Gender difference in pain and patient reported outcomes: a secondary analysis of the NCIC CTG SC.23 randomized trial

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Objective		Methods		Conclusions
Explore the gender difference in pain and patient reported outcomes in cancer patients with bone metastases undergoing palliative	•	Patients at least 18 years of age and receiving a single 8Gy dose of radiation for bone metastases at one or two locations were enrolled in a double-blind, placebo controlled study across 23 Canadian cancer centres Within 7 days before treatment, and at 10 and 42 days after treatment, patients completed the European Organization for Research and Treatment of Cancer (EORTC) Quality of Life Bone Metastases Module (QLQ-BM22) and the EORTC Quality of Life Core-15-Palliative (QLQ-C15- PAL) Comparisons of patient demographics, performance status, analgesic consumption, BM22 and C15 were compared between the two genders	•	There exists limited differences Men and women should be considered equally in consideration for palliative radiotherapy for painful bone metastases

radiotherapy

Subgroup analysis was conducted between responders and nonresponders to radiotherapy

Results

	Males, N (%)	Females, N (%)	Total, N (%)
Baseline worst pain score	e (WPS)		
WPS 1-5	61 (35.9)	47 (36.7)	108 (36.2)
WPS 6	18 (10.6)	14 (10.9)	32 (10.7)
WPS 7-10	91 (53.5)	67 (52.3)	158 (53.0)
Karnofsky performance	status		
40-60	44 (25.9)	24 (18.8)	68 (22.8)
70-80	86 (50.6)	79 (61.7)	165 (55.4)
90-100	40 (23.5)	25 (19.5)	65 (21.8)
First palliative radiother	apy treatment site		
Vertebrae	57 (33.5)	46 (35.9)	103 (34.6)
Pelvis/Hips	49 (28.8)	43 (33.6)	92 (30.9)
Others	64 (37.6)	39 (30.5)	103 (34.6)
Primary cancer site*			
Lung	45 (26.5)	39 (30.5)	84 (28.2)
Prostate	74 (43.5)	0 (0.0)	74 (24.8)
Breast	1 (0.6)	65 (50.8)	66 (22.1)
Other	50 (29.4)	24 (18.8)	74 (24.8)
Baseline total daily OME	(oral morphine equ	uivalent) (mg)	
Ν	165 (56.9)	125 (43.1)	290
Mean	91.2	37.9	83.8
Standard deviation	311.7	185.1	264.4
Median	20	20	20
Range	0-3750	0-1740	0-3750

Moderate pain, QLQ-BM22							
Domain	Males			Fema	les		P-value
	Ν	Mean	SD	Ν	Mean	SD	
Painful sites	16	31.3	12.4	14	47.6	19.9	0.01
Painful characteristics	16	43.1	21.4	14	57.9	23.9	0.08
Functional interference	16	58.1	16.6	14	45.8	22.6	0.10
Psychosocial aspect	16	56.6	14.9	14	44.4	17.7	0.05
Moderate pain, QLQ-C15-H	PAL						
Domain	Males			Fema	les		P-value
	Ν	Mean	SD	Ν	Mean	SD	
Physical	16	72.2	22.6	14	69.8	25.2	0.79
Emotional	16	83.3	19.3	14	67.9	32.3	0.12
Global QOL	16	41.7	21.1	14	53.6	19.8	0.12
Pain	15	63.3	22.0	14	67.9	26.5	0.62
Fatigue	16	40.6	23.6	14	46.4	29.4	0.55
Nausea and vomiting	15	13.3	16.9	14	19.1	36.3	0.59
Dyspnea	16	18.8	32.1	14	19.1	21.5	0.98
Insomnia	16	31.3	19.1	14	54.8	40.5	0.05
Appetite	16	37.5	34.2	14	40.5	41.7	0.83
Constipation	16	31.3	35.4	14	45.2	36.1	0.29
Severe pain, QLQ-BM22							
Domain	Males			Fema	les		P-value
	Ν	Mean	SD	Ν	Mean	SD	
Painful sites	87	38.5	16.6	63	41.0	18.8	0.41
Painful characteristics	87	51.5	21.3	63	54.9	20.6	0.32
Functional interference	87	43.2	21.3	63	39.0	21.5	0.24
Psychosocial aspect	87	45.8	18.1	63	45.3	19.7	0.88
Severe pain, QLQ-C15-PAI							
Domain	Males			Fema	les		P-value
	Ν	Mean	SD	Ν	Mean	SD	
Physical	87	70.4	26.2	63	63.3	26.7	0.11
Emotional	87	63.2	27.6	63	65.3	25.3	0.63
Global QOL	86	42.3	21.8	63	41.5	22.2	0.84
Pain	86	73.1	23.7	63	73.8	22.5	0.85
Fatigue	87	52.9	27.5	63	51.3	27.5	0.73
Nausea and vomiting	87	19.5	29.0	63	30.7	33.0	0.03
Dyspnea	87	30.3	30.3	62	27.4	31.7	0.58
Insomnia	87	39.9	32.9	63	39.2	34.7	0.90
Appetite	87	37.9	37.4	63	42.9	37.1	0.43
		40.3		62	43.6	37.5	0.60

