QUALITY OF LIFE IN METASTATIC BREAST CANCER: COMPARING PATIENTS WITH MAJOR DEPRESSIVE EPISODES WITH PATIENTS WITHOUT M.I.N.I. DIAGNOSIS

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Abstract

Aim. *To compare the quality of life indicators in patients with metastatic breast cancer diagnosed with major depressive episodes with those in patients with no psychiatric diagnosis.*

Patients and methods. *We conducted a cross-sectional, observational study at the Day Care Unit of the Oncology Institute "Ioan Chiricuţă" Cluj-Napoca in a group of 100 patients with metastatic breast cancer, during chemotherapy. General data were collected and the patients received a complete psychiatric evaluation, in conjunction with a structured interview and an oncology designed quality of life questionnaire.*

Results. *The rate of major depressive episodes in the group was 29.30%. The patients with major depressive episodes had lower adjusted mean scores for physical, emotional, social and role functioning and higher adjusted mean scores for fatigue, nausea and vomiting, pain, dyspnea, insomnia, appetite loss and constipation than those without diagnosis. The quality of life/global health status scores were significantly lower in the depressive patients group, and the same results were noted for sexual functioning and enjoyment mean scores, as well as for the future perspective.*

Conclusions. *These results suggest that patients with metastatic breast cancer and major depressive episodes have an impaired quality of life as compared to those without psychiatric diagnosis.*

Keywords: breast cancer, major depression, quality of life.

Introduction

The quality of life of oncologic patients is significantly influenced by their psychiatric co-morbidities. Major depressive episodes (MDE), with a reported prevalence of 14.3% in cancer patients [1], increase the subjective distress, impact on the patient's adherence to specific therapies [2] and are considered to prolong the time spent in medical care units [3], and reduce survival rates of malignancy suffering patients [4,5,6]. They also impact on the quality of life, aggravating the fatigue, the insomnia and the appetite loss, and also influence emotional, social and physical functioning [7].

Considering these issues, the correct approach of this psychiatric disorder should become one of the main goals of a complex interdisciplinary evaluation of breast cancer patients.

Manuscript received: 17.08.2013
Accepted: 02.09.2013
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Aims

The main objective of the study was to compare the quality of life aspects of metastatic breast cancer patients undergoing chemotherapy, from the perspective of the presence or the absence of an associated MDE.

Patients and methods

A number of 100 successive metastatic breast cancer patients undergoing chemotherapy in the Day Care Unit of the Oncology Institute "Ioan Chiricuţă" Cluj-Napoca were evaluated, all having stage IV breast cancer and informed of the prognosis of the disease. Exclusion criteria were age under 18, brain metastasis, psychotropic medication use in the last 6 months, substance abuse or addiction, potentially neurotoxic drugs, others than cancer therapies, unable or unwilling to sign the informed consent. One patient was subsequently excluded as she proved to have had brain metastasis. General recorded data are mentioned in table I.

Table I. General data.

Socio-demographic 1. Age (years) 2. Living environment 3. Marital status 4. Preexisting financial difficulties 5. Social support
Cancer history 1. Time since diagnosis (months) 2. Time since recurrence (months) 3. Metastasis site
Cancer therapy history 1. Type of surgery (mastectomy/breast conserving) 2. Type of therapy (chemotherapy/radiotherapy/combined) 3. Dexamethasone premedication (yes/no) 4. Opioids administration (yes/no)
Other 1. Somatic co-morbidities

The psychiatric diagnosis was established according to the criteria of the American Psychiatric Association in the Diagnosis and Statistical Manual of Mental Disorders - fourth edition text revised (DSM-IV TR) [8] in correlation with the Romanian version of Mini International Neuropsychiatric Interview 6 (M.I.N.I. 6), with the additional section for adjustment disorders, extracted from M.I.N.I. 6 Plus, translated and validated with author's permission. For the evaluation of the quality of life the patients were asked to answer the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30), version 3.0 and the supplementary breast module (QLQ-BR23) [9].

Data were analyzed using the Statistical Pack for Social Sciences (SPSS), version 13.0, including the t-Student test for equality of means, and the non-parametric Mann-Whitney test for independent groups. We compared the scores of the quality of life scales in the group of major depressive episode with those without M.I.N.I. 6 diagnosis. The variable distribution was tested with Skewness and Kurtosis and the differences between groups were evaluated using the chi-square test. The adjusted means were compared using the general linear model. The study was approved by the Ethics Committee of the University of Medicine and Pharmacy "Iuliu Haţieganu" Cluj-Napoca.

Results

The age mean in the group was 56.07 years, with a Standard Deviation (SD) of 9.988. General data results are presented in table II.

The most frequent metastasis location was bones. The majority of subjects had undergone mastectomy (74.7%) and both chemo and radiotherapy (85%), and 73.7% were administered dexamethasone the day prior to evaluation (8 to 24 mgs/day). Opioids were part of the therapeutic plan in 29.3% of subjects and 34 patients suffered from co-morbid hypertension, diabetes, asthma, ischemic heart disease, obesity and dyslipidemia.

