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Poster Discussione

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ISTITUT
SCIENTIFIC
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PER LO STUDI E LA CURA
DEI TUMORI

A Ten Year Experience of the Multidisciplinary Osteoncology Center

Authors: A. Bongiovanni; F. Recine, V. Faustì, F. Foca; R Casadei, MC. Falasconi, D Diano, E. Sansoni, L Fabbri, L Tontini, S. Severi, F. Matteucci; V. Zavoiu, L. Mercatali D. Amadori, T. Ibrahim

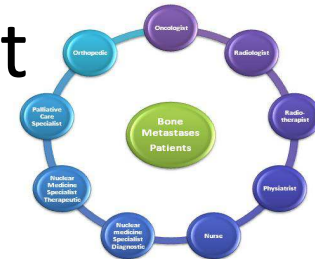
ABSTRACT

Aims and background. Bone metastases are responsible for high morbidity in cancer patients (pts). Pain and other serious complications known as skeletal related events depends on the site and type of lesions and preventive therapy. The role of the Multidisciplinary approach is to formulate an individualized treatment strategy by all specialists involved, based on the disease characteristics of the individual patient as well as their history, health and performance status, and treatment goals. The present paper aims to evaluate and analyze the impact of a multidisciplinary team on the management of bone metastases after a decennial experience.

Methods. from January 2005 to December 2015 we retrospectively analyzed 2194 records of 1628 pts referred to an outpatient visit at our institute. All cases were reviewed and discussed weekly by a multidisciplinary team consisting of oncology, radiotherapy, orthopedic, radiologic, psychiatric, nuclear medicine and palliative care specialists and a nurse.

Results. Of the 2194 visits carried out, 838 (38.2%) were done because of risk of complications from bone metastases. A modification on antineoplastic treatment was decided in 709 (66.3%) cases and bone target therapy was changed and in 309 (31%) patients. Radiotherapy was indicated in 220 (20%) of 1099 pts recorded. Patients who reported pain (median pain intensity, 4) in the Brief Inventory Pain (BPI) at the first visit were 1296 (59.1%). Among them, 537 (41.4%) reported a pain level that highly interfered with normal daily activities. After 7 days from first visit and a new orthosis and analgic therapy prescription, 208 (16 %) pts were clinically re-evaluated and a new BPI was administered. A statistically significant improvement on the worst pain (p -value: <0.0001) and current pain (p -value: 0,03) with a favorable impact on general activity (p -value: 0,02) was seen. An anonymous questionnaire was also completed by 2051 pts on service's quality provided: 69.4% were very satisfied, 28.2% satisfied, 1% responded "I don't know", and only 0.6 % expressed dissatisfaction.

Multidisciplinary Osteoncology Team Visit (MDOT)



Eligible Patients:

- Bone lesions to be defined
- First diagnosis of BM or bone primitive tumor.
- BM at risk of complications

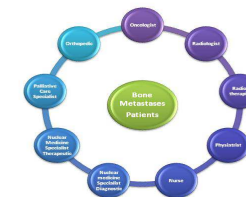
3 phases:

1) a dedicated Osteoncology nurse explained to the patient how the MDOT visit works and provided the Brief Pain Inventory (BPI). All data were recorded in a centralized database, updated to the last day of patients' life or last visit.

2) Patient is evaluated by a MDOT (oncologist, a palliative care specialist, a radiotherapist, an orthopedic, a nuclear medicine specialist, a radiologist, a physiatrist and a nurse). All the members take part of the decision process. At the end of the visit patients received a well detailed report with all the indications of the MDOT.

3) Patient is asked to complete an anonymous questionnaire on the quality of the service provided.