- 298 patients (170 males, 128 females) were accrued
 - Females with severe pain reported worse nausea and vomiting scores at baseline
 - There were no differences between males and females in response to radiotherapy when evaluating at day 42
 - No difference existed between males and females in change of QOL from baseline to day 42 except for the psychosocial aspect in the QLQ-BM22 questionnaire (higher proportion of males reported a change)

Baseline BM22 and QLQ-C15-PAL scores.

QLQ-BM22							
Domain	Male	s		Fema	ıles		P-value*
	Ν	Mean	SD	Ν	Mean	SD	
Painful sites	161	34.3	16.9	121	36.8	19.1	0.25
Painful characteristics	161	44.5	21.8	121	47.5	22.5	0.25
Functional interference	161	51.0	22.3	121	47.9	23.4	0.26
Psychosocial aspect	161	51.0	19.1	121	49.2	20.5	0.45
QLQ-C15-PAL							
Domain	Male	!S		Fema	ıles		P-value
	Ν	Mean	SD	Ν	Mean	SD	
Physical	161	75.0	24.9	121	70.9	25.4	0.17
Emotional	160	69.5	27.6	121	68.3	25.5	0.72
Global QOL	158	47.6	23.3	121	49.2	23.3	0.57
Pain	159	62.4	26.9	120	65.3	25.3	0.36
Fatigue	160	46.9	27.4	120	46.3	28.0	0.85
Nausea and vomiting	160	15.4	26.1	121	22.9	30.4	0.03
Dyspnea	161	25.5	28.8	120	22.2	28.5	0.35

