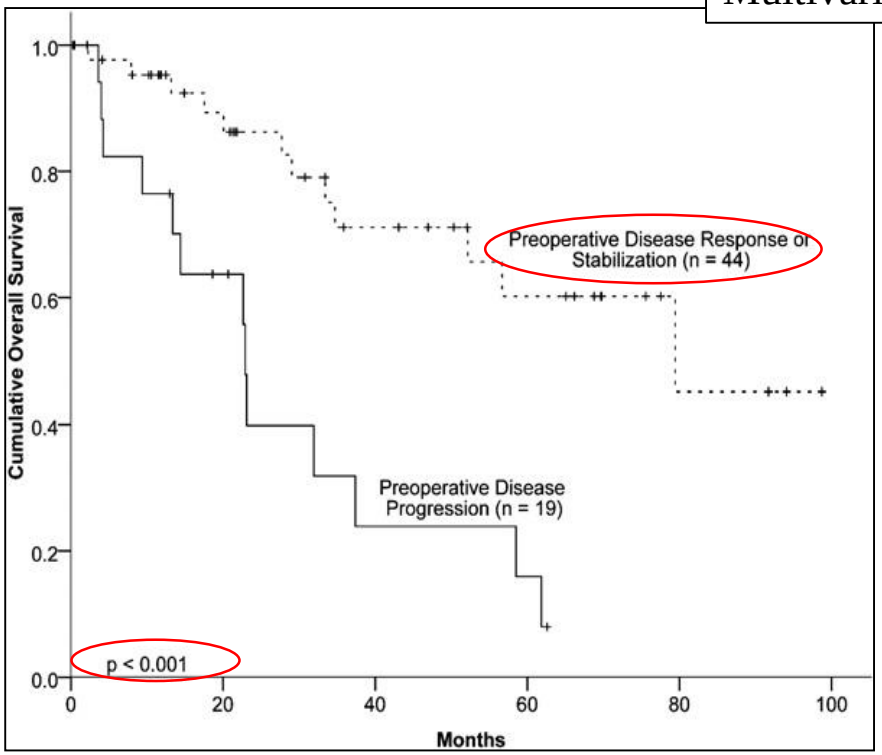
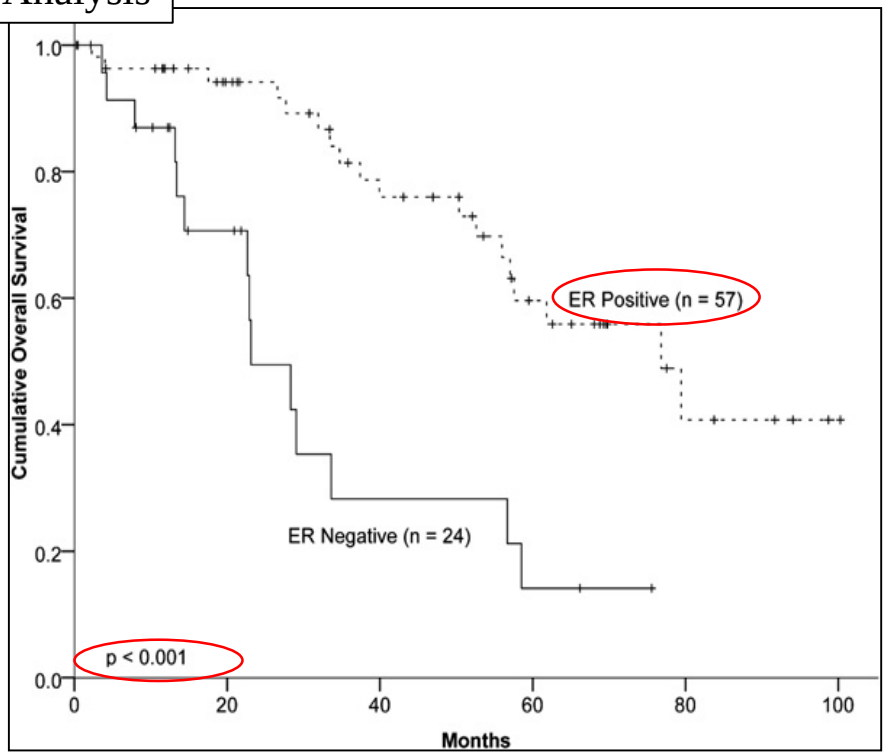
Breast Cancer Oligomets patients

Multivariate Analysis





Resection of breast cancer liver metastases in patients with **ER positive** disease that is responding to chemotherapy is associated with improved survival. The timing of operative intervention may be critical; **resection before progression is associated with a better outcome**.