Results: MDOT interventions

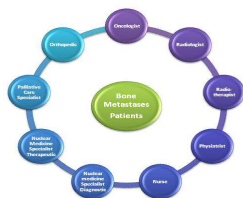


	N of cases (2.194)	%
Age, median (min, max)	63 (14-92)	
Gender		
F	1.470	67,0
M	724	33,0
Period		
2005-2008	584	26,6
2009-2012	755	34,4
2013-2016	855	39,0
Site of disease		
Breast	871	39,7
Lung, pleura and mesothelioma	246	11,2
Prostate	142	6,5
Gastrointestinal tract	133	6,1
Genitourinary system	119	5,4
Hematological tumors	68	3,1
Head and neck	37	1,7
Neuroendocrine tumors	16	0,7
Bone,sarcoma and osteosarcoma	29	1,3
Multiple sites	379	17,3
Other	20	0,9
Not other specified sites	49	2,2
Not oncological patients	85	3,9
N Questionnaire		
First	1.628	74,2
Additional	566	25,8
Pain in the last week		
Yes	1.312	59,8
No	882	40,2
Most painful areas		
Trunk	916	71,8
Arms	108	8,5
Trunk + arms	252	19,7
Missing data	36	

Type of Interventions	N°(%)
Change on Antiblastic Therapy	
Yes	709 (66,3)
No	361 (33,7)
Change on Bone target Therapy	
Yes	266 (31,4)
No	580 (68,5)
Change on Antalgic Therapy	
Yes	308 (41,3)
No	438 (58,7)
New Antalgic Therapy	
Yes	230 (37,0)
No	391 (63,0)
Radiotherapy	
Yes	220 (20,0)
No	879 (80,0)
Radiotherapy Indication	
Cord compression	31 (17,2)
Pain	74 (41,1)
Pathological Fracture	62 (20,0)
Post-surgery	4 (2,2)
Re-habilitation program	
No	1.033 (97,0)
Yes	66 (3,0)
Orthesis	
Yes	197 (28,3)
No	499 (71,7)
Change of previous orthesis	
Yes	308 (39,0)
No	482 (61,0)
Orthopedic Surgery	
Yes	32(3,0)
No	1.034 (97,0)
Radiological Intervention	
Yes	93 (8,7)
No	973 (91,3)
Radiometabolic treatment	
Yes	23 (2,1)
No	993 (93,2)

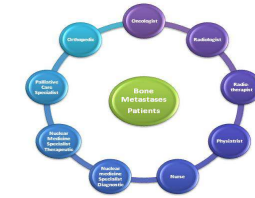
Results: BPI analysis

Baseline results	N° Patients (%)		
	Mild (0-4)	Moderate (5-6)	Severe (7-10)
Worst pain	304 (23,5)	316 (24,4)	676 (52,2)
Least pain	1.157 (89,6)	89 (6,9)	46 (3,6)
Average pain	788 (61,4)	324 (25,3)	171 (13,3)
Median (iqr range) of worst pain within average pain category	5 (4-7)	8 (7-9)	9 (8-10)
Current pain	950 (74,3)	172 (13,5)	156 (12,2)
Relief			
Interference with general activity	494 (39,4)	223 (17,8)	537 (42,8)
Interference with mood	747 (59,5)	166 (13,2)	342 (27,3)
Interference with walking ability	674 (53,5)	190 (15,1)	395 (31,4)
Interference with normal work	521 (41,8)	221 (17,7)	504 (40,4)
Interference with relations with other people	978 (79,0)	109 (8,8)	151 (12,2)
Interference with sleep	933 (74,3)	116 (9,2)	207 (16,5)
Interference with enjoyment of life	753 (63,4)	148 (12,5)	286 (24,1)



