Review article

Sexual health after breast cancer: Recommendations from the Spanish Menopause Society, Federación Española de Sociedades de Sexología, Sociedad Española de Médicos de Atención Primaria and Sociedad Española de Oncología Médica

Nicolás Mendoza a,*, Francisa Molero b, Fermín Criado c, Mª Jesús Cornellana d, Encarna González e, On behalf of the Sexuality In Breast Cancer Survivors Group 1

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ABSTRACT

Breast cancer is the most common cancer in women. As survival rates are increasing, the long-term health problems of survivors now need attention. Many survivors develop sexual disorders as a consequence of either the side-effects of treatment or induced menopause. A panel of experts from various Spanish scientific societies (Spanish Menopause Society, SMS; Federación Española de Sociedades de Sexología, FESS; Sociedad Española de Médicos de Atención Primaria, SEMERGEN; and Sociedad Española de Oncología Médica) met to develop recommendations for the management of sexual health in breast cancer survivors based on the best evidence available. The main recommendation is that sexuality must be considered by a multidisciplinary team as an integral part of treatment, to improve the quality of life of breast cancer survivors.

Contents

1. Introduction .......................................................................................................................... 127
2. Epidemiology ....................................................................................................................... 127
3. Breast cancer’s impact on sexuality .................................................................................... 127
   3.1. Impact of breast cancer treatments and concomitant treatments .................................. 127
   3.2. Breast cancer and sexual and reproductive health in premenopausal women ............... 128
   3.3. Alterations in sexuality and relationships ....................................................................... 128
4. Management strategies ....................................................................................................... 128
5. Treatment ............................................................................................................................ 128
   5.1. Counselling .................................................................................................................... 128
   5.2. Symptomatic treatment ................................................................................................. 129
      5.2.1. Vaginal lubricants and moisturizers ........................................................................ 129
      5.2.2. Vaginal estrogen therapy ....................................................................................... 129
      5.2.3. Androgens ............................................................................................................. 129

* Correspondence to: Maestro Montero, 21, 18004, Granada, Spain.
E-mail address: nicomendoza@telefonica.net (N. Mendoza).
1 Details of the Sexuality In Breast Cancer Survivors Group can be found in Supplementary file.
1. Introduction

More than 20,000 new cases of breast cancer are diagnosed annually in Spain. Breast cancer is the most common type of cancer in women (28.7% of all cancers) and is the leading cause of cancer death in Spanish women (15.5%) [1]. Nonetheless, mortality is decreasing because of early-detection programmes and advances in treatment. Consequently, the long-term health of survivors now needs to be addressed [2]. Although the definition of survival can vary considerably, the Spanish Menopause Society (SMS) has endorsed the very broad definition proposed by the National Cancer Institute, which considers survival to be any time after diagnosis [3].

All of the physical and emotional changes inherent to breast cancer can influence sexuality. Unfortunately, health professionals may not fully address these changes because they are focused on their patients’ survival [4–6] and forget the psychosocial, cultural, emotional and relational dimensions of health, and the importance of sexual health [7,8]. This position paper aims to present recommendations for the management of sexual problems in breast cancer survivors.

A panel of experts from various Spanish scientific societies (Spanish Menopause Society, SMS; Federación Española de Sociedades de Sexología, FESS; Sociedad Española de Médicos de Atención Primaria, SEMERGEN; and Sociedad Española de Oncología Médica) met to develop recommendations for the management of sexual health of women with breast cancer based on the best evidence available. The recommendations are based on the GRADE (Grading of Recommendations Assessment, Development and Evaluation) system [9]. The present article analyses the factors that impact the sexual health of women with breast cancer and presents the recommendations.

