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PRACTICE GUIDELINE

Interventions to address sexual problems in people with cancer

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ABSTRACT

Background Sexual dysfunction in people with cancer is a significant problem. The present clinical practice guideline makes recommendations to improve sexual function in people with cancer.

Methods This guideline was undertaken by the Interventions to Address Sexual Problems in People with Cancer Expert Panel, a group organized by the Program in Evidence-Based Care (PEBC). Consistent with the PEBC standardized approach, a systematic search was conducted for existing guidelines, and the literature in MEDLINE and EMBASE for the years 2003–2015 was systematically searched for both systematic reviews and primary literature. Evidence found for men and for women was evaluated separately, and no restrictions were placed on cancer type or study design. Content and methodology experts performed an internal review of the resulting draft recommendations, which was followed by an external review by targeted experts and intended users.

Results The search identified 4 existing guidelines, 13 systematic reviews, and 103 studies with relevance to the topic. The present guideline provides one overarching recommendation concerning the discussion of sexual health and dysfunction, which is aimed at all people with cancer. Eleven additional recommendations made separately for men and women deal with issues such as sexual response, body image, intimacy and relationships, overall sexual functioning and satisfaction, and vasomotor and genital symptoms.

Conclusions To our knowledge this clinical practice guideline is the first to comprehensively evaluate interventions for the improvement of sexual problems in people with cancer. The guideline will be a valuable resource to support practitioners and clinics in addressing sexuality in cancer survivors.

Key Words Sexual problems, practice guidelines, interventions

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INTRODUCTION

The diagnosis and treatment of cancer can affect numerous domains of sexual function, as has been well documented in the literature and shown to be common[1–5]. Nevertheless, practitioners remain reluctant to raise the issue[6,7]. They cite barriers such as feelings of discomfort with the topic and lack of time, knowledge, and training[8–11].

Studies of interventions to improve sexual function are more limited, but do exist. A handful of systematic reviews have been published[12–19], but they tend to focus on a single cancer or intervention type. No guidelines have comprehensively addressed sexual issues in people with cancer. To address that gap, we recently completed a systematic review[20] which served as the evidentiary base for a clinical practice guideline sponsored by Cancer Care Ontario (CCO) and the Program in Evidence-Based Care (PEBC).

Here, we present the resulting guideline concerning effective interventions to address the sexual functioning side effects of cancer diagnosis and treatment. The guideline is applicable to adult men and women of all sexual orientations (and their partners) living with cancer of any type. For the purposes of this guideline, men and women who were previously treated for a childhood cancer are not included. Intended users include health care practitioners such as oncologists, radiation therapists, urologists, gynecologists, primary care providers, surgeons, nurses, physiotherapists, social workers, counsellors, psychologists, and psychiatrists.

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RESEARCH QUESTION

What is the effectiveness of pharmacologic interventions, psychosocial counselling, or devices in managing sexual problems after cancer treatment?

METHODS

The PEBC is an initiative of the Ontario provincial cancer system, CCO. The PEBC produces evidence-based and evidence-informed guidance documents using the methods of the practice guidelines development cycle[21]. That process includes a systematic review, interpretation of the evidence by the Working Group, who create draft recommendations; internal review by content and methodology experts; and external review by Ontario clinicians and other stakeholders. The Working Group for the present guideline, which was convened at the request of the Psychosocial Oncology Program at CCO, had expertise in radiation oncology, urology, gynecology, psychology, sexual counselling, and health research methodology.

Approach and Definitions

When first approaching this guideline, the Working Group focused on sexual issues that commonly arise in clinical practice. It was hoped that this pragmatic approach would make the guideline easier to use for practitioners. The issues considered included sexual response, body image, intimacy and relationships, altered sexual function and satisfaction, vasomotor symptoms, and genital symptoms (women). Sexual response includes decreased desire and arousal, and alternate sensation in orgasm or anorgasmia for both sexes; in men, it also includes erectile dysfunction and the absence of ejaculate. Body image conditions include those associated with urinary or fecal incontinence, ostomy, alopecia, mastectomy and lumpectomy, and changes in penile and testicular size and shape. Intimacy and relationship issues include the degree of comfort or closeness, and the degree of sharing and communication with a partner. Sexual function and satisfaction encompass the overall aspects of how the body reacts to sexual response and the satisfaction a person feels as a result of an intimate or sexual experience. Vasomotor symptoms are usually described as night sweats, hot flashes, and flushes. Genital symptoms in women include pelvic pain, vaginal dryness, and vaginal stenosis.