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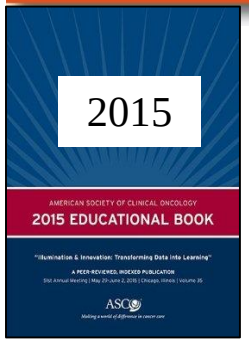
Breast Cancer Oligomets patients



Surgery or Ablative Radiotherapy for Breast Cancer Oligometastases

Joseph K. Salama, MD, and Steven J. Chmura, MD, PhD

- Oligometastases are a **common presentation** in many cancer types and are frequently represented in patients with breast cancer who are enrolled in clinical trials.
- Patients with **oligometastases have a favorable prognosis** compared to patients with more widespread metastases.
- **Surgical complete resection of breast cancer metastases** to the lung and liver in patients with oligometastases and long disease-free intervals have been **associated with favorable survival** compared with historical controls. Recent improvements in radiotherapy planning and delivery have allowed for the precise targeting of breast cancer metastases to any organ in the body with tumor control approaching that of surgical series.
- Data supporting use of **surgery and/or ablative radiation are limited and primarily retrospective**.
- Enrollment into ongoing prospective controlled studies is critical to determine if there is truly a benefit to either ablative radiation or surgical resection of all known metastases.

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Breast cancer oligomets

Oligometastatic breast cancer treated with curative-intent stereotactic body radiation therapy

Michael T. Milano · Hong Zhang · Su K. Metcalfe · Ann G. Muhs · Paul Okunieff

Table 4 Characteristics of lesions treated with curative-intent stereotactic body radiation therapy

	Number (%)
Number of lesions	85
Sites involved with oligometastatic disease	
Liver	33 (39)
Lung	19 (22)
Bone	17 (20)
Thoracic lymph nodes	14 (16)
Pelvic or abdominal lymph nodes	2 (2)
GTV	Range 0.1–400 ml, mean 23 ml, median 7 ml, SD = 49 ml

GTV = gross tumor volume; SD = standard deviation

Table 3 Characteristics at time of enrollment of patients treated with curative-intent stereotactic body radiation therapy

	Number (%)
Number of patients	40
Age (years)	Range 34–85, mean 55, median 54, SD = 14
ER and/or PR positive	25 (63)
Previously had >5 metastatic lesions	5 (13)
Sites involved with oligometastatic disease	
Liver	14 (35)
Lung	12 (30)
Thoracic lymph nodes	9 (23)
Pelvic or abdominal lymph nodes	2 (5)
Bone	11 (28)
Bone-only disease	8
Number of oligometastatic lesions	
1	17 (43)
2	11 (28)
3	6 (15)
4	2 (5)
5	4 (10)
Number of involved organs	
1	33 (83)
2	6 (15)
3	1 (3)
Sum of GTVs	Range 2–402 ml, mean 48 ml, median 29 ml, SD = 72 ml