2. Epidemiology

The sexuality of breast cancer survivors has not been well studied. Sexual dysfunction is common among women with breast cancer (occurring in 25–66% of cases), particularly in those who are receiving chemotherapy in the immediate postoperative period and those who experience vaginal dryness. The most frequent problem is decreased sexual interest (49.3%), followed by dyspareunia (35–38%), concerns about body image, and problems with sexual desire (10–14%), arousal (5%) and orgasm (5%) [10,11]. However, most studies have not assessed sexuality before cancer diagnosis, making it difficult to identify the effects of breast cancer and its treatment per se [12–14].

3. Breast cancer’s impact on sexuality

Most studies of the sexual health of women with breast cancer have focused on biomedical aspects such as the physiological and hormonal repercussions of cancer and its treatments in terms of sexual response; where the psychosocial and relational aspects have been studied, the focus has generally been on anxiety, stress or altered body image after breast cancer treatment, rather than sexuality. Studies of the experiential and cultural aspects of sexuality in breast cancer survivors would require the consideration of concepts such as sexual attractiveness, its plasticity in relation to body image, the internalization of gender role and self-demands regarding relationships, and would force more open, specialized and less prescriptive communication between professionals and patients [15].

Breast cancer and its treatments can produce physical sequelae that affect a woman’s body image. However, relationship concerns, depression and increasing age are important influences in the development of sexual dysfunction in breast cancer survivors [16]. Thus, not surprisingly, some psychological interventions (mindfulness-based approaches, expression of positive emotions, spiritual interventions, hope therapy and meaning-making interventions) can improve quality of life (QoL) and well-being [17] and, pari passu, sexual health.

3.1. Impact of breast cancer treatments and concomitant treatments

Breast cancer treatments include surgery, radiotherapy, chemotherapy and adjuvant endocrine therapy. They often cause major physical changes (hair loss, breast or chest disfigurement, lymphedema, changes in skin texture, ovarian failure, vaginal irritation, hot flashes and weight gain or loss) which generate feelings of vulnerability and a loss of self-esteem and femininity [16].

The degree to which surgery affects sexual function depends on the type of intervention (breast-conserving surgery, mastectomy, axillary node removal). The impact of surgery is greater when the surgery is more radical and when a woman has had less involvement in treatment decisions [18]. A prospective study found that significantly more women reported sexual dysfunction and problems with sexual desire, arousal and orgasm after mastectomy than after breast-conserving surgery [19]. Lymphedema after axillary lymph node removal occurs in up to 30% of women and in 3% of patients undergoing sentinel node excisions it can be a long-term problem [9]. While breast reconstruction allows aesthetic restoration, sexuality may still be compromised because of loss of breast sensitivity [20–22].

Sexual health suffers after chemotherapy and adjuvant endocrine treatment, especially when aromatase inhibitors (AIs) are used, as these can cause hypoestrogenism and vaginal atrophy [23,24]. Radiotherapy can cause tiredness and skin erythema, as well as swelling and so breast asymmetry.

Breast cancer survivors are commonly prescribed antidepressants (typically serotonin reuptake inhibitors or serotonin and noradrenaline reuptake inhibitors) and these may also impair sexual function [25,26].
3.2. Breast cancer and sexual and reproductive health in premenopausal women

Breast cancer in premenopausal women tends to be more aggressive and usually requires adjuvant treatment. Younger women also suffer more severe disruption of body image, anxiety, sleep disorders, dissatisfaction with relationships and fear of relapse. In this context, these women are more prone to worse sexual health than older women [27,28]. Furthermore, chemotherapy induces ovarian failure in more than 80% of women over 40 and in more than 20% of women over 30 [29]. It is therefore important to discuss oocyte cryopreservation, especially with younger women, before chemotherapy or prophylactic oophorectomy [30].

Most guidelines recommend postponing pregnancy for at least two years after the breast cancer is treated, depending on the stage and the treatment received [31,32], although for women with localised disease early conception is unlikely to worsen prognosis [33,34]. In addition, ovarian stimulation is not contraindicated, and women with breast cancer who are positive for hormone receptors may receive tamoxifen or AI during stimulation [35].