	N° Patients baseline (%)	N° Patients ≤12 gg (%)			p-value
		Mild	Moderate	Severe	
Worst pain (n=207)	Mild	19 (55.9)	12 (35.3)	3 (8.8)	<0.0001
	Moderate	13 (27.1)	20 (41.7)	15 (31.2)	
	Severe	27 (21.6)	27 (21.6)	71 (56.8)	
Least pain (n=206)	Mild	147 (83.1)	22 (12.4)	8 (4.5)	0,2027
	Moderate	15 (65.2)	5 (21.7)	3 (13.1)	
	Severe	6 (100.0)	0 (0.0)	0 (0.0)	
Average pain (n=201)	Mild	70 (67.3)	26 (25.0)	8 (7.7)	0,9818
	Moderate	25 (39.7)	26 (41.3)	12 (19.0)	
	Severe	8 (23.5)	14 (41.2)	12 (35.3)	
Current pain (198)	Mild	91 (71.6)	19 (15.0)	17 (13.4)	0,0323
	Moderate	14 (31.8)	15 (34.1)	15 (34.1)	
	Severe	7 (25.9)	6 (22.2)	14 (51.9)	
Interference with general activity (n=193)	Mild	43 (69.4)	11 (17.7)	8 (12.9)	0,0254
	Moderate	20 (45.5)	11 (25.0)	13 (29.5)	
	Severe	22 (25.3)	11 (12.6)	54 (62.1)	
Interference with mood (n=197)	Mild	57 (64.0)	18 (20.2)	14 (15.8)	0,4617
	Moderate	10 (29.4)	6 (17.6)	18 (53.0)	
	Severe	17 (23.0)	18 (24.3)	39 (52.7)	
Interference with walking ability (n=199)	Mild	58 (68.2)	11 (13.0)	16 (18.8)	0,2587
	Moderate	16 (47.0)	9 (26.5)	9 (26.5)	
	Severe	24 (30.0)	15 (18.8)	41 (51.2)	
Interference with normal work (n=189)	Mild	43 (62.3)	14 (20.3)	12 (17.4)	0,1297
	Moderate	16 (38.1)	10 (23.8)	16 (38.1)	
	Severe	20 (25.6)	7 (8.9)	51 (65.5)	
Interference with relations with other people (n=195)	Mild	101 (68.7)	19 (12.9)	27 (18.4)	0,001
	Moderate	10 (47.6)	5 (23.8)	6 (28.6)	
	Severe	6 (22.2)	3 (11.1)	18 (66.7)	
Interference with sleep (n=198)	Mild	89 (69.5)	17 (13.3)	22 (17.2)	0,3308
	Moderate	11 (50.0)	3 (13.6)	8 (36.4)	
	Severe	16 (33.3)	13 (27.1)	19 (39.6)	
Interference with enjoyment of life (n=189)	Mild	60 (53.1)	18 (15.9)	35 (31.0)	0,0019
	Moderate	6 (30.0)	3 (15.0)	11 (55.0)	
	Severe	15 (26.8)	7 (12.5)	34 (60.7)	

Results: Patient's Satisfaction



Osteo-Oncology Center, IRST, Meldola Questionnaire on Patient Satisfaction

Is this your first visit to the Center? Yes No Date of completion ____ / ____ / ____

1) How satisfied were you with your visit?

Very satisfied Satisfied Dissatisfied Don't know

2) Did the presence of the team of specialists disturb you?

Not at all A little Quite a lot A lot Don't know

3) How useful do you consider this Center?

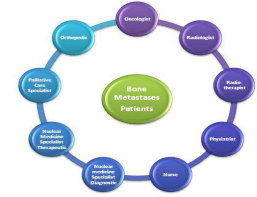
Useful Quite useful Not very useful

4) Do you have any suggestions for improving the Center?

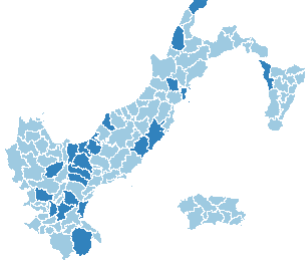
Thank you for your cooperation.

	N°	%
New patients		
Yes	1.282	67,1
No	628	32,9
Satisfaction		
No	13	0,6
Non –committal	17	0,8
Don't Know	19	0,9
Satisfied	577	28,2
Very satisfied	1.421	69,4
Total	2.047	100,0
Discomfort		
Uncomfortable	72	3,5
Quite uneasy	127	6,2
Quite comfortable	72	16,2
Comfortable	1.434	70,0
Total	2.048	100,0

Conclusions



- This study analyze the impact of a Multidisciplinary approach on Bone metastases management after 10 years of a dedicated clinical team
- Multidisciplinary Team should be the standard of care in Modern Oncology above all in BM but data are very limited
- A personalized strategy are designed by MDOT according to patient's characteristics
- Bone pain improves 7 days after MDOT visit with a positive impact on quality of life
- Patients don't feel disturbed by the MDOT and are highly satisfied by the service provided
- Multidisciplinary Osteoncology approach is feasible and can be applied in others centers
- Limitations including lacking of data on patients outcome and cost saving analysis



BANCA DATI NAZIONALE METASTASI OSSEE: I PRIMI DATI PROSPETTICI NEL CARCINOMA MAMMARIO.

