Gender difference in pain and patient reported outcomes: a secondary analysis of the NCIC CTG SC.20 randomized trial

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Objective

Assess whether there exists a difference in pain between men and women with advanced cancer

Methods

- Secondary analysis of the NCIC Clinical Trials Group Symptom Control Trial SC.20 (NCIC CTG SC.20), which was a non-blinded, randomized, controlled trial that investigated the efficacy and safety of single versus multiple fraction eirradiation
- Patients were accrued between January 2004 and May 2012 from nine countries
- Adults diagnosed with cancer reporting pain corresponding to sites of previously irradiated, radiologically confirmed bone metastases were eligible
- Scores from the European Organization for Research and Treatment of Cancer (EORTC) Quality of Life Questionnaire Core 30 (QLQ-C30) and Brief Pain Inventory (BPI) at baseline and 2 months post-radiotherapy were analysed
- Subgroup analyses were carried out amongst responders and nonresponders
- Due to multiple comparisons, pvalues less than 0.01 were considered statistically significant

Conclusions

- In cancer patients with bone metastases undergoing reirradiation, there may be a gender difference in pain severity
- There was no significant difference in response to radiation
- Despite equivalent pain responses, women were more likely to report improved QOL after treatment

Results

- There were 847 evaluable patients -499 were men and 358 were women
- mild pain at baseline There was no difference in response
- to radiotherapy at 2 months posttreatment
- Female responders reported better improvement in general activity, mood, walking ability, normal work and relation with other people as opposed to female non-responders
- Male responders noted better improvement in all BPI items
- Female responders recorded better improvement in physical/role/emotional functioning, pain and global quality of life
- Male responders noted similar improvements as female responders

i nere were 847 evaluable patients -	Baseline scores from I	3PI and C	30					
499 were men and 358 were women	BPI							
433 Wele men and 330 Wele Women	Domain	Males		0.00	Females			P value
Males were more likely to experience	General activity	N 460	Mean 5.8	SD 2.9	N 320	Mean 6.1	SD 2.9	0.21
males were more likely to expendince	Mood	460 459	4.3	2.9	320	4.8	2.9	0.21 0.02
mild pain at baseline	Walking ability	457	5.5	3.2	321	5.7	3.2	0.36
mind pain at baseline		453	6.1	3.1	322	6.7	3.1	0.01
Thorowas no difference in recognice	Relationships with	460	3.3	2.9	322	3.3	2.9	0.88
There was no difference in response	others Sleeping	460	4.2	3.1	323	4.5	3.1	0.32
to radiatharany at 2 months noct	Enjoyment of life	460	5.3	3.3	321	5.5	3.3	0.32
to radiotherapy at 2 months post-	EORTC QLQ-C30							
trootmont	Domain	Males	3.6	ar.	Female		c Ex	P value
treatment	Physical functioning	N 317	Mean 50.2	SD 23.8	N 256	Mean 50.0	SD 23.8	0.92
Eamala recognidate reported botton	Role functioning	317	39.4	31.7	257	41.4	31.7	0.43
Female responders reported better	Emotional		64.6	23.8	252	64.7	23.8	0.95
improvement in general activity	functioning	0.45	74.0		0.55	50.0	~	
improvement in general activity,	Cognitive functioning Social functioning		71.8 58.8	24.1 32.2	256 254	72.3 56.6	24.1 32.2	0.81 0.39
mood walking shility narmal work	-	317	55.1	26.8	253	54.5	26.8	0.80
mood, walking ability, normal work	Nausea and vomiting		14.2	21.3	253	16.7	21.3	0.19
and ralation with other poople as	Pain		68.6	24.0	251	71.0	24.0	0.22
and relation with other people as	Dyspnea Sleep		32.1 43.0	32.3 32.5	25 7 253	25.0 41.9	32.3 32.5	0.01 0.70
annocad to famala non roomandara	Appetite		34.4	34.7	252	32.9	34.7	0.70
opposed to female non-responders	Constipation		31.6	34.7	252	29.1	34.7	0.38
Mala rappandara natad hattar	Diarrhea		8.3	19.5	253	9.2	19.5	0.61
Male responders noted better	Financial	313	18.8	30.1	255	24.3	30.1	0.04