Interventions were organized by type—namely, pharmacologic approaches, psychosocial counselling, and devices. "Psychosocial counselling" covers a group of nonpharmacologic therapeutic interventions that can address the psychological, sexual, social, personal, educational, or relational needs of a patient. However, those interventions can be provided in many different ways, using various methods and techniques. In the present guideline, all psychosocial or educational interventions were considered together.

Literature Search

A systematic search included existing guidelines, systematic reviews, and the primary literature for the period 2003–2015. The search for guidelines was conducted using the Canadian Partnership Against Cancer's SAGE directory of cancer guidelines, the U.S. National Guidelines Clearinghouse, and the Web sites of the American Society of Clinical Oncology, the U.K. National Institute for Health and Care Excellence, the Society of Obstetricians and Gynaecologists of Canada, and the North American Menopause Society. Guidelines that were considered relevant to the objectives were then evaluated for quality using the AGREE II instrument[22].

A systematic search for existing systematic reviews and primary literature was completed by CCO's Evidence Search and Review Service, using structured searches of Ovid MEDLINE, EMBASE, CINAHL, PSYCINFO, and the Cochrane Library for 2003–2013. The search terms covered three main topics: cancer, sexual dysfunction, and intervention types. Systematic reviews that were considered relevant were assessed using the AMSTAR tool[23]. Randomized controlled trials were assessed using the Cochrane Risk of Bias tool[24]. Nonrandomized studies were evaluated based on elements identified as important for quality in nonrandomized studies.

These selection criteria were used:

- Adult cancer patients or survivors constituted at least 50% of the sample.
- An intervention for improving sexual function in cancer patients or survivors was evaluated.
- Outcomes were any of sexual response, body image, intimacy or relationships, overall sexual function or satisfaction, or vasomotor or genital symptoms.

No restrictions were placed on the type of outcome measures used or on the study design. Case series were included, provided more than 20 subjects were evaluated. Non-English publications, commentaries, editorials, letters, and abstracts were excluded. The PEBC updated the entire literature search on 1 September 2015.

The articles were abstracted by a single author and were reviewed by an independent individual using a data audit procedure. The Working Group reviewed the material to evaluate the quality of the evidence and to draft guideline recommendations. The draft recommendations then underwent several reviews.

Internal Review

The draft guideline was circulated to two approval bodies before dissemination to the broader health care community. First, it was shared and discussed with an expert panel. The expert panel consisted of 7 individuals from the United States and Canada whose expertise included oncology, psychiatry, psychology, gynecology, and radiation therapy; they contributed to the final interpretation of the evidence, refinement of the recommendations, and approval of the final version of the document.

A second internal review was then conducted. The PEBC Report Approval Panel, a 3-person panel with methodology and oncology expertise, reviewed the document.

External Review

Feedback on the approved draft guideline was obtained from content experts and target users in two additional

processes. In a targeted peer review, several individuals with content expertise were identified by the Expert Panel and were invited to review the document and to complete a short questionnaire. In the professional consultation, the draft systematic review and practice guideline were also distributed to health care practitioner groups in the province of Ontario for whom the document was relevant. Those groups provided feedback through a brief online survey. That last step is intended to facilitate the dissemination of the final guidance report to Ontario practitioners.

RESULTS

The search for existing guidelines identified six guidelines, of which four were selected for inclusion because of their currency and relevance to symptoms[25–28]. The search for systematic reviews identified seventeen citations, thirteen of which were selected for inclusion. The search for other primary literature yielded 3726 citations, 103 of which were included. The results of the systematic review have been published elsewhere[20].