Change in quality of life amon	g responders and non-responder
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Responders, QLQ	2-вм22						
Domain	Male, N (%	6)		Female, N	(%)		P-value*
	Improved	Stable	Worsened	Improved	Stable	Worsened	
Painful sites	33 (54.1)	23 (37.1)	5 (8.2)	26 (63.4)	13 (31.7)	2 (4.9)	0.60
Pain	43 (70.5)	10 (16.4)	8 (13.1)	31 (75.6)	7 (17.1)	3 (7.3)	0.65
characteristics							
Functional	40 (65.6)	16 (26.2)	5 (8.2)	26 (63.4)	14 (34.1)	1 (2.4)	0.38
interference							
Psychosocial	29 (47.5)	15 (24.6)	17 (27.9)	14 (34.1)	20 (48.8)	7 (17.1)	0.04
aspect Responders, QLQ		-					
Domain				Fomala N	(04)		P-value*
Domain	Male, N (% Improved	Stable	Worsened	Female, N Improved	Stable	Worsened	r-value
Dhavioal	*			1			0.42
Physical		25 (41.7)	12 (20.0)	18 (43.9)	12 (29.3)	11 (26.8)	0.43
Emotional		18 (29.5)	15 (24.6)	23 (56.1)	16 (39.0)	2 (4.9)	0.03
Global QOL	29 (49.2)	17 (28.8)	13 (22.0)	27 (65.9)	8 (19.5)	6 (14.3)	0.25
Pain	38 (65.5)	13 (22.4)	7 (12.1)	33 (80.5)		3 (7.3)	0.26
Fatigue	26 (42.6)	22 (36.1)	13 (21.3)	17 (41.5)	13 (31.7)	11 (26.8)	0.79
Nausea and vomiting	10 (16.4)	39 (63.9)	12 (19.7)	10 (24.4)	23 (56.1)	8 (19.5)	0.59
Dyspnea	15 (24.6)	36 (59.0)	10 (16.4)	7 (17.1)	27 (65.9)	7 (17.1)	0.66
Insomnia	22 (36.1)	30 (49.2)	9 (14.8)	14 (34.1)	20 (48.8)	7 (17.1)	0.95
Appetite	11 (18.0)	37 (60.7)	13 (21.3)	12 (29.3)	22 (53.7)	7 (17.1)	0.41
Constipation	21 (34.4)	31 (50.8)	9 (14.8)	13 (31.7)	23 (56.1)	5 (12.2)	0.86
Non-responders,	1 1	1 2	7 (11.0)	15 (51.7)	23 (30.1)	5 (12.2)	0.00
Domain	Male, N (%			Female, N	(%)		P-value*
Domain		<i>,</i>	Worsened	Improved	Stable	Worsened	i value
	Improved	JIAUIC	10 M A M 17 A H H A A A A	THE REPORT OF A DESCRIPTION OF A			
Doinful sites	Improved	Stable		-			0.61
Painful sites	15 (30.6)	19 (38.8)	15 (30.6)	21 (39.6)	19 (35.8)	13 (24.8)	0.61
Pain	*			-			0.61 0.60
Pain characteristics	15 (30.6) 27 (55.1)	19 (38.8) 10 (20.4)	15 (30.6) 12 (24.5)	21 (39.6) 24 (45.3)	19 (35.8) 14 (26.4)	13 (24.8) 15 (28.3)	0.60
Pain	15 (30.6)	19 (38.8)	15 (30.6)	21 (39.6)	19 (35.8)	13 (24.8)	
Pain characteristics Functional	15 (30.6) 27 (55.1)	19 (38.8) 10 (20.4)	15 (30.6) 12 (24.5)	21 (39.6) 24 (45.3)	19 (35.8) 14 (26.4)	13 (24.8) 15 (28.3)	0.60
Pain characteristics Functional interference Psychosocial aspect	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5)	15 (30.6) 12 (24.5) 9 (18.4)	21 (39.6) 24 (45.3) 23 (43.4)	19 (35.8) 14 (26.4) 20 (37.7)	13 (24.8) 15 (28.3) 10 (18.9)	0.60 0.93
Pain characteristics Functional interference Psychosocial aspect Non-responders,	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) PAL	15 (30.6) 12 (24.5) 9 (18.4)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2)	13 (24.8) 15 (28.3) 10 (18.9)	0.60 0.93 0.04
Pain characteristics Functional interference Psychosocial aspect	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (%	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL (6)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6)	0.60 0.93
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (% Improved	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%) Stable	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened	0.60 0.93 0.04 P-value*
Pain characteristics Functional interference Psychosocial aspect Non-responders,	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (9 Improved 8 (16.3)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable 14 (28.6)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved 17 (32.1)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%) Stable 13 (24.5)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4)	0.60 0.93 0.04 P-value* 0.18
Pain characteristics Functional interference Psychosocial <u>aspect</u> Non-responders, Domain Physical Emotional	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (% Improved	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) PAL 6) Stable 14 (28.6) 16 (32.7)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8)	0.60 0.93 0.04 P-value* 0.18 0.92
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (9 Improved 8 (16.3) 14 (28.6) 10 (20.4)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable 14 (28.6) 16 (32.7) 20 (40.8)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 18 (34.0)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL Pain	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (% Improved 8 (16.3) 14 (28.6) 10 (20.4) 21 (42.9)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable 14 (28.6) 16 (32.7) 20 (40.8) 15 (30.6)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8) 13 (26.5)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 18 (34.0) 29 (55.8)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8) 13 (25.0)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2) 10 (19.2)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30 0.42