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¹IRCCS Istituto Scientifico Romagnolo per lo Studio e la cura dei Tumori - IRST Meldola (Forlì-Cesena),

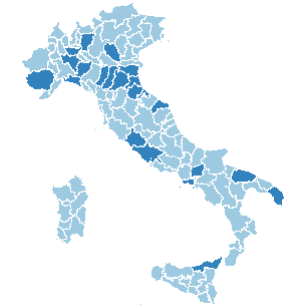
²Ospedale Infermi Rimini, ³Ospedale Vito Fazzi (Lecce), ⁴Policlinico Bari, ⁵Ospedale Umberto I Lugo (Ravenna), ⁶Ospedale Ramazzini Carpi (Modena).

Introduzione: Le metastasi ossee rimangono ancora la principale causa di morbilità e mortalità in pazienti con tumore, in particolare a causa di complicanze definite come Eventi Scheletrici Correlati (SRE). Queste complicanze riducono la qualità di vita dei pazienti stessi e sono associate ad un incremento dei costi sociali e sanitari ma mancano dati prospettici sull'evoluzione e la storia naturale della malattia di questi pazienti. Dal 2014 è attiva la Banca Dati delle Metastasi Ossee che si propone di raccogliere i dati sulle metastasi ossee da diverse neoplasie solide. Come sappiamo, un'alta proporzione di pazienti affetta da tumore della mammella sviluppa metastasi ossee e la maggior frequenza delle metastasi ossee è sostenuta dal carcinoma della mammella. Scopo di questo lavoro è fornire per la prima volta un'analisi dei dati raccolti prospetticamente sull'epidemiologia delle metastasi ossee, sugli eventi scheletrici ad essi correlati, sugli agenti che prevenono la perdita di massa ossea e sull'andamento clinico di pazienti con metastasi ossee da tumore della mammella.

Materiali e Metodi: La Banca dati Metastasi ossee è uno studio multicentrico prospettico osservazionale, che ha come centro coordinatore (CC) l'IRST IRCCS di Meldola. La Banca data è in grado di fornire informazioni riguardo la storia clinica di paziente con metastasi ossee da tumori solidi, usando una piattaforma creata appositamente per raccogliere questi dati. La piattaforma della banca dati consiste di 4 schede contenenti informazioni riguardo le caratteristiche demografiche del paziente, le caratteristiche del tumore primitivo e delle metastasi ossee, così come la loro evoluzione dando particolare importanza alla comparsa di un SRE. Questi dati sono aggiornati ogni 6 mesi dai centri partecipanti e revisionati dal CC. Per la Banca dati Metastasi ossee sono stati inclusi pazienti con età ≥ 18 aa e diagnosi radiologica e/o istologica di metastasi ossea da tumore primitivo solido istologicamente accertato previa firma di consenso informato scritto. Per questa analisi preliminare si sono considerati i casi con metastasi ossea da carcinoma della mammella con almeno 6 mesi di "follow-up" al tempo dell'esecuzione dell'analisi. E' stata effettuata un'analisi descrittiva dei dati, calcolando la sopravvivenza libera da progressione come il tempo che intercorre tra la data di diagnosi della prima metastasi ossea e la data di progressione o di decesso o di ultima visita della paziente.