Changes in BPI and EORTC OLO-C30 scores at month 2 from baseline

45.6

Global QOL 312

BPI Changes							
Domain	Males			Female	P value		
	N	Mean	SD	N	Mean	SD	
General activity	296	-1.4	3.6	219	-1.6	3.6	0.35
	293	-1.0	3.5	220	-1.6	3.5	0.05
Walking ability	294	-0.8	3.5	219	-1.5	3.5	0.02
Normal work	288	-0.9	3.7	221	-1.7	3.7	0.02
Relationships with	296	-0.7	3.4	219	-0.6	3.4	0.70
others							
Sleeping	297	-1.2	3.3	221	-1.6	3.3	0.18
Enjoyment of life	291	-0.8	3.7	218	-1.5	3.7	0.03
EORTC QLQ-C30 Cl	hanges						
Domain	Males			Famal	A.C		Pwalna

22.8

22.8 0.72

EORTC QLQ-C30 Ch	anges						
Domain	Males			Females			P value
	N	Mean	SD	N	Mean	SD	
Physical functioning	205	-0.2	20.7	169	1.7	20.7	0.38
Role functioning	205	-1.3	32.3	169	5.9	32.3	0.03
Emotional functioning	200	3.8	24.2	165	4.3	24.2	0.86
Cognitive functioning	204	2.2	24.1	168	1.7	24.1	0.83
Social functioning	200	-1.1	31.2	167	5.2	31.2	0.04
Fatigue	204	0.8	25.5	165	-3.8	25.5	0.08
Nausea and vomiting	204	1.3	24.7	164	-2.2	24.7	0.18
Pain	202	-15.7	29.8	159	-17.5	29.8	0.56
Dyspnea	203	1.5	26.4	168	2.6	26.4	0.72
Sleep	203	-10.3	34.7	165	-11.7	34.7	0.71
Appetite	204	2.5	37.6	165	-3.6	37.6	0.11
Constipation	201	-4.8	33.2	164	-5.7	33.2	0.81
Diarrhea	205	5.7	25.0	163	3.3	25.0	0.37
Financial	200	2.7	22.3	168	-1.8	22.3	0.07
Global QOL	196	0.9	24.4	164	3.2	24.4	0.36

Females							
Domain	Responders			Non-	P value		
	N	Mean	SD	N	Mean	SD	
Physical functioning	82	5.6	18.3	87	-2.0	18.3	0.01
Role functioning	82	12.0	28.2	87	0.2	28.2	0.01
Emotional functioning	78	8.9	21.1	87	0.1	21.1	0.01
Cognitive functioning	81	2.5	19.7	87	1.0	19.7	0.66
Social functioning	81	8.0	26.0	86	2.5	26.0	0.19
Fatigue	78	-7.5	26.7	87	-0.5	26.7	0.07
Nausea and vomiting	78	-3.4	21.7	86	-1.2	21.7	0.57
Pain	75	-28.9	27.2	84	-7.3	27.2	< 0.01
Dyspnea	81	2.9	33.0	87	2.3	33.0	0.91
Sleep	78	-16.2	33.4	87	-7.7	33.4	0.1
Appetite	78	-9.8	27.5	87	1.9	27.5	0.03
Constipation	77	-8.7	32.2	87	-3.1	32.2	0.32
Diarrhea	77	7.4	25.1	86	-0.4	25.1	0.06
Financial	81	-1.2	25.5	87	-2.3	25.5	0.78
Global QOL	79	8.2	24.3	85	-1.5	24.3	0.01
Males							
Domain	Resp	onders		Non-1	responders		P value