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL Pain Fatigue	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (% Improved 8 (16.3) 14 (28.6) 10 (20.4) 21 (42.9) 9 (19.1)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable 14 (28.6) 16 (32.7) 20 (40.8) 15 (30.6) 13 (27.7)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8) 13 (26.5) 25 (53.2)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 18 (34.0) 29 (55.8) 13 (24.5)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8) 13 (25.0) 13 (24.5)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2) 10 (19.2) 27 (50.9)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30 0.42 0.80
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL Pain	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (% Improved 8 (16.3) 14 (28.6) 10 (20.4) 21 (42.9) 9 (19.1)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable 14 (28.6) 16 (32.7) 20 (40.8) 15 (30.6)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8) 13 (26.5)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 18 (34.0) 29 (55.8)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8) 13 (25.0)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2) 10 (19.2)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30 0.42
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL Pain Fatigue Nausea and	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (9 Improved 8 (16.3) 14 (28.6) 10 (20.4) 21 (42.9) 9 (19.1) 7 (14.3)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable 14 (28.6) 16 (32.7) 20 (40.8) 15 (30.6) 13 (27.7)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8) 13 (26.5) 25 (53.2)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 18 (34.0) 29 (55.8) 13 (24.5)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8) 13 (25.0) 13 (24.5)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2) 10 (19.2) 27 (50.9)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30 0.42 0.80
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL Pain Fatigue Nausea and vomiting	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (9 Improved 8 (16.3) 14 (28.6) 10 (20.4) 21 (42.9) 9 (19.1) 7 (14.3) 2 (4.1)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL 6) Stable 14 (28.6) 16 (32.7) 20 (40.8) 15 (30.6) 13 (27.7) 32 (65.3)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8) 13 (26.5) 25 (53.2) 10 (20.4)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 18 (34.0) 29 (55.8) 13 (24.5) 13 (24.5)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8) 13 (25.0) 13 (24.5) 13 (24.5) 22 (41.5)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2) 10 (19.2) 27 (50.9) 18 (34.0)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30 0.42 0.80 0.06
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL Pain Fatigue Nausea and vomiting Dyspnea	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (% Improved 8 (16.3) 14 (28.6) 10 (20.4) 21 (42.9) 9 (19.1) 7 (14.3) 2 (4.1) 13 (27.1)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) AL (6) Stable 14 (28.6) 16 (32.7) 20 (40.8) 15 (30.6) 13 (27.7) 32 (65.3) 38 (77.6)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8) 13 (26.5) 25 (53.2) 10 (20.4) 9 (18.4)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 17 (32.1) 18 (34.0) 29 (55.8) 13 (24.5) 13 (24.5) 13 (24.5) 13 (24.5)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8) 13 (25.0) 13 (25.0) 13 (24.5) 22 (41.5) 22 (41.5)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2) 10 (19.2) 27 (50.9) 18 (34.0) 13 (25.0)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30 0.42 0.80 0.06 0.06 0.02
Pain characteristics Functional interference Psychosocial aspect Non-responders, Domain Physical Emotional Global QOL Pain Fatigue Nausea and vomiting Dyspnea Insomnia	15 (30.6) 27 (55.1) 23 (46.9) 17 (34.7) QLQ-C15-H Male, N (9 Improved 8 (16.3) 14 (28.6) 10 (20.4) 21 (42.9) 9 (19.1) 7 (14.3) 2 (4.1) 13 (27.1) 8 (16.3)	19 (38.8) 10 (20.4) 17 (34.7) 12 (24.5) 12 (24.5) AL 6) Stable 14 (28.6) 16 (32.7) 20 (40.8) 15 (30.6) 13 (27.7) 32 (65.3) 38 (77.6) 21 (43.8)	15 (30.6) 12 (24.5) 9 (18.4) 20 (40.8) Worsened 27 (55.1) 19 (38.8) 19 (38.8) 19 (38.8) 13 (26.5) 25 (53.2) 10 (20.4) 9 (18.4) 14 (29.2)	21 (39.6) 24 (45.3) 23 (43.4) 16 (30.2) 16 (30.2) 16 (30.2) Female, N Improved 17 (32.1) 17 (32.1) 17 (32.1) 17 (32.1) 17 (32.1) 17 (32.1) 17 (32.1) 17 (32.1) 17 (32.1) 13 (24.5) 13 (24.5) 13 (24.5) 13 (24.5) 13 (24.5) 13 (24.5) 13 (24.5)	19 (35.8) 14 (26.4) 20 (37.7) 25 (47.2) 25 (47.2) (%) Stable 13 (24.5) 17 (32.1) 19 (35.8) 13 (25.0) 13 (25.0) 13 (24.5) 22 (41.5) 22 (41.5) 28 (53.8) 34 (64.2)	13 (24.8) 15 (28.3) 10 (18.9) 12 (22.6) Worsened 23 (43.4) 19 (35.8) 16 (30.2) 10 (19.2) 27 (50.9) 18 (34.0) 13 (25.0) 9 (17.0)	0.60 0.93 0.04 P-value* 0.18 0.92 0.30 0.42 0.30 0.42 0.80 0.06 0.02 0.12