Risultati: Da settembre 2014 a maggio 2016 sono state incluse nello studio 107 pazienti affette da metastasi ossee da tumore della mammella, in sette centri italiani. L'età mediana era di 62 anni (range 26-86) e al momento della diagnosi della prima metastasi ossea, il 72% delle pazienti presentava un buon performance status (0-1). La maggior parte delle pazienti (57.9%) presentava lesioni ossee multiple alla prima diagnosi (>6 lesioni), mentre il 45.8% aveva lesioni non ossee concomitanti. Alla diagnosi, il 73.7% delle pazienti eseguiva trattamento farmacologico per l'osso (53.2% Zoledronato, 1.8% Pamidronato e 18.7% Denosumab). Il 39.3% dei casi presentava un SRE alla diagnosi (frattura patologica nel 29.5%, radioterapia nel 56.8%, chirurgia nel 6.8% e compressione midollare nel 2.3% dei casi). Durante il follow-up si sono verificati ulteriori 15 casi di frattura patologica, 17 casi in cui si è fatto ricorso alla radioterapia, un caso di chirurgia e 1 caso di compressione midollare. Il follow up mediano dei casi era di 20 mesi (range 6-93 mesi). A seguito della prima diagnosi, nel periodo analizzato si sono riscontrati 65 casi di progressione di malattia: la sopravvivenza libera da progressione mediana era di 15.1 mesi (95%CI:10.2-23.6). **Conclusioni:** La Banca Dati metastasi Ossee è un primo studio prospettico multicentrico che mira ad analizzare la storia naturale delle metastasi ossee da differenti tumori solidi. Per quanto di nostra conoscenza, questa è la prima presentazione di dati raccolti prospetticamente ed estrapolati da una Banca Dati dedicata, sul tipo di metastasi, il relativo trattamento e la sopravvivenza di paziente con metastasi ossee da tumore della mammella.

Introduction

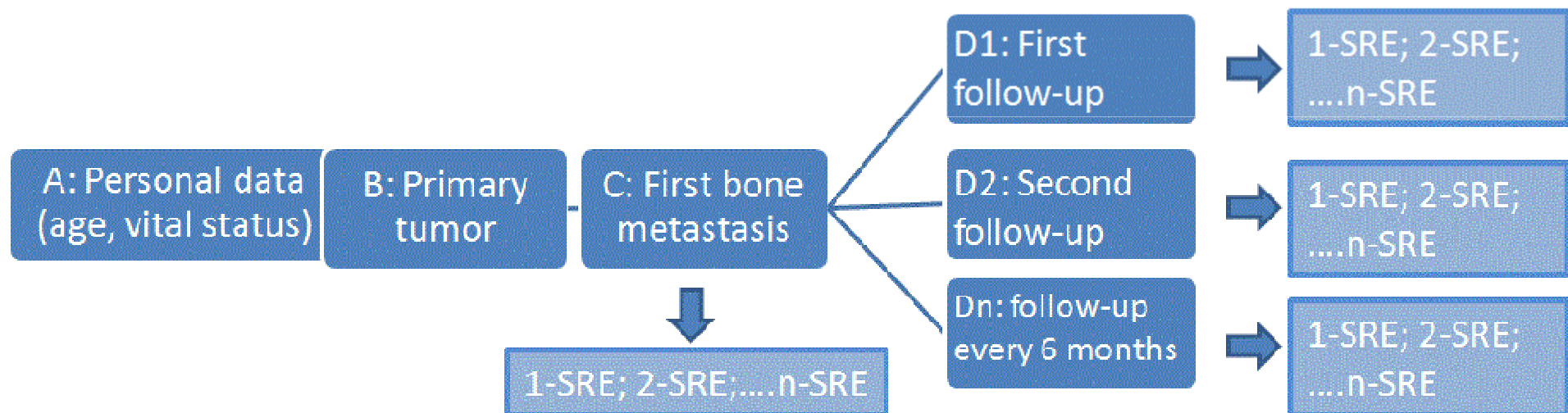


- Bone metastases (BM) are still the main cause of morbidity and mortality in cancer patients, overall because of their complications defined as SRE (skeletal - related event). SRE more frequently associated with BM are pathological fractures, spinal cord compression, bone pain, bone marrow suppression, hypercalcemia. These complications reduce patients' quality of life and are associated with an increasing in social and health costs.
- At present, data concerning BM are obtained retrospectively from monocentric experiences.
- The primary aim of the BM Data Base is to collect clinical and epidemiological prospective data in order to better understand the natural history of BM and to obtain information about SRE.
- The secondary objectives are to evaluate clinical factors related both to the primary tumors and to BM (for example objective response, bone pain etc), to collect data about the effectiveness of specific treatments on SRE, and to give information about biological behaviors of BM.