Table II. Living environment, marital status and social support.

	Number	Percent
Living environment		
Urban	79	79.8
Rural	20	20.2
Marital status		
Unmarried	9	9.1
Married	68	68.7
Divorced	8	8.1
Widow	14	14.1
Social support		
No	20	20.2
Yes	79	79.8
Total	99	100.0

According to the structured interview and to the DSM-IV TR, the psychiatric disorders identified in the study group were those mentioned in the figure 1.

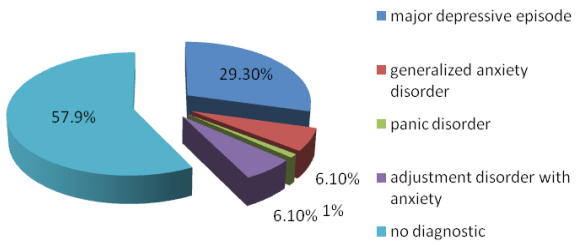

Figure 1. M.I.N.I.6 diagnosis.

We found statistically significant differences between the two groups concerning the living environment, the marital status, the social support, the metastasis site, the surgery type, the specific therapies, the dexamethasone and opioids use and the somatic co-morbidities (table III).

Considering trial reports mentioning that these factors influence the quality of life indicators [10,11,12,13,14], the adjusted means for the above parameters of the EORTC QLQ-C30 and QLQ-BR 23 scales were calculated and compared between the two subgroups. The adjusted mean scores of the functional scales were significantly lower for the depressed subjects group for physical, role, emotional and social functioning (table IV).

For the symptom scales within the QLQ C-30 questionnaire, statistically significant differences were documented, as presented in table V.

As expected, the adjusted mean scores for quality of life/general health status were significantly lower in the group with depressive patients, with a Mann-Whitney test p value of 0.006.

The functional and symptom scales from the QLQ-BR 23 module were also compared between the two subgroups, with significant differences for the items mentioned in table VI.

Table III. Significantly different parameters.

			M.I.N.I. diagnosis		Total
			without	MDE	
Environment	urban	Count % within diagnostic M.I.N.I	49 (86.0%)	22 (75.9%)	71 (82.6%)
p<0.0001	rural	Count % within diagnostic M.I.N.I	8 (14.0%)	7 (24.1%)	15 (17.4%)
	unmarried	Count % within diagnostic M.I.N.I	5 (8.8%)	4 (13.8%)	9 (10.5%)
Marital status	married	Count % within diagnostic M.I.N.I	39 (68.4%)	19 (65.5%)	58 (67.4%)
p<0.0001	divorced	Count % within diagnostic M.I.N.I	3 (5.3%)	4 (13.8%)	7 (8.1%)
	widow	Count % within diagnostic M.I.N.I	10 (17.5%)	2 (6.9%)	12 (14.0 %)
Social support	no	Count % within diagnostic M.I.N.I	9 (15.8%)	8 (27.6%)	17 (19.8%)
p<0.0001	yes	Count % within diagnostic M.I.N.I	48 (84.2%)	21 (72.4%)	69 (80.2%)
	lung	Count % within diagnostic M.I.N.I	6 (10.5%)	2 (6.9%)	8 (9.3%)
Metastasis site	bone	Count % within diagnostic M.I.N.I	26 (45.6%)	19 (65.5%)	45 (52.3%)
p<0.0001	liver	Count % within diagnostic M.I.N.I	6 (10.5%)	2 (6.9%)	8 (9.3%)
	multiple	Count % within diagnostic M.I.N.I	19 (33.3%)	6 (20.7%)	25 (29.1%)
	without	Count % within diagnostic M.I.N.I	7 (12.3%)	5 (17.2%)	12 (14.0%)
Surgery	breast conserving	Count % within diagnostic M.I.N.I	8 (14.0%)	2 (6.9%)	10 (11.6%)
p<0.0001	mastectomy	Count % within diagnostic M.I.N.I	42 (73.7%)	22 (75.9%)	64 (74.4%)
Specific therapy	chemotherapy	Count % within diagnostic M.I.N.I	6 (10.5%)	7 (24.1%)	13 (9.3%)
p<0.0001	combined	Count % within diagnostic M.I.N.I	51 (89.5%)	22 (75.9%)	73 (84.9%)
Dexamethasone	yes	Count % within diagnostic M.I.N.I	17 (29.8%)	6 (20.7%)	23 (26.7%)
p<0.0001	no	Count % within diagnostic M.I.N.I	40 (70.2%)	23 (79.3%)	63 (73.3%)
Opioids	no	Count % within diagnostic M.I.N.I	46 (80.7%)	17 (58.6%)	63 (73.3%)
p<0.0001	yes	Count % within diagnostic M.I.N.I	11 (19.3%)	12 (41.4%)	23 (26.7%)
Co-morbidities	no	Count % within diagnostic M.I.N.I	39 (68.4%)	40 (69.0%)	79 (68.7%)
p<0.0001	yes	Count % within diagnostic M.I.N.I	18 (31.6%)	18 (31.0%)	36 (31.3%)

Table IV. Functional QLQ C-30 scales.