Financial	81	-1.2	25.5	87	-2.3	25.5	0.78
Global QOL	79	8.2	24.3	85	-1.5	24.3	0.01
Males							
Domain	Resp	onders		Non-r	esponders		P value
	N	Mean	SD	N	Mean	SD	
Physical functioning	90	7.9	18.8	115	-6.4	18.8	< 0.01
Role functioning	90	8.3	32.2	115	-8.8	32.2	< 0.01
Emotional functioning	88	9.4	21.2	112	-0.6	21.2	< 0.01
Cognitive functioning	89	7.7	18.1	115	-2.0	18.1	< 0.01
Social functioning	88	6.3	29.7	112	-6.8	29.7	< 0.01
Fatigue	90	-6.7	24.1	114	6.7	24.1	< 0.01
Nausea and vomiting	90	-1.7	24.0	114	3.7	24.0	0.13
Pain	90	-27.4	26.7	112	-6.3	26.7	< 0.01
Dyspnea	90	1.1	26.2	113	1.8	26.2	0.86
Sleep	89	-15.0	32.6	114	-6.7	32.6	0.09
Appetite	90	-2.2	36.0	114	6.1	36.0	0.11
Constipation	89	-9.0	29.2	112	-1.5	29.2	0.11
Diarrhea	90	5.6	21.9	115	5.8	21.9	0.95
Financial	88	8.0	19.6	112	4.2	19.6	0.28
Global QOL	88	8.0	23.0	108	-4.9	23.0	<0.01

Patient demographics and baseline characteristics

Primary Cancer Site		
Breast	3(0.6)	220(63.4)
Lung	121(24.2)	69(19.9)
Prostate	229(45.8)	0 (0.0)
Others	147(29.4)	58(16.7)
Karnofsky performance status (KPS	5)	
50-60	106 (21.2)	75 (21.6)
70-80	279 (55.8)	187 (53.9)
90-100	107 (21.4)	82 (23.6)
Unknown	8 (1.6)	3 (0.9)
Worst pain score at baseline		
1 to 4	79 (15.8)	23 (6.6)
5 to 8	310 (62.0)	239 (68.9)
9 to 10	96 (19.2)	74 (21.3)
Unknown	15 (3.0)	11 (3.2)
Site of painful bone metastases		
Spine or Head and Neck	183 (36.6)	124 (35.7)
Pelvis/Hips	172 (34.5)	135 (38.9)
Upper or lower limbs	69 (13.8)	60 (17.3)
Superficial bones	75 (15.0)	28 (8.1)
Unknown	1 (0.2)	0 (0.0)
Baseline total daily oral morphine ed	quivalent (OME) (mg	<u>(j)</u>
N	479	337
Mean (SD)	131.6(324.9)	139(291)
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Changes in BPI scores for responders and non-responders

Range

Domain	Males	Males			Females			
	N	Mean	SD	N	Mean	SD		
General activity	123	-2.9	3.4	101	-2.6	3.4	0.53	
Mood	123	-2.3	3.1	101	-2.4	3.1	0.75	
Walking ability	122	-2.1	3.4	100	-2.2	3.4	0.88	
Normal work	122	-2.2	3.5	102	-2.5	3.5	0.43	
Relationships with	123	-1.8	3.0	101	-1.3	3.0	0.18	
others								
Sleeping	123	-2.1	2.9	102	-2.1	2.9	0.95	
Enjoyment of life	120	-2.2	3.0	102	-1.9	3.0	0.42	
Non-responders								
Domain	Males			Fema	les		P value	
	N	Mean	SD	N	Mean	SD		
General activity	173	-0.3	3.3	118	-0.8	3.3	0.15	
Mood	170	-0.1	3.4	119	-0.9	3.4	0.04	
Walking ability	172	0.1	3.3	119	-1.0	3.3	< 0.01	
Normal work	166	0.0	3.6	119	-1.0	3.6	0.02	
Relationships with	173	0.1	3.4	118	0.0	3.4	0.88	
others								
Sleeping	174	-0.6	3.5	119	-1.3	3.5	0.12	
Enjoyment of life	171	0.2	3.8	116	-1.1	3.8	< 0.01	

0-4130

0-3120

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