GTV = gross tumor volume; SD = standard deviation

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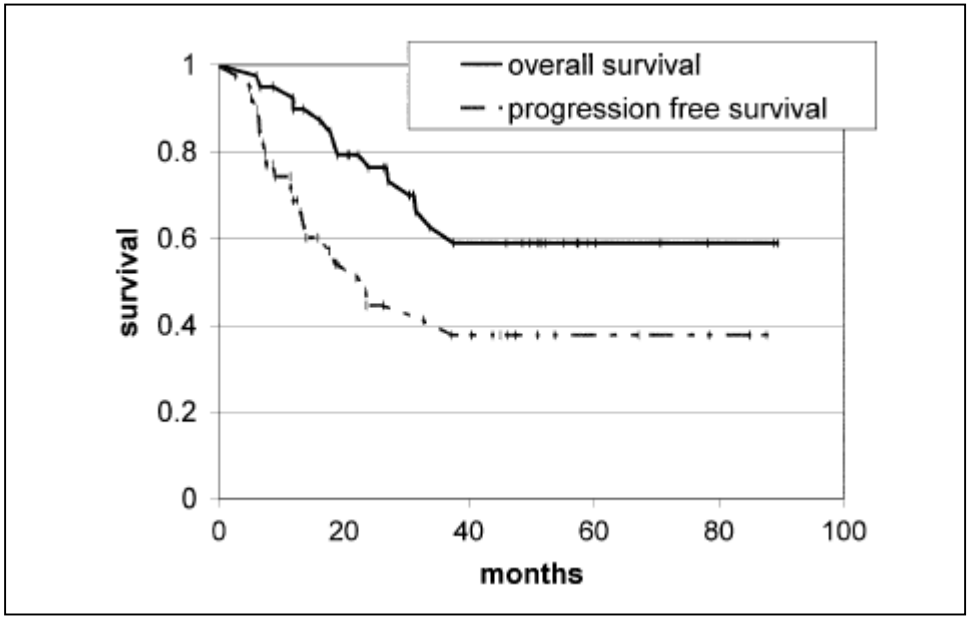
Breast cancer oligomets



4-year actuarial overall survival = 59%

4-year actuarial progression-free survival = 38%

4-year actuarial local control = 89%.

On univariate analyses, 1 metastatic lesion (versus 2–5), smaller tumor volume, bone-only disease, and stable or regressing lesions prior to SBRT were associated with more favorable outcome.

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Breast cancer oligomets

Stereotactic body radiotherapy for oligo-metastatic liver disease – Influence of pre-treatment chemotherapy and histology on local tumor control

R.J. Klement [a], M. Guckenberger [b], H. Alheid [c], M. Allgäuer [d], G. Becker [e], O. Blanck [f], J. Boda-Heggemann [g], T. Brunner [h], M. Duma [i], S. Gerum [j], D. Habermehl [k], G. Hildebrandt [l], V. Lewitzki [m], C. Ostheimer [n], A. Papachristofilou [o], C. Petersen [p], T. Schneider [q], R. Semrau [r], S. Wachter [s], N. Andratschke [b,*]

Characteristic	Absolute count	Percent	Median	Range
Age [years]			64	15–93
Gender				
Male	206	56.7		
Female	157	43.3		
Chemotherapy prior to SBRT				
Yes	354	78.3		
No	98	21.7		
PTV volume [ccm]			70.4	4.5–1074.0
Histology of primary tumor				
Cholangiocellular Carcinoma	43	9.5		
Colorectal Cancer	203	44.9		
Breast cancer	56	12.4		
NSCLC	28	6.2		
Pancreatic cancer	20	4.4		
Ovarian cancer	20	4.4		
Other	82	18.1		

Besides dose, histology and pretreatment chemotherapy were important factors influencing local tumor control probability in this large cohort of liver metastases. After adjusting for prior chemotherapy, our data add to the emerging evidence that **breast cancer metastases do respond better to hypofractionated SBRT** compared to other histologies.