Adjusted values*	M.I.N.I. 6 diagnostic	N	Mean	SD	p
Physical functioning	Without	57	69.5706	16.30332	**0.032**
	MDE	29	62.0988	11.92021	
Role functioning	Without	57	56.5939	22.38332	**0.002**
	MDE	29	39.3289	24.7091	
Emotional functioning	Without	57	79.0822	12.25850	**0.000**
	MDE	29	59.8023	17.30494	
Social functioning	Without	57	61.5194	18.26168	**0.000**
	MDE	29	45.1633	16.59108	

*Adjustment made for living environment, marital status, social support, metastasis site, surgery type, specific therapies, dexamethasone and opioids use, somatic comorbidities.
*p significant when <0.05

Table V. Symptom QLQ C-30 scales.

Adjusted values*	M.I.N.I. 6 diagnostic	N	Mean	SD	p
Fatigue	Without	57	37.4560	16.92506	**0.000**
	MDE	29	54.7204	16.78855	
Nausea and vomiting	Without	57	13.5221	13.61682	**0.001**
	MDE	29	25.1403	18.73474	
Pain	Without	57	37.2928	20.09162	**0.001**
	MDE	29	51.9666	18.15807	
Dyspnea	Without	57	20.3837	23.68669	**0.049**
	MDE	29	31.1945	23.65868	
Insomnia	Without	57	34.0131	28.48857	**0.002**
	MDE	29	56.1293	31.90997	
Appetite loss	Without	57	22.8285	21.83413	**0.016**
	MDE	29	39.8209	32.95147	

*Adjustment made for living environment, marital status, social support, metastasis site, surgery type, specific therapies, dexamethasone and opioids use, somatic co-morbidities.

Table VI. The QLQ-BR23 scales.

Adjusted values*	M.I.N.I. 6 diagnosis	N	Mean	SD	p
Sexual functioning	Without	57	11.2369	9.17665	**0.000**
	MDE	29	3.6497	6.97574	
Sexual enjoyment	Without	57	48.1444	25.09479	**0.026**
	MDE	29	11.1100	19.24308	
Future perspective	Without	57	52.3374	20.67072	**0.005**
	MDE	29	38.9928	19.17981	

*Adjustment made for living environment, marital status, social support, metastasis site, surgery type, specific therapies, dexamethasone and opioids use, somatic co-morbidities.

Discussion

As compared with the results of other studies, which report a prevalence of major depression episodes in breast cancer patients varying between 4.7% [15] and 11% [16], the rate of MDE in our study was much higher, most probably due to the characteristics of the enrolled subjects, the poor socio-economic comfort, but also possibly because, in contrast with other studies [17], we used a complex diagnostic approach, thus enhancing the fidelity of the diagnostic process.

The emotional dimension of the EORTC QLQ C-30 correlated with the psychiatric diagnosis. The deficient physical functioning of the depressive cancer patients was mentioned by other authors [18], and the association between pain and depression was noted in multiple cancer population studies [19,20,21] and our research confirms it. Fatigue, appetite loss, constipation and insomnia are specific symptoms of the major depressive episodes, but also generated by chemotherapy. Fatigue is the most frequently encountered symptom in cancer [22], and our results suggest that the emotional distress impacts on this aspect of the quality of life.

The cancer related insomnia is correlated in some studies with the depressive symptoms [23], and was considered to be the main symptom that differentiates depressive from non-depressive cancer patients [24]. The significantly higher scores for appetite loss, insomnia, nausea and vomiting and dyspnea in the depressive patients group in our study suggest that the major depressive episodes mainly affect the quality of life of these patients. Chemotherapy has a negative impact on the sexual life [25]. In our study both sexual functioning and satisfaction were deficient in the subgroup of depressed patients, confirming the results obtained in other studies [26]. The future perspective scale had lower mean scores in the depressed patients group, and the quality of life/general health status, reflecting most accurately the subjective perception of individual's existential satisfaction, was deficient in patients with co-morbid major depressive episodes, thus confirming that mood disorders impact on metastatic breast cancer patients' quality of life.

Conclusions

1. Patients with metastatic breast cancer undergoing chemotherapy and diagnosed with major depressive episode had significantly lower scores in our study for physical, role, emotional, social, sexual functioning, sexual enjoyment and future perspective comparing to those without M.I.N.I. 6 diagnosis.

2. The adjusted scores for fatigue, nausea and vomiting, pain, dyspnea, appetite loss and constipation were significantly higher in the depressive patients group comparing to those without MINI 6 diagnosis.

3. The adjusted mean scores for quality of life/ general health status, were not normally distributed and significantly lower in the group of depressive patients.

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