3.3. Alterations in sexuality and relationships

The impact of breast cancer on sexual health is higher in women with a history of psychological problems, with especially negative perceptions and expectations regarding their disease, low levels of social and family support and poor relationships [16]. Relationship quality can be considered the most important predictor of sexual satisfaction, function and desire after breast cancer, even greater than the degree of bodily damage caused by treatment [36].

Partners of breast cancer survivors also experience psychological and emotional stress. Apart from dealing with their partner’s diagnosis and treatment, they may suddenly become carers, and this may have repercussions on their own quality of life and employment status, which in turn might affect their own sexual health [8,37]. It is therefore important that both partners are offered information and counselling and participate in decisions about treatment [38,39]. However, where breast cancer survivors do not wish to involve their partners, this must be respected.

4. Management strategies

The purpose of management is to minimize sexual and relationship problems. Discussing sexual health and the woman’s personal future beyond breast cancer is a therapeutic act in itself and can increase confidence in surviving the disease. Management can be undertaken either in already planned visits for breast cancer treatment or at other times.

Semi-structured interviews and questionnaires can facilitate evaluation and management. We recommend the use of validated questionnaires such as the Female Sexual Function Index (FSFI), EVAS-M or SF-36 or the Cervantes Scale [40,41].

We also recommend assessment and the offering of help for sexual health at the three following time points [42–44], bearing in mind that breast cancer treatment in itself will take priority.

• before surgery or preoperative chemotherapy, to assess current sexual health and psychosocial support
• after surgery and after the postoperative radio-chemotherapy or adjuvant endocrine therapeutic strategies have been determined
• 6–9 months after surgery, to evaluate current problems, decide a management strategy and assess the need for subsequent visits.

5. Treatment

Few randomized controlled trials have evaluated treatments for sexual dysfunction in breast cancer survivors, and these are limited by small sample sizes and conflicting results [45]. We recommend that any advice should be given by a multidisciplinary team that includes oncologists, nurses, psychologists, psychiatrists and sex therapists, if possible.

5.1. Counselling

Health professionals can play a key role in managing sexual health problems in breast cancer survivors [46]. One method for identifying sexual problems is the PLISSIT model. This model centres on permission (to discuss the subject), limited information (not overwhelming the patient), specific advice (accurate and practical information) and intensive therapy (if referral to a specialist is needed) [47,48]. A non-judgemental approach and use of easily understandable language are advised [49]. It is best to refer women with severe sexual dysfunction to a specialist health professional.

Health professionals should ask open-ended questions and encourage women to ask questions. A good opening for the discussion could be as follows: “It’s normal that at some point you worry about how breast cancer will affect your sex life and your relationships.”

The information provided should be tailored to the needs of the woman, and misconceptions identified [50]. Points to cover include:

• Considering that sex is not important in a relationship.
• Maintaining a sexual relationship because of the patient’s fear of being abandoned by the partner.
• Ignoring sexual problems and believing that they will solve themselves.
• Giving more importance to the pleasure of the partner than to that of the woman herself.
• Comparing current sex life with that previously achieved or with that of unaffected women (it may still be satisfactory even if it is not as good as it was).
• Living with sexuality but avoiding emotions (considered negative), and thereby reducing sex to a solely physical experience.

Specific tips for improving sexual activity and sex interaction [17,50]

• Exercises (Kegel) or sensory massage to regain confidence in the sexual response.
• Making time to improve the quality of emotional and erotic-sexual interaction with partner(s).
• Spending time with the partner and engaging in shared leisure activities.
• Renegotiating the type of sexual activity performed (vaginal intercourse is not imperative).
• Use of massage oils, lubricants or vibrators.

The inclusion of the partner in support or sex therapy programmes is considered to be essential, as most strategies to overcome sexual difficulties are based on couple relationships. This is especially important for younger women whose partners are less well prepared to cope with the woman’s illness or with childcare [7,8,14].