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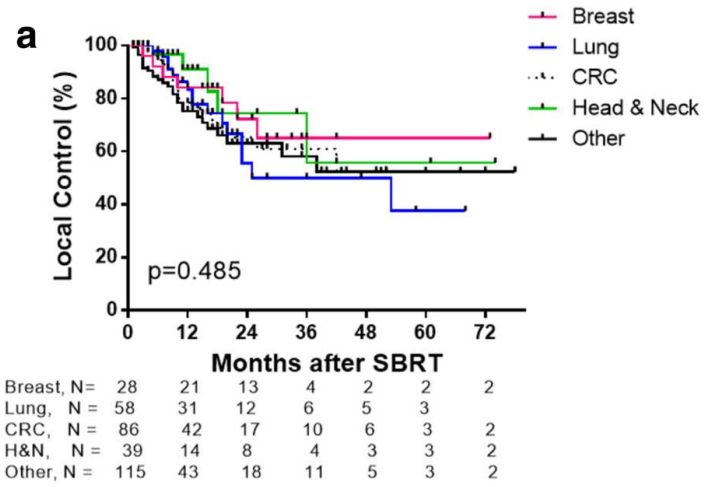
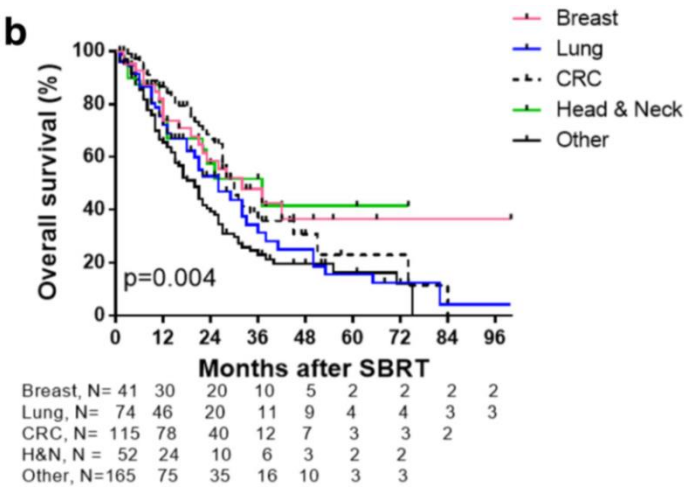
Breast cancer oligomets

Lung metastases treated with stereotactic body radiotherapy: the RSSearch® patient Registry's experience

Anthony Ricco[1], Joanne Davis[2], William Rate[1], Jun Yang[1], David Perry[3], John Pablo[4], David D'Ambrosio[5], Sanjeev Sharma[6], Srinath Sundararaman[7], James Kolker[8], Kimberly M. Creach[9] and Rachelle Lanciano[1*]



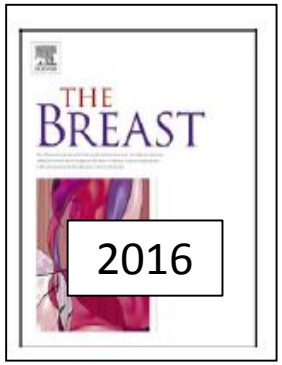


Seven hundred two patients were identified with lung metastases in the RSSearch® Registry. Of these patients, **577 patients had SBRT dose and fractionation information available**.

Patients with head and neck and **breast cancers had longer median OS** of 37 and **32 months** respectively.

Excellent OS and LC is achievable with SBRT utilizing BED $\geq 100 Gy_{10}$ for lung metastases according to the RSSearch® Registry data. Patients with small lung metastases (volumes < 11 cc) had better LC and OS when using SBRT doses of BED $\geq 100 Gy_{10}$.

Breast Cancer Oligomets patients in Humanitas



Stereotactic body radiation therapy: A promising chance for oligometastatic breast cancer

Marta Scorsetti [a], Davide Franceschini [a,*], Fiorenza De Rose [a], Tiziana Comito [a], Elisa Villa [a], Cristina Iftode [a], Pierina Navarria [a], Giuseppe Roberto D'Agostino [a], Giovanna Masci [b], Rosalba Torrisi [b], Alberto Testori [c], Corrado Tinterri [c], Armando Santoro [b]

Oligometastastic patients from breast cancer were treated with SBRT for 1-3 lung and liver lesions, in an observational study.

From April 2010 to June 2014, 33 patients for a total number of 43 lesions were irradiated.

No concomitant chemotherapy
14 pts trastuzumab
20 pts HT

Table 2
Characteristics of patients treated with SBRT for lung or liver metastases.

	Number
Number of patients	33
Age (years)	Mean 57 years
Hormonal receptor positive	23 (69.7%)
HER2 3+	16 (48.5%)
Systemic therapies for metastatic disease before SBRT	30 (90.9%)
Sites of treated oligometastases	Liver 23 (69.7%)
	Lung 10 (30.3%)
Number of treated oligometastases	
1	21 (63.6%)
2	10 (30.3%)
3	2 (6.1%)
Extrahepatic/pulmonary stable disease	16 (48.5%)
Sum of ITVs Liver	Mean 20.06 cc
Lung	Mean 10.96 cc

SBRT: stereotactic body radiation therapy, ITV: internal target volume.