Materials and methods

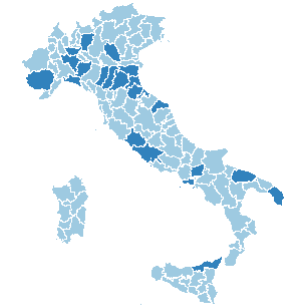


- BM Data Base is a multicenter prospective observational study, which has as Coordinating Center (CC), IRCCS IRST of Meldola. The database will allow to gather information on the medical history of patients with BM using an online software tailored for these data.
- The platform of the database consists of 4 files containing information regarding patient demographics, characteristics of the primary tumors and BM, as well as their evolution, in particular the onset and the types of SRE.

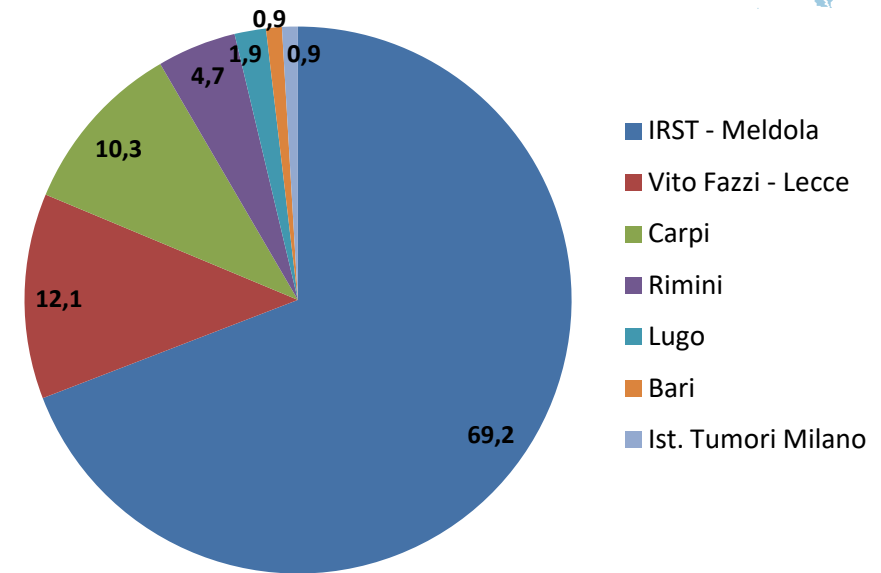


- The data are updated every 6 months by the participating centers and reviewed by CC.
- For this analysis bone metastasis from breast cancer as primary cancer site of disease with at least 6 months of follow up were considered.

Descriptive analysis from Italian Bone Metastases Database

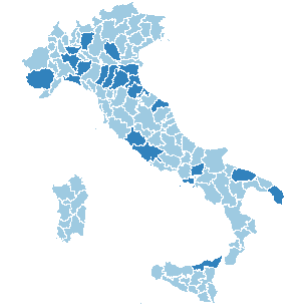


	N of cases	%
Age, median (min, max)	62 (26-86)	
Site of disease		
Axial	50	47,1
Axial + appendicular	45	42,5
Appendicular	5	4,7
Axial + other	2	1,9
Appendicular + other	2	1,9
Other	2	1,9
Unknown	1	
Number of bone lesions		
1	11	10,6
2-6	31	29,8
>6	62	59,6
Unknown	3	
Bone lesions		
Litic	55	61,1
Osteoblastic	20	22,2
Mixed	15	16,7
Unknown	17	
PS ECOG 0-1	77	72,0
Patients with pain at diagnosis	23	21,5
Bone target therapy		
No	28	26,9
Yes	79	73,7
Zoledronato	56	53,2
Denosumab	19	1,8
Other	4	18,7



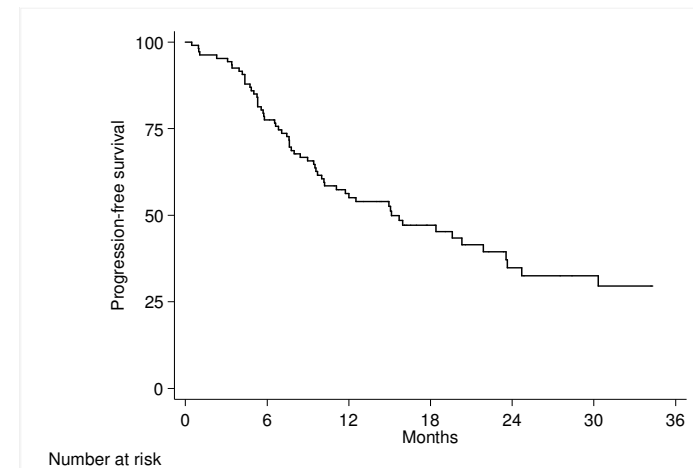
	N of cases	%
SRE at diagnosis		
Radiotherapy	25	59,5
Pathological fracture	13	31,0
Surgery	3	7,1
Spinal cord compression	1	2,4
Unknown	2	