Internal Review

Comments from the expert panel highlighted the need for an overarching recommendation for identification of sexual problems in patients and the need for implementation considerations. Other expert panel comments were supportive of the recommendations and added to their refinement and usability. The Report Approval Panel comments included adding additional clarity to the literature search details and information about the side effects of phosphodiesterase 5 inhibitors (PDE5Is).

External Review

In the targeted peer review, 3 individuals with content expertise were identified and provided feedback on the guideline document. For the professional consultation, the guideline was disseminated to more than 300 relevant care providers, 39 of whom provided comments through an online survey. The comments from the reviewers reflected limitations in psychosocial resources in the community and in the cancer system, which will be affected by the recommendations.

RECOMMENDATIONS, KEY EVIDENCE, AND INTERPRETATION OF THE EVIDENCE

Table I summarizes the guideline recommendations. The overarching recommendation is that there be a discussion with the patient, initiated by a member of the health care team, about sexual health and dysfunction resulting from the cancer or its treatment. Ideally, the conversation will include the patient's partner, if the patient is partnered. The issue should be raised at the time of diagnosis and should continue to be reassessed periodically throughout follow-up. The expert panel felt that that this overarching recommendation is vital. The subsequent recommendations cannot be used unless someone has taken the initiative to ask.

In addition, 6 recommendations for women and 5 recommendations for men were made.

Women's Recommendations

Sexual Response

The expert panel recommended that psychosocial counselling be offered to women with cancer, aiming to improve elements of sexual response such as desire, arousal, or orgasm. Current evidence does not support the superiority of one type of psychosocial counselling over another, and no recommendation was made for pharmacologic interventions. On the basis of expert opinion, the Working Group also recommended regular stimulation (for example, masturbation) to improve sexual response. The evidence base for this recommendation consists of six publications of low-to-moderate quality[29–34].

Body Image

The expert panel recommended that psychosocial counselling be offered to women with cancer and body image issues. If a woman is partnered, evidence indicates that, compared with usual care, couples-based interventions are effective.

No recommendation was made for or against group therapy for women with body image issues. Overall, most studies found an improvement in body image after some type of counselling, and none found undesirable effects. The expert panel noted that the studies with a measurable impact included at least 6 sessions of counselling and that, compared with usual care, those studies provided couples-based counselling in the intervention; however, the panel did not feel that a specific recommendation could be made about the number of sessions. Although the interventions in the literature were directed at the couple, the expert panel believes that individual psychosocial counselling would still be helpful for a woman with body image issues. The evidence base for this recommendation consists of seven publications of moderate quality[30,31,35–39].

Intimacy and Relationships

The expert panel recommended that, to improve intimacy and relationship issues, psychosocial counselling be offered to women with cancer. If a woman is partnered, evidence indicates that, compared with usual care, couples-based interventions are effective. The evidence base for this recommendation consists of eight publications of low-to-moderate quality[30–33,35,37,40,41]. The studies demonstrated considerable heterogeneity with respect to target (individual, couple, group), type of counselling, number of sessions, follow-up, and outcomes measurement.

Overall Sexual Function and Satisfaction

The expert panel recommended that, for women with cancer who have problems with overall sexual functioning, psychosocial counselling—individual, couple, or group—be offered. In addition to psychosocial counselling, physical exercise or pelvic floor physiotherapy could also be of benefit. The current evidence does not support a specific psychosocial counselling intervention to improve sexual functioning and satisfaction. The evidence base for this recommendation consists of sixteen publications of moderate quality[31–46] and four systematic reviews[14–17].

