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SAME QUALITY OF LIFE FOR POLISH BREAST CANCER PATIENTS TREATED WITH MASTECTOMY AND BREAST RECONSTRUCTION OR BREAST-CONSERVING THERAPY

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Breast cancer often requires combined oncologic treatments, the base of which is surgery. Quality of life (QoL) after each surgical procedure may influence the process of decision making among women, who qualify for multiple oncological strategies. Our knowledge about QoL in breast cancer patients is derived from comparative studies. Results may differ, depending on country, culture, and societal relations.

The aim of the study was to investigate the quality of life of Polish patients treated with breast-conserving therapy (BCT) or mastectomy with breast reconstruction.

Material and methods. The study involved women who underwent surgery for breast cancer in the Department of Surgical Oncology of the Gdynia Oncology Center from September 2010 to November 2013. Eighty-two breast reconstructions (in 79 patients) and 226 BCT procedures were performed. QoL was measured with the use of EORTC QLQ-C30 and QLQ-BR23 questionnaires.

Results. Global QoL was high in both groups and did not differ significantly. Body image was slightly better after BCT than after mastectomy with breast reconstruction, but sexual QoL was lower. Future perspective was quite low in both groups. Disease symptoms were not bothering.

Conclusions. The global QoL among Polish breast cancer patients treated with BCT or mastectomy with breast reconstruction is high and does not differ between groups. There is a need for anxiety and disease-related fear prophylaxis and for the improvement of sex life of breast cancer survivors.

Key words: breast cancer, breast surgery, quality of life

Breast-conserving therapy (BCT) is the preferred method of radical breast cancer treatment (1, 2, 3). Equal oncological safety of BCT and mastectomy has been demonstrated (4, 5). The evaluation of oncological therapy is supplemented by patient's quality of life (QoL) at every therapy stage (4-7). QoL after each surgical procedure may influence the process of decision making among women who qualify for multiple oncological strategies (8). Data on future QoL depending on a chosen treatment should make this decision easier. Unfortunately, prospective randomized trials cannot be performed on that topic. Our knowledge is derived from comparative studies. Results may differ depending on country, culture, and societal relations.

Thus, we wanted to investigate the QoL among Polish woman treated for breast cancer because in Poland there is still a lack of such analyses. Does the QoL of women after a BCT procedure differ from the QoL of women treated with mastectomy and breast reconstruction in Poland?

MATERIAL AND METHODS

The study involved women with breast cancer operated on in the Department of Surgical Oncology of the Gdynia Oncology Center from September 2010 to November 2013. Seventy-nine patients underwent the breast reconstruction procedure after mastectomy, and 226 women were treated with BCT. Twenty-three patients in the BCT group were excluded from the study because they required mastectomy after receiving the full pathology report. Study inclusion criteria were: age ≥18 years, completion of EORTC QLQ30 and QLQ-BR23 questionnaires, and mastectomy with reconstruction or BCT procedure. The exclusion criteria were age under 18, mastectomy without breast reconstruction, and refusal to fulfill questionnaires. Breast reconstruction was performed with use of the latissimus dorsi flap technique in 59 cases, transverse abdominis muscle flap technique in 16 cases, and breast implant placed under pectoralis major muscle in 7 patients. In total, 226 BCT procedures were performed. BCT was performed as cancer resection with at least a 1-cm margin, followed by radiotherapy. Finally, 203 patients with BCT were qualified for analysis.

QoL was measured with the use of EORTC-C30 and EORTC-BR23 questionnaires, validated for the Polish population (9, 10). For the QLQ-C30 questionnaire, QoL in its different dimensions were analyzed, including global QoL; physical, social, role, emotional, and cognitive functioning; and negative disease and treatment symptoms, such as fatigue, nausea and vomiting, pain, dyspnea, insomnia, appetite loss, constipation, diarrhea, and financial difficulties. For the QLQ- BR23 module, data were collected about body image, sexual function, sexual enjoyment, and future perspective, as well as systemic therapy side effects, breast symptoms, arm symptoms, and concern over hair loss. After informed consent, all participants were requested to fill out the questionnaires, which were given during control visits in the center 9 to 12 months after surgery. Questionnaires were returned to the center by traditional mail or personally.

Statistical analyses were performed with the use of software, STATISTICA StatSoft, Inc. (2011). A P-value was considered significant if less than 0.05. Correlations between age and every QoL parameter were verified with the U Mann–Whitney test, as well as correlation between global QoL and surgical complications. Correlations between QoL and type of cancer, lymph node metastases, and cancer staging were verified with the chi square Pearson test. The Kruskal–Wallis test was used to find correlations between global QoL and cancer staging, as well as future perspective.