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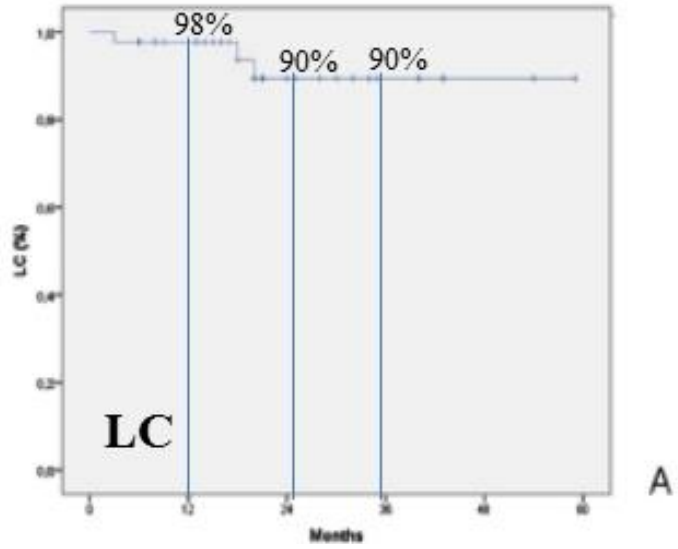
Breast Cancer Oligomets patients in Humanitas



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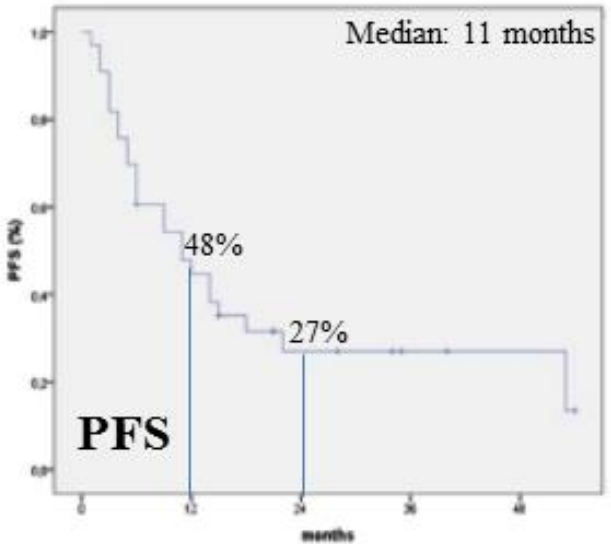

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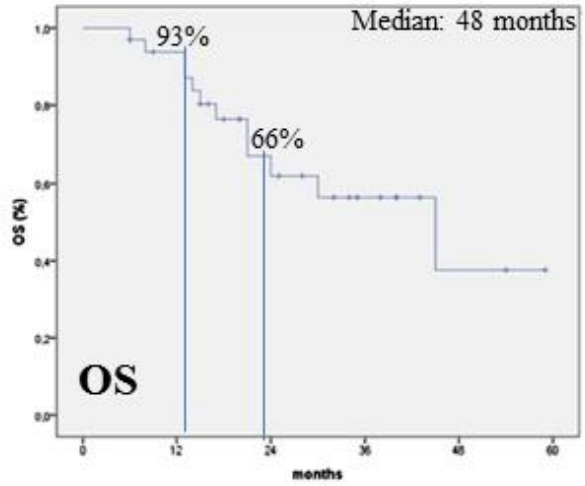