TABLE I Expert panel recommendations

Overarching recommendation		
That a discussion be initiated with the patient, by a member of the health care team, regarding sexual health and dysfunction resulting from the cancer or its treatment.		
Topic	**Recommendations for ...**	
	Women	**Men**
Sexual response	That psychosocial counselling be offered to women with cancer, aiming to improve elements of sexual response such as desire, arousal, or orgasm.	That phosphodiesterase type 5 inhibitor (PDE5i) medications be used to help men with erectile dysfunction. For men who do not respond to PDE5i medications, that alternative interventions such as a vacuum erectile device (VED), medicated urethral system for erection, or intracavernosal injection be considered. Men are best served by offering a combination of psychosocial counselling and PDE5i treatment
Body image	That psychosocial counselling be offered to women with cancer and body image issues.	That a VED be used daily to prevent penis length loss.
Intimacy and relationships	That psychosocial counselling be offered to women with cancer, aiming to improve intimacy and relationship issues.	That individual or couples counselling be offered for those wishing to improve relationship or intimacy issues.
Overall sexual function and satisfaction	That psychosocial counselling be offered to women with cancer who have problems with overall sexual functioning. Physical exercise or pelvic floor physiotherapy, in addition to psychosocial counselling, might also be of benefit.	That psychosocial counselling be offered to men with cancer to potentially improve sexual functioning and satisfaction. It is also recommended that the use of pro-erectile agents and devices be considered, recognizing that most of the benefit is specifically for erectile dysfunction.
Vasomotor symptoms	For women with vasomotor symptoms, the most effective intervention is hormone therapy. For women unable or unwilling to use hormone therapy, alternatives are available (for example, paroxetine, venlafaxine, gabapentin, clonidine).	Men with vasomotor symptoms should be offered medication for symptomatic improvements. Options include venlafaxine, medroxyprogesterone acetate, cyproterone acetate, and gabapentin.
Genital symptoms	Women with symptoms from vaginal atrophy should be managed in the same way as women without cancer: vaginal moisturizers for daily comfort or lubricants with sexual activity, or both. For those who do not respond or whose symptoms are more severe at presentation, vaginal estrogen can, with few exceptions, safely be used. Vaginal dilators can be of benefit in the management of vaginismus or vaginal stenosis. Cognitive behavioral therapy and exercise may be useful to decrease lower urinary tract symptoms. The Expert Panel felt that pelvic floor physiotherapy should also be offered to women with pain or other pelvic floor issues.	

Vasomotor Symptoms

The expert panel recommended that, for women with vasomotor symptoms, the most effective intervention is hormone therapy. The expert panel emphasized that premenopausal women with non-hormone-sensitive cancers who develop vasomotor symptoms from their cancer treatment should be counselled to consider hormone therapy until the average age of menopause (approximately 51 years). At that point, they should be re-evaluated. Risks typically cited for hormone therapy are derived from studies of postmenopausal women and might not be applicable to premenopausal women. Beyond the age of 51 years, hormone therapy is an individual decision with few risks for symptomatic patients in their 50s. It should be intermittently evaluated for long-term use. Having hormone-sensitive breast cancer is a contraindication to using systemic hormone therapy.

For women unable or unwilling to use hormone therapy, alternatives are available (for example, paroxetine, venlafaxine, gabapentin, clonidine). Women with breast cancer taking tamoxifen should not be offered paroxetine or fluoxetine because those agents inhibit CYP2D6 activity, which transforms tamoxifen into its active metabolites. Taking both drugs together could inhibit the effect of tamoxifen[26].

Psychosocial counselling might also improve vasomotor symptoms.

The evidence base for this recommendation consists primarily of high-quality guidelines[25–27] drafted for the general population, but also includes data from women with cancer. In addition, four other publications provide evidence of moderately high quality[38,39,45,46].

Genital Symptoms

The expert panel recommended that women with symptoms from vaginal atrophy (for example, dryness) should be managed in the same way as women without cancer. Vaginal moisturizers for daily comfort or lubricants with sexual activity can be tried. The expert panel felt that it was important to emphasize the role of vaginal health for physical examination and cancer follow-up, and not only for sexual function.

For those who do not respond or whose symptoms are more severe at presentation, vaginal estrogen can be safely used. For women with hormone-positive breast cancer who are symptomatic and not responding to conservative measures, vaginal estrogen can be considered after a discussion. Whether vaginal estrogen can be used safely in women with breast cancer on aromatase inhibitors is uncertain because of limited data.

Vaginal dilators can be of benefit in the management of vaginismus or vaginal stenosis. The expert panel felt that there was a role for vaginal dilators in the prevention of stenosis for patients with cervical cancer treated with radiation.