RESULTS

In total, 118 (58%) women in the BCT group and 48 (61%) patients in the mastectomy with breast reconstruction group answered the questionnaires.

The group characteristics are presented in tab. 1. There were no statistical correlations between QoL and age or cancer staging. Surgical complications in the BR group and in the BCT group are listed in tab. 2. There were no

Table 1. Groups characteristics

	BCT n=118 (%)	BR (n=48)	p
Age ± SD	60,35 ± 9	50,84 ± 10	<0,0001
Cancer staging			
In situ +I	2 (1,7) + 89 (75,4)	8 (16,6) + 12 (25)	<0,0001
II+ III	24 (20,3) + 3 (2,5)	25 (52,1) + 3 (6,25)	
Nodes			
Positive	14 (11,9)	6 (12,5)	ns
Negative	96 (81,5)	42 (87,5)	ns
Cancer invasion			
Invasive	110 (93,2)	40 (83,3)	0,0002
Noninvasive	8 (6,8)	8 (16,7)	

BCT – breast conserving therapy group, BR – breast reconstruction group, ns – not significant, SD – standard deviation

Table 2. Complications after breast reconstruction (n = 79) and after BCT (n = 203)

Complications	n (%)	BCT
Flap lost	0	NA
Breast wound infection	9 (11%)	1 (0,5%)
Dorsal wound infection	1 (1,26%)	NA
Capsule	0	NA
Chronic pain	0	0
Hematoma	2 (2,5%)	8 (3,9%)
Seroma	0	1 (0,5%)
Paroxysmal atrial fibrillation	0	1 (0,5%)

statistically significant correlations between global QoL and surgical complications either.

QoL estimators are listed in tab. 3-6. Global QoL in both groups of women scored high, and there was no statistical difference. Patients in the mastectomy with reconstruction group scored QoL a little bit higher in every dimension, when analyzed with QLQ-C30. Statistical difference was established only for physical and role functioning (tab. 3). Scoring in every analyzed parameter was high, which means high the QoL in both of the groups.

Women in our study had good body image, but it was better in the BCT group than after mastectomy with breast reconstruction. Surprisingly, women in the BR group had statistically better sex life functioning. Notably, there are low scores generally for sexual functioning and sexual enjoyment (tab. 4).

Perception of future perspective is quite low in both groups, but when median values are analyzed (33 in the BCT and 66 in the BR group), it seems that patients after mastectomy can better cope with fear of cancer recurrence. The better the future perspective, the higher the global QoL. There was no statistical correlation between future perspective and cancer staging.

Disease and treatment symptoms did not bother the patients much. The most dominant issue was tiredness, especially in the BCT group. Sleeping disorders were moderate and did not differ statistically. Appetite loss was statistically more frequent among the BCT patients, but it was not burdensome (tab. 5).

Adjuvant therapy side effects were less troublesome in the mastectomy with breast reconstruction group. In addition, local breast symptoms were statistically rare. Stress about hair loss was scored moderately, without statistical differences (tab. 6).

Table 3. EORTC QLQ-C30 parameters in BCT and BR groups

EORTC QLQ-C30 scoring	BCT	SD	BR	SD	p
Global QoL	65	21	69	15	ns
Physical functioning	78	10	87	8	<0,0001
Role functioning	85	17	91	14	0,02
Emotional functioning	74	21	78	17	ns
Cognitive functioning	83	18	89	14	ns
Social functioning	85	19	88	16	ns

Table 4. EORTC QLQ-BR23 parameters in BCT and BR group

EORTC QLQ-BR23 scoring	BCT	SD	BR	SD	p
Body image	79	22	71	19	0,004
Sexual functioning	18	23	26	22	0,02
Sexual enjoyment	33	31	51	24	0,003
Future perspective	44	33	43	33	ns

Table 5. Disease symptoms in BCT and BR groups

EORTC QLQ-C30 scoring	BCT	SD	BR	SD	p
Fatigue	33	20	24	17	0,009
Nausea and vomiting	8	16	3	11	ns
Pain	20	23	14	17	ns
Dyspnea	17	22	13	36	ns
Insomnia	29	28	26	19	ns
Appetite loss	9	18	2	8	0,04
Constipation	15	22	14	23	ns
Diarrhea	9	50	3	9	ns
Financial difficulties	19	25	14	24	ns