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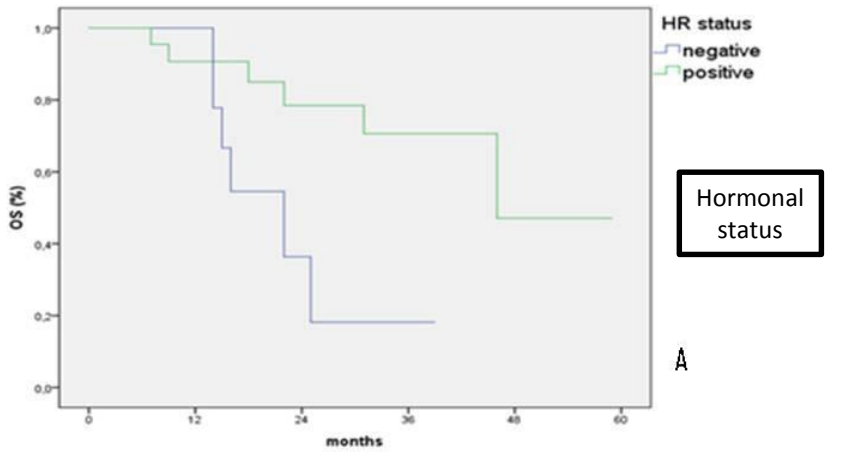
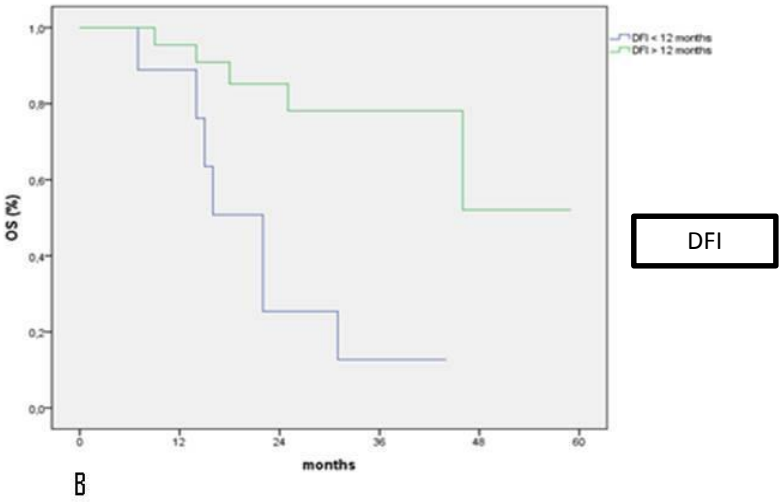
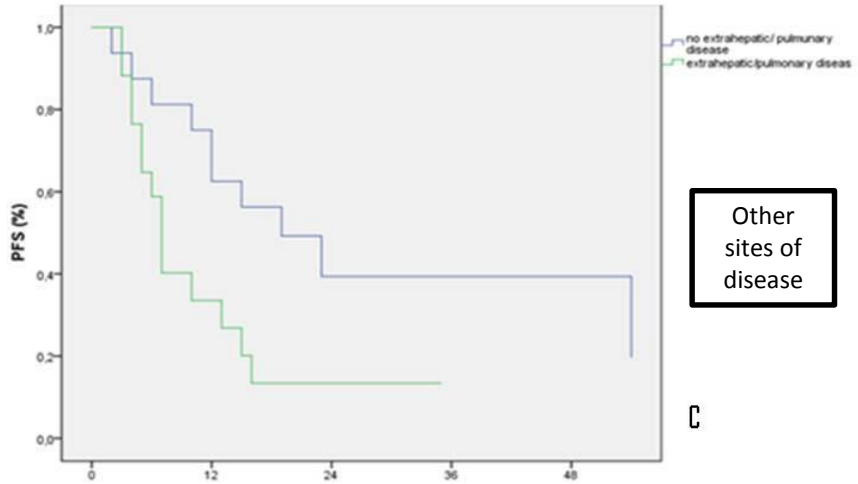
Breast Cancer Oligomets patients in Humanitas



