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

BIANCA-IASMINA DRAGOMIR¹, LIANA FODOREANU²

¹Iuliu Hațieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania
²Psychiatric I Emergency County Hospital, Cluj-Napoca, Romania

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 Chiricuță” 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.

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 Chiricuță” 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.
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 Hațieganu” 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.

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.

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 | MDE | Total |
|------------------|--------------------|-----|-------|
| **Environment**  |                    |     |       |
| urban            | Count % within diagnostic M.I.N.I. | 49 (86.0%) | 22 (75.9%) | 71 (82.6%) |
| rural            | Count % within diagnostic M.I.N.I. | 8 (14.0%) | 7 (24.1%) | 15 (17.4%) |
| **p<0.0001**     |                    |     |       |
| **Marital status** |                  |     |       |
| unmarried        | Count % within diagnostic M.I.N.I. | 5 (8.8%) | 4 (13.8%) | 9 (10.5%) |
| married          | Count % within diagnostic M.I.N.I. | 39 (68.4%) | 19 (65.5%) | 58 (67.4%) |
| 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%) |
| **p<0.0001**     |                    |     |       |
| **Social support** |                |     |       |
| no               | Count % within diagnostic M.I.N.I. | 9 (15.8%) | 8 (27.6%) | 17 (19.8%) |
| yes              | Count % within diagnostic M.I.N.I. | 48 (84.2%) | 21 (72.4%) | 69 (80.2%) |
| **p<0.0001**     |                    |     |       |
| **Metastasis site** |              |     |       |
| lung             | Count % within diagnostic M.I.N.I. | 6 (10.5%) | 2 (6.9%) | 8 (9.3%) |
| bone             | Count % within diagnostic M.I.N.I. | 26 (45.6%) | 19 (65.5%) | 45 (52.3%) |
| 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%) |
| **p<0.0001**     |                    |     |       |
| **Surgery**      |                    |     |       |
| without          | Count % within diagnostic M.I.N.I. | 7 (12.3%) | 5 (17.2%) | 12 (14.0%) |
| breast conserving | Count % within diagnostic M.I.N.I. | 8 (14.0%) | 2 (6.9%) | 10 (11.6%) |
| mastectomy       | Count % within diagnostic M.I.N.I. | 42 (73.7%) | 22 (75.9%) | 64 (74.4%) |
| **p<0.0001**     |                    |     |       |
| **Specific therapy** |               |     |       |
| chemotherapy     | Count % within diagnostic M.I.N.I. | 6 (10.5%) | 7 (24.1%) | 13 (9.3%) |
| combined         | Count % within diagnostic M.I.N.I. | 51 (89.5%) | 22 (75.9%) | 73 (84.7%) |
| **p<0.0001**     |                    |     |       |
| **Dexamethasone** |                   |     |       |
| yes              | Count % within diagnostic M.I.N.I. | 17 (29.8%) | 6 (20.7%) | 23 (26.7%) |
| no               | Count % within diagnostic M.I.N.I. | 40 (70.2%) | 23 (79.3%) | 63 (73.3%) |
| **p<0.0001**     |                    |     |       |
| **Opioids**      |                    |     |       |
| no               | Count % within diagnostic M.I.N.I. | 46 (80.7%) | 17 (58.6%) | 63 (73.3%) |
| yes              | Count % within diagnostic M.I.N.I. | 11 (19.3%) | 12 (41.4%) | 23 (26.7%) |
| **p<0.0001**     |                    |     |       |
| **Co-morbidities** |                 |     |       |
| no               | Count % within diagnostic M.I.N.I. | 39 (68.4%) | 40 (69.0%) | 79 (68.7%) |
| yes              | Count % within diagnostic M.I.N.I. | 18 (31.6%) | 18 (31.0%) | 36 (31.3%) |

### Table IV. Functional QLQ C-30 scales.

|                  | M.I.N.I. 6 diagnostic | N  | Mean   | SD    | p    |
|------------------|-----------------------|----|--------|-------|------|
| Physical functioning | Without MDE          | 29 | 62.0988| 11.92021| 0.032|
| Role functioning  | Without MDE          | 57 | 56.5939| 24.7091| 0.002|
| Emotional functioning | Without MDE          | 57 | 79.0822| 18.26168| 0.000|
| Social functioning | Without MDE          | 57 | 61.5194| 16.59108| 0.000|

*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.

|                  | M.I.N.I. 6 diagnostic | N  | Mean   | SD    | p    |
|------------------|-----------------------|----|--------|-------|------|
| Fatigue          | Without MDE          | 29 | 54.7204| 16.7855| 0.000|
| Nausea and vomiting | Without MDE        | 57 | 13.5221| 13.61682| 0.001|
| Pain             | Without MDE          | 29 | 25.1403| 18.73474| 0.000|
| Dyspnea          | Without MDE          | 29 | 20.3857| 23.68669| 0.049|
| Insomnia         | Without MDE          | 29 | 27.8285| 23.65868| 0.002|
| Appetite loss    | Without MDE          | 29 | 39.9228| 32.95147| 0.016|

*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.

|                  | M.I.N.I. 6 diagnosis | N  | Mean   | SD    | p    |
|------------------|-----------------------|----|--------|-------|------|
| Sexual functioning | Without MDE          | 29 | 11.2369| 9.17665| 0.000|
| Sexual enjoyment | Without MDE          | 29 | 48.1444| 25.09479| 0.026|
| Future perspective | Without MDE         | 29 | 39.9228| 19.17981| 0.005|

*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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