Table 6. Treatment side effects in BCT and BR groups

EORTC QLQ-BR23 scoring	BCT	SD	BR	SD	p
Systemic therapy side effects	23	17	20	12	ns
Breast symptoms	21	19	10	14	0,0008
Arm symptoms	25	20	21	16	ns
Upset by hair loss	38	32	33	37	ns

DISCUSSION

Currently, when BCT and mastectomy with breast reconstruction are oncologically equivalent, QoL after these procedures becomes the real estimator of treatment efficacy (11, 12). A prospective randomized study of woman

treated with these methods could make an objective evaluation of differences in QoL easy, but such a study is impossible to perform. Moreover, published papers for this topic have been performed in countries culturally different from Poland, such as the USA, Brazil, Finland, Korea, and Iran (13, 14).

We have noticed that patients in our study scored high for global QoL. Scoring in every life sphere was slightly better after mastectomy with breast reconstruction, compared with German or Irish women (10, 15). Our patients presented higher QoL in all dimensions in comparison with French or German women (6, 15). QoL is related not only to the type of surgical procedure, but also to psychological support given by hospital staff, which was highlighted by British and Finland authors (16, 17). Some investigators point out the importance of professional empathy and emotional involvement of breast team members. Often this emotional support is essential to the QoL estimation. Women operated on in the Gdynia Oncology Center had constant assistance of hospital psychologists and very active hospital staff, which can influence a high QoL. Notably, the fear of disease recurrence is still present among patients, independent of effective treatment (18). The better the interpersonal communication, the lower the fear and depression among breast cancer patients (19).

Patients in BR group were 10 years younger than the BCT group. The distribution of age is similar to other studies (15, 18). Breast cancer in younger women is usually more aggressive and requires wide surgery and adjuvant therapy. However, younger women choose mastectomy with breast reconstruction because of some family and personal reasons that we probably never know. The greater the patient involvement in the decision-making process, the more frequent mastectomy is chosen (20).

Worldwide, in the past decade, there has been a systematic increase in the quantity of mastectomies performed (21-25). Breast reconstruction incorporating oncoplastic techniques has become available to almost every woman (24, 26). We did not find a statistical correlation between age and global QoL. Sio et al. had the same results as in an American population (13); age is not correlated to QoL, but physical functioning is related to future perspective. In addition, the older the woman, the worse the physical functioning and future perspective.

Women after mastectomy with breast reconstruction function slightly better in every analyzed life aspects, but statistical significance was found only in physical and role functioning. Probably, patients after BCT felt more tired because of the oncological treatment they attended. They were usually more often treated with radiotherapy, which is exhausting. In addition, the BCT group was 10 years older than the BR group.

Statistically significantly more severe appetite loss combined with sleeping disorders in the BCT group suggests that disease adaptation difficulties were more intensive in this group. Coexistence of adaptive disorders impairs QoL, limits functioning, and increases ailments (27).

Breast cancer is a special kind of neoplasm, because of its great influence on emotional spheres of life. Many patients suffer from fear of the disease itself and survival, but they are also afraid of femininity and sexuality loss (3). Young women have to fight against menopausal symptoms and fertility loss (14, 28).

Body image was scored high in both groups but was statistically a little better in women after BCT. Patients requesting breast reconstruction usually have greater aesthetic requirements and are more critical about final results (15). Surprisingly, sexual functioning and enjoyment in the BCT group scored lower than in the BR group. All women felt bad in this sphere of life. The same results were observed by American, Spanish, and Croatian investigators (14, 29, 30).

The most bothersome side effect of treatment was stress caused by hair loss, which was greater after BCT.

QoL assessment for breast cancer survivors is a difficult process because of its complexity and multidimensionality. Lack of unified investigator tools and cultural differences are also disadvantages. EORTC questionnaires used in our study revealed that QoL of Polish breast cancer patients is similar to others in the European Union and in developed countries outside Europe, such as the USA or Canada.

STUDY LIMITATIONS

A limitation of our study is the considerable percentage of women who did not answer the questionnaires. Such percentage was observed in other countries as well (6, 13, 15). It is possible that in this group were patients in bad psychological and physical or material condition, as well as with depression. That usually combines with reluctance to participate in studies like this one. The psychological sphere is often neglected by physicians, who focus especially on physical interventions.

CONCLUSIONS

The global QoL among Polish breast cancer patients treated with BCT or mastectomy with breast reconstruction is high and does not differ between groups. New oncoplastic surgery approaches ensure high QoL after the procedure. In addition, there is a great need in our country for prophylaxis of anxiety and disease-related fear. Another target is the prevention of sex life disorders in breast cancer survivors.

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