Hormonal status



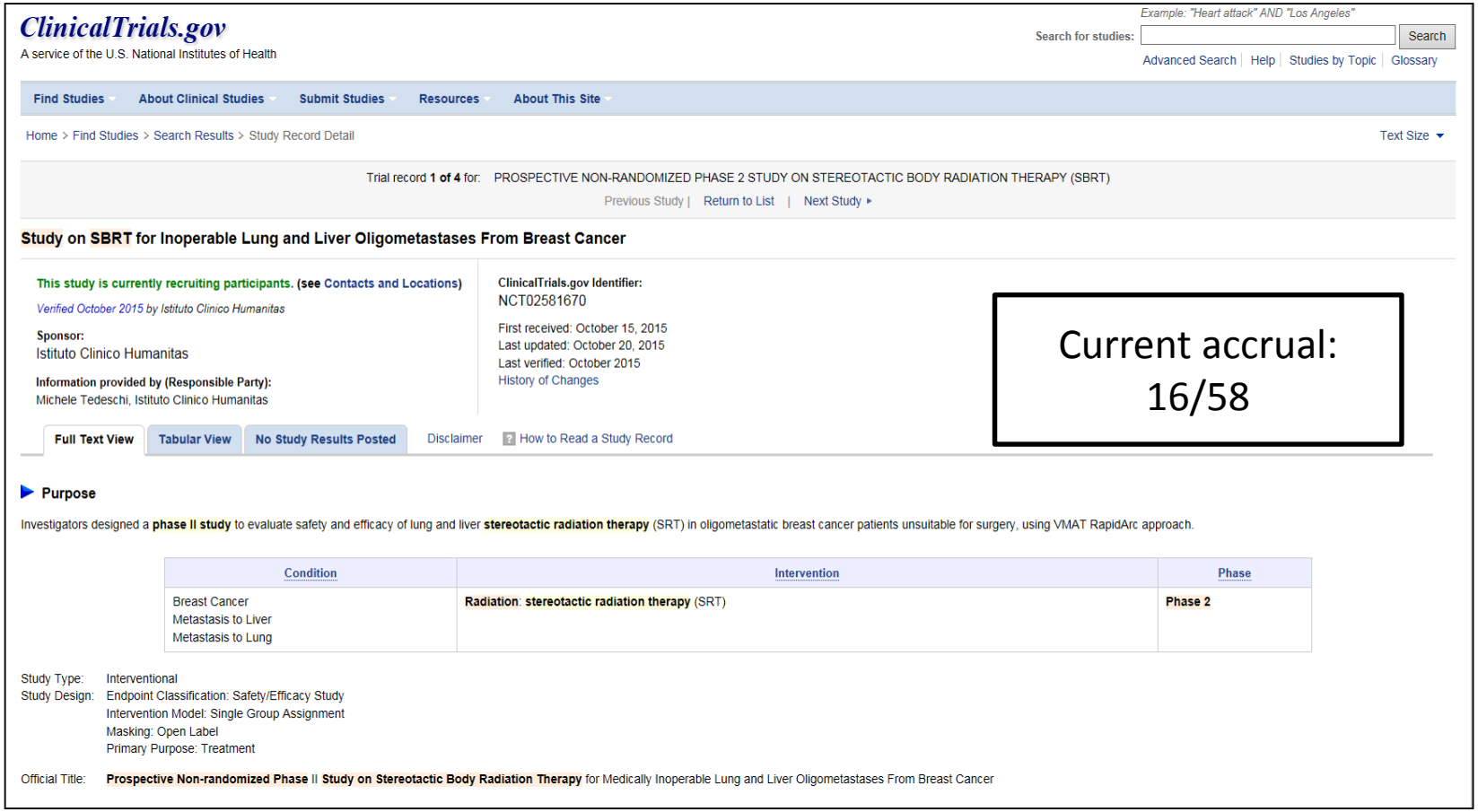
DFI



Other sites of disease

At univariate analysis **DFI >12 months, hormonal receptor positivity, medical therapies after SBRT** showed a significant **impact on OS.**
Extrahepatic or pulmonary disease correlated with a **worse PFS.**

Breast Cancer Oligomets patients in Humanitas



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A service of the U.S. National Institutes of Health

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Text Size

Trial record **1 of 4** for: PROSPECTIVE NON-RANDOMIZED PHASE 2 STUDY ON STEREOTACTIC BODY RADIATION THERAPY (SBRT)

Previous Study | Return to List | Next Study ▸

Study on SBRT for Inoperable Lung and Liver Oligometastases From Breast Cancer

This study is currently recruiting participants. (see Contacts and Locations)