Dyspnea	101	23.5	28.8	120	22.2	28.0	0.55
Insomnia	161	36.7	31.0	121	37.5	34.3	0.83
Appetite	161	31.5	34.8	121	38.0	37.1	0.13
Constipation	160	31.3	33.6	120	36.1	36.8	0.25
*The 2-sample T-test wa	is used	to calc	ulate P v	alues.			

Statistically significant differences are bolded.

Radiation response in males and females evaluated at 42-days post treatment.

Pain	Males, N (%	b)	Females, N	(%)	P-value*	
	Responders	Non-responders	Responders	Non-responders		
All patients	70 (41.2)	100 (58.8)	46 (35.9)	82 (64.1)	0.36	
Mild pain	26 (42.6)	35 (57.4)	23 (48.9)	24 (51.1)	0.51	
Moderate pain	8 (44.4)	10 (55.6)	4 (28.6)	10 (71.4)	0.36	
Severe pain	36 (39.6)	55 (60.4)	19 (28.4)	48 (71.6)	0.14	

*The Chi-squared test was used to calculate P values.

Change in qua	lity of life e	valuated at	t 42-days nos	st treatment	t.		
QLQ-BM22	inty of file c	, aruaica ai	- +2 unys po.	or or carment			
Domain	Male, N (%	%)		Female, N	(%)		P-value*
	Improved	Stable	Worsened	Improved	Stable	Worsened	
Painful sites	48 (43.6)	42 (38.2)	20 (18.2)	47 (50.0)	32 (34.0)	15 (16.0)	0.662
Pain	70 (63.6)	20 (18.2)	20 (18).2	55 (58.5)	21 (22.3)	18 (19.1)	0.712
characteristics							
Functional	63 (57.3)	33 (30.0)	14 (12.7)	49 (52.1)	34 (36.2)	11 (11.7)	0.646
interference							
Psychosocial	46 (41.8)	27 (24.5)	37 (33.6)	30 (31.9)	45 (47.6)	19 (20.2)	0.002
aspect							
QLQ-C15-PA	L						
Domain	Male, N (%	%)		Male, N (%	P-value		
	Improved	Stable	Worsened	Improved	Stable	Worsened	Improved
Physical	31 (28.4)	39 (35.8)	39 (35.8)	35 (37.2)	25 (26.6)	34 (36.2)	0.279
	51 (20.1)			· · · ·		N 2	
Emotional	42 (38.2)	34 (30.9)	34 (30.9)	40 (42.6)	33 (35.1)	21 (22.3)	0.388
Emotional Global		34 (30.9) 37 (34.3)	34 (30.9) 32 (29.6)				0.388 0.236
	42 (38.2)	37 (34.3)		40 (42.6) 45 (47.9)	33 (35.1)	21 (22.3) 22 (23.4)	
Global	42 (38.2) 39 (36.1)	37 (34.3) 28 (26.2)	32 (29.6)	40 (42.6) 45 (47.9) 62 (66.7)	33 (35.1) 27 (28.7)	21 (22.3) 22 (23.4) 13 (14.0)	0.236
Global Pain	42 (38.2) 39 (36.1) 59 (55.1)	37 (34.3) 28 (26.2) 35 (32.4)	32 (29.6) 20 (18.7)	40 (42.6) 45 (47.9) 62 (66.7)	33 (35.1) 27 (28.7) 18 (19.4)	21 (22.3) 22 (23.4) 13 (14.0) 38 (40.4)	0.236 0.251