Progression-free survival

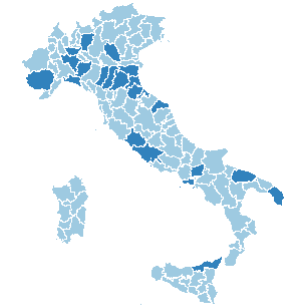


- Median follow-up 20.5 months (range 6.0-93.4)
- 65 Progression of disease observed
- 35 new SRE : 15 fracture (42,9%); 17 RT (48,5%); 1 Spinal cord compression (0,03) 1 bone surgery (0,03)

N° pts (%)	N. events	6 Months PFS (95%CI)	12 Months PFS (95%CI)	18 Months PFS (95%CI)	Median PFS (95%CI)
107	65	77.5 (68.4-84.4)	56.2 (46.0-65.3)	47.1 (36.6-56.7)	15.1 (10.1-23.5)



Conclusions



- BM Data Base is the first Italian multicenter and perspective experience to study the natural history of BM from different neoplasia.
- The recruitment by all participating centers and the quality of the data entered in the database is therefore a key element of this project.
- The analysis of preliminary data will not only provide epidemiological information that will help to better understand the frequency and clinical impact of BM, but also on the patients' quality of life and prognosis as well as indirectly on health care system costs related to them.

An overview of Italian Bone Metastases Database



SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori
Istituto di Ricovero e Cura a Carattere Scientifico



Centro	Responsabile Dr/Prof	Data apertura	n° paz arruolati	Data arruolamento ultimo paziente
IRST Meldola (FC)	Dr. Toni Ibrahim	08/10/2013	232	10/07/2017
Osp. Lugo (RA)	Dr. Enrico Campadelli	14/05/2014	4	29/10/2014
Osp. Rimini (RN)	Dr.ssa Manuela Fantini	06/05/2014	39	21/09/2015
Osp. Vito Fazzi (LE)	Dr.ssa Maria Rosachiara Forcignanò	12/11/2014	27	29/02/2016
Osp. Carpi (MO)	Dr. Fabrizio Artioli	17/02/2014	27	08/06/2017
Policlinico Bari (BA)	Prof. Francesco Silvestris	11/02/2015	42	07/10/2016
Osp. S. Vincenzo Taormina (ME)	Dr. Francesco Ferrà	15/04/2015	4	27/06/2017
AUSL Imola (BO)	Dr. Antonio Maestri	05/05/2015	36	15/11/2016
Osp. Piacenza (PC)	Dr. Luigi Cavanna	16/06/2015	62	26/07/2017
Az. Osp. Benevento (BN)	Dr. Bruno Daniele	25/08/2015	1	05/11/2015
Istituto Tumori Milano (MI)	Dr. Giuseppe Procopio	07/04/2016	20	09/10/2017
AO Ospedali Riuniti di Ancona (AN)	Dr. Rossana Berardi	07/04/2016	8	03/08/2016
Ospedale civile di Legnano (MI)	Dr. Sergio Fava	24/05/2016	1	28/09/2017
TOTALE 503 pazienti al 16 ottobre 2017				
<p>Gli altri centri aperti sono: Policlinico Universitario Campus Biomedico (Roma), IRCCS G. Pascale (NA), Ospedale Sacro Cuore Don Calabria Negrar (VR), Osp. S. Croce e Carle Cuneo (CN), Osp. Cardarelli (NA), IRCCS ASMN Reggio Emilia (RE), Osp. Treviglio (BG), Policlinico San Matteo (PV), Osp. Belcolle (VT), Osp. Galliera (GE), Aosp Ferrara (FE), Ist. Regina Elena (Roma)</p>				



For information about project, please contact:
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 Flavia Foca: flavia.foca@irst.emr.it