Verified October 2015 by Istituto Clinico Humanitas

Sponsor:
Istituto Clinico Humanitas

Information provided by (Responsible Party):
Michele Tedeschi, Istituto Clinico Humanitas

ClinicalTrials.gov Identifier:
NCT02581670

First received: October 15, 2015
Last updated: October 20, 2015
Last verified: October 2015
History of Changes

Full Text View | Tabular View | No Study Results Posted | Disclaimer | How to Read a Study Record

Current accrual:
16/58

Purpose

Investigators designed a **phase II study** to evaluate safety and efficacy of lung and liver **stereotactic radiation therapy** (SRT) in oligometastatic breast cancer patients unsuitable for surgery, using VMAT RapidArc approach.

Condition	Intervention	Phase
Breast Cancer Metastasis to Liver Metastasis to Lung	**Radiation**: **stereotactic radiation therapy** (SRT)	**Phase 2**

Study Type: Interventional
Study Design: Endpoint Classification: Safety/Efficacy Study
Intervention Model: Single Group Assignment
Masking: Open Label
Primary Purpose: Treatment

Official Title: **Prospective Non-randomized Phase II Study on Stereotactic Body Radiation Therapy** for Medically Inoperable Lung and Liver Oligometastases From Breast Cancer

Ongoing trials

Stereotactic Body Radiation Therapy in Treating Patients With Metastatic Breast Cancer, Non-small Cell Lung Cancer, or Prostate Cancer

This study is currently recruiting participants. (see Contacts and Locations)

Verified June 2016 by NRG Oncology

Sponsor:
NRG Oncology

Collaborator:
National Cancer Institute (NCI)

ClinicalTrials.gov Identifier:
NCT02206334

First received: July 30, 2014
Last updated: June 17, 2016
Last verified: June 2016
History of Changes

This **phase I trial** studies the side effects and the best dose of stereotactic body radiation therapy in treating patients with **breast cancer**, non-small cell lung cancer, or prostate cancer that has spread to other parts of the body.

Patients undergo **3-5 fractions of image-guided stereotactic body radiation therapy** to all existing metastases over 1-3 weeks

PRIMARY OBJECTIVES: To **determine the recommended SBRT** dose for each of the metastatic locations being treated given the individual and overlapping fields when multiple metastases are treated with SBRT in a national clinical trials network setting.

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Ongoing trials

Standard of Care Therapy With or Without Stereotactic Radiosurgery and/or Surgery in Treating Patients With Limited Metastatic Breast Cancer

This study is currently recruiting participants. (see Contacts and Locations)

Verified June 2016 by NRG Oncology

Sponsor:
NRG Oncology

Collaborator:
National Cancer Institute (NCI)

ClinicalTrials.gov Identifier:
NCT02364557

First received: February 5, 2015
Last updated: June 17, 2016
Last verified: June 2016
History of Changes

This randomized phase II/III trial studies how well **standard of care therapy with stereotactic radiosurgery and/or surgery works and compares it to standard of care therapy alone** in treating patients with **breast cancer** that has spread to one or two locations in the body (limited metastatic) that are previously untreated.

PRIMARY OBJECTIVES:

- To determine whether ablation (through SBRT and/or surgical resection of all known metastases) in oligometastatic breast cancer patients provides a sufficient signal for **improved PFS** to warrant full accrual to the Phase III portion of the trial. (Phase II-R)
- To determine whether ablation (through SBRT and/or surgical resection of all known metastases) in oligometastatic breast cancer patients **significantly improves OS.** (Phase III)

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Conclusions

- **WHY**

Potential curative role of aggressive local therapy in Oligometastatic disease

- **HOW**

High dose in single or few fractions delivered using non-invasive and precise tecniques with high targeting accuracy and Quality assurance programs

- **WHICH**

Risk-adapted dose prescription with BED ≥ 100 Gy

- **WHEN**

Multidisciplinary team evaluation

More survival benefit for:

- breast histology
- small and few mets (1-3)
- DFI ≥ 12 months

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Future directions

- **Selection of patients** with favourable prognosis to evaluate the impact on survival
- **Well designed prospective** RCTs to identify if there is a real impact on patients'outcome
- **Association with chemo\target\immuno therapy**