Couple-based sex therapy appears to be an effective and accepted treatment for addressing sexual problems in breast cancer patients. These interventions were associated with improvements in sexual physiology, functioning, self-image and relationships, as
well as improved psychological well-being of both breast cancer survivors and their partners [51].

5.2. Symptomatic treatment

5.2.1. Vaginal lubricants and moisturizers

Non-hormonal vaginal lubricants and moisturiser creams are generally considered to be the treatment of choice in breast cancer survivors.

Women undergoing chemotherapy, particularly younger women, are more likely to suffer from vaginal dryness, dyspareunia, decreased libido and difficulty in reaching orgasm. Although there is limited evidence in breast cancer survivors, vaginal moisturizers and lubricants are effective in treating dyspareunia and vaginal dryness when used regularly (3–5 times per week). There are three types of vaginal moisturizers and lubricants: pectin-based, water-based and those containing polycarbophil gels [52].

One randomised controlled trial evaluating a lactic acid-spiked gel showed improvements in scores on both the Vaginal Health Index (mean 5.00 ± 0.816 vs 16.98 ± 3.875, p < 0.001) and the Vaginal Maturation Index (mean 51.18 ± 3.753 vs 47.87 ± 2.728, p < 0.001) at 12 weeks. The vaginal gel also reduced vaginal irritation, dryness and dyspareunia, although confirmatory studies are required [53].

The OVERcome study (Olive Oil, Vaginal Exercise and Moisturizek) resulted in significant improvements in dyspareunia, sexual function and quality of life over time (all P < 0.001) in breast cancer survivors. Maximum benefits were observed at week 12 [54].

Furthermore, a randomized trial in 52 tamoxifen users who complained of vaginal dryness found that polyacrylic acid was superior to a lubricant in treating sexual dysfunction [55].

In some cases, vaginal dilators, vibrators, self-stimulation techniques and pelvic floor relaxation exercises may also be useful [56].

5.2.2. Vaginal estrogen therapy

The decision to use vaginal estrogen therapy (VET) should be made on an individual basis, considering the patient’s tumour characteristics, symptoms, risk factors and other potential benefits. In the last ACOG Committee Opinion paper, the use of VET in breast cancer survivors was recommended only for patients who are unresponsive to non-hormonal remedies. There have been no clinical trials of VET in breast cancer survivors. Women with very pronounced vaginal symptoms may be treated with local, low-dose estrogens, which show minimal systemic absorption. However, such treatments should be avoided or used for only very short periods of time in women who are taking aromatase inhibitors [57].

VET, which is available as tablets, creams or rings, is very effective for the treatment of genital atrophy. Early systemic absorption when the vaginal epithelium is atrophic is a potential safety concern, though blood levels decline with continued use. A study of six women taking aromatase inhibitors, treated with vaginal estradiol 25 mcg tablets (a preparation no longer in use and now replaced with a 10 mcg dose) found that serum estradiol levels rose from 5 pmol/l or less at baseline to a mean 72 pmol/l at 2 weeks. By 4 weeks this had decreased to <35 pmol/l in the majority (median 16 pmol/l) although significant further rises were seen in two women [58].

Although no breast recurrences have been documented with VET, estriol instead of estradiol has been proposed as a better option in breast cancer survivors because it has a faster clearance [59].

There are no data on interactions between VET and tamoxifen or aromatase inhibitors. Tamoxifen shows anti-estrogenic effects in premenopausal women but weak estrogenic effects on the vagina in postmenopausal women, although some also experience vaginal atrophy.

In our opinion, it is reasonable to use low doses of VET in tamoxifen users who suffer from vaginal dryness. The small amount that is absorbed is likely to be blocked by tamoxifen. However, we suggest not using VET in those taking aromatase inhibitors, as systemic estrogen levels should be minimised in this group.