Global Pain Fatigue	42 (38.2) 39 (36.1) 59 (55.1) 35 (32.4)	37 (34.3) 28 (26.2) 35 (32.4)	32 (29.6) 20 (18.7) 38 (35.2)	40 (42.6) 45 (47.9) 62 (66.7) 30 (31.9)	33 (35.1) 27 (28.7) 18 (19.4) 26 (27.7)	21 (22.3) 22 (23.4) 13 (14.0) 38 (40.4)	0.236 0.251 0.689
Global Pain Fatigue Nausea and vomiting	42 (38.2) 39 (36.1) 59 (55.1) 35 (32.4) 17 (15.5)	37 (34.3) 28 (26.2) 35 (32.4) 71 (64.5)	32 (29.6) 20 (18.7) 38 (35.2)	40 (42.6) 45 (47.9) 62 (66.7) 30 (31.9) 23 (24.5)	33 (35.1) 27 (28.7) 18 (19.4) 26 (27.7) 45 (47.9)	21 (22.3) 22 (23.4) 13 (14.0) 38 (40.4) 26 (27.7)	0.236 0.251 0.689 0.054
Global Pain Fatigue Nausea and vomiting Dyspnea	42 (38.2) 39 (36.1) 59 (55.1) 35 (32.4) 17 (15.5) 17 (15.5)	37 (34.3) 28 (26.2) 35 (32.4) 71 (64.5) 74 (67.3)	32 (29.6) 20 (18.7) 38 (35.2) 22 (20.0)	40 (42.6) 45 (47.9) 62 (66.7) 30 (31.9) 23 (24.5) 18 (19.4)	33 (35.1) 27 (28.7) 18 (19.4) 26 (27.7) 45 (47.9) 55 (59.1)	21 (22.3) 22 (23.4) 13 (14.0) 38 (40.4) 26 (27.7) 20 (21.5)	0.236 0.251 0.689 0.054
Global Pain Fatigue Nausea and vomiting Dyspnea Insomnia	42 (38.2) 39 (36.1) 59 (55.1) 35 (32.4) 17 (15.5) 17 (15.5) 35 (32.1)	37 (34.3) 28 (26.2) 35 (32.4) 71 (64.5) 74 (67.3) 51 (47.8)	32 (29.6) 20 (18.7) 38 (35.2) 22 (20.0) 19 (17.3)	40 (42.6) 45 (47.9) 62 (66.7) 30 (31.9) 23 (24.5) 18 (19.4) 24 (25.5)	33 (35.1) 27 (28.7) 18 (19.4) 26 (27.7) 45 (47.9) 55 (59.1) 54 (57.4)	21 (22.3) 22 (23.4) 13 (14.0) 38 (40.4) 26 (27.7) 20 (21.5) 16 (17.0)	0.236 0.251 0.689 0.054 0.487
Global Pain Fatigue Nausea and vomiting Dyspnea Insomnia	42 (38.2) 39 (36.1) 59 (55.1) 35 (32.4) 17 (15.5) 17 (15.5) 35 (32.1) 19 (17.3)	37 (34.3) 28 (26.2) 35 (32.4) 71 (64.5) 74 (67.3) 51 (47.8) 58 (52.7)	32 (29.6) 20 (18.7) 38 (35.2) 22 (20.0) 19 (17.3) 23 (21.1) 33 (30.0)	40 (42.6) 45 (47.9) 62 (66.7) 30 (31.9) 23 (24.5) 18 (19.4) 24 (25.5) 26 (27.7)	33 (35.1) 27 (28.7) 18 (19.4) 26 (27.7) 45 (47.9) 55 (59.1) 54 (57.4) 41 (43.6)	21 (22.3) 22 (23.4) 13 (14.0) 38 (40.4) 26 (27.7) 20 (21.5) 16 (17.0) 27 (28.7)	0.236 0.251 0.689 0.054 0.487 0.317

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