5.2.3. Androgens

There are limited data on the use of topical testosterone in women with breast cancer, but no increases in estrogen levels in peripheral blood have been observed in women taking aromatase inhibitors [59]. Systemic testosterone has been used in various forms (oral, implant or transdermal patch or gel) for many decades to improve sexual desire but data in breast cancer survivors are limited [60].

The use of dehydroepiandrosterone (DHEA) has been proposed to treat vulvovaginal atrophy due to its intracellular transformation in estrogens. Clinical improvements in postmenopausal women have been observed with the use of vaginal DHEA, although there are no data in breast cancer survivors [61].

A 12-week randomized study of women taking aromatase inhibitors with early-stage breast cancer examined the use of intravaginal testosterone (IVT) cream and an estradiol-releasing vaginal ring (7.5 µg/day). Of the 75 who started the study, 69 completed treatment. The mean (range) baseline E2 level was 20 (<2–127) pg/mL. At baseline, E2 was above the postmenopausal range (>10 pg/mL) in 28 of the 75 women (37%). Persistent E2 elevation was observed in none of the 35 women who used a vaginal ring and in 4 of the 34 women (12%) using IVT cream. Transient E2 elevation was seen in 4 of the 35 (11%) using a vaginal ring and in 4 of the 34 (12%) using IVT. Vaginal atrophy and sexual interest and dysfunction improved for all patients [62]. Further data are required.

5.2.4. Tibolone

Tibolone improves sexual health in postmenopausal women. However, the LIBERATE study (Livial Intervention following Breast Cancer; Efficacy, Recurrence and Tolerability Endpoints) showed an increased risk of recurrence in tamoxifen users compared with placebo (15% vs 11.4%; HR 1.40, 95% CI 1.1–1.79). The study was therefore stopped early [63]. Consequently, tibolone is not recommended in breast cancer survivors.

5.2.5. Flibanserin

Flibanserin has been approved for use by premenopausal women with hypoactive sexual desire disorder that is not caused by a coexisting medical or psychiatric condition and that is not caused by other concomitant medication. However, there are no data on the use of flibanserin by breast cancer survivors and it is not approved for use by them.

5.2.6. Ospemifene

Approved in the USA and Europe, oral ospemifene is indicated for the treatment of moderate to severe symptomatic vulvovaginal atrophy in postmenopausal women who are not candidates for local vaginal estrogen therapy [64]. Ospemifene is a selective estrogen receptor modulator (SERM).

Although preclinical data and reports from animal experiments suggest that ospemifene has a neutral or inhibitory effect on mammary carcinogenesis, further studies are necessary to evaluate its safety in women with breast cancer [65].

6. Summary recommendations

- Sexuality must be approached as an integral part of treatment to improve quality of life in breast cancer survivors. If possible, sexual health should be addressed through a multidisciplinary team
that includes oncologists, nurses, psychologists, psychiatrists and sex therapists. If health professionals are unable to address this issue, referral to specialized professionals or sexologists is recommended (Grade 2B).

- Exercises to regain confidence in the sexual response and intervention techniques using positive psychology are improve sexual health (Grade 2B).
- Partners should be included in support programmes (Grade 2B).
- The use of vaginal moisturizers and lubricants is recommended for vaginal dryness (Grade 2B).
- Topical estrogen treatment for vaginal symptoms can be used but only after discussion with the treating oncologist, as clinical trials have not been undertaken in women with breast cancer (Grade 2B).

**Contributors**

NM and FM were responsible for the conception and design of these recommendations.

FC and MJC participated in the preparation of the statement recommendations.

NM, FM and EG were responsible for data interpretation and preparation of manuscript.


All authors, including the members of the Sexuality In Breast Cancer Survivors Group, saw and approved the final version of the manuscript.

**Conflict of interest**

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**Appendix A. Supplementary data**

Supplementary data associated with this article can be found, in the online version, at [http://dx.doi.org/10.1016/j.maturitas.2017.02.010](http://dx.doi.org/10.1016/j.maturitas.2017.02.010).

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