Cognitive behavioral therapy and exercise could be useful to mitigate lower urinary tract symptoms. The expert panel felt that pelvic floor physiotherapy should also be offered to women with pain or other pelvic floor issues.

The evidence base for this recommendation consists primarily of high-quality guidelines[25,28] drafted for the general population, but also includes data from women with cancer. In addition, eight other publications provide evidence of moderately high quality[38–40,44,45,47–49].

Men's Recommendations

Sexual Response

The expert panel recommended that PDE5i medications be used to help men with erectile dysfunction. For men who do not respond to PDE5i medications, alternative interventions such as a vacuum erectile device, a medicated urethral system for erection, or intracavernosal injection should be considered. There could be some benefit to initiating the use of any of those interventions earlier after cancer treatment rather than later.

Contraindications to a PDE5i include the use of nitrates in any form. Although the question of whether the effectiveness of PDE5i medications with respect to sexual response is different when comparing daily with on-demand use can depend on the type of PDE5i medication, it seems that compliance and side effects might be better with the use of a daily treatment protocol. The heterogeneity of the studies suggests that PDE5is can be used for cancer patients experiencing erectile dysfunction no matter the type of cancer treatment. And although PDE5i medications might be most effective for men whose radical prostatectomy used a nerve-sparing approach, it is recommended that those agents be used as a first-line approach regardless of the type of surgery.

The expert panel felt that men are best served by offering a combination of psychosocial counselling and PDE5i treatment. For men with partners, the counselling would ideally be directed toward the couple. It might not directly overcome erectile dysfunction, but it could help the couple to set realistic expectations and to adapt to ongoing use, potentially improving adherence and satisfaction with PDE5i medications. On the basis of expert opinion, the Working Group also recommended regular stimulation (for example, masturbation) to improve sexual response. The evidence base for these recommendations consists of thirty-nine publications of low-to-moderate quality[34,50–87].

Body Image

The only literature in the body image domain for men pertain to genital changes, specifically penis length. The expert panel recommended that a vacuum erectile device be used daily to prevent penis length loss. There could be some benefit to initiating the use of such devices earlier after cancer treatment rather than later. Early treatment with PDE5i medications could also be beneficial for this outcome. The evidence base for these recommendations consists of three publications of moderate quality[60,74,88].

Intimacy and Relationships

The expert panel recommended that individual or couples counselling be offered to men wishing to improve relationship or intimacy issues. Current evidence does not support a particular intervention to improve intimacy or relationships. The expert panel acknowledges that none of the studies that showed a significant improvement attributable to any intervention. It could be that relationships that have endured a cancer experience might already be highly functioning and that measuring improvements might be difficult. The expert panel believed that psychosocial counselling will help overall, assisting couples to adapt to sexual dysfunction and to adhere to and understand the expectations for the use of medications and devices. It might also enhance communication in general and communication related to sexual activities for the couple. The evidence base for these recommendations consists of nine publications of low-to-moderate quality[72,73,89–95].

Overall Sexual Function and Satisfaction

The expert panel recommended that psychosocial counselling be offered to men with cancer (and their partners) to potentially improve sexual functioning and satisfaction. It is also recommended that the use of pro-erectile agents and devices be considered, recognizing that most of the benefit is specifically for erectile dysfunction. Counselling could be used to help couples integrate interventions into their usual sexual activities. The evidence base for these recommendations consists of nine publications of low-to-moderate quality[34,51,60,75,89,95–98].

Vasomotor Symptoms

The expert panel recommended that men with vasomotor symptoms should be offered medication for symptomatic

improvement. Options include venlafaxine, medroxyprogesterone acetate, cyproterone acetate, or gabapentin. Acupuncture might be a suitable alternative. The evidence base for these recommendations consists of eleven publications of low quality[99–109].

DISCUSSION

This guideline is meant to provide evidence-based recommendations for common sexual issues affecting people with cancer. It is hoped that, by creating a comprehensive source for effective interventions, the barriers associated with discussing this important issue will begin to be dismantled.

It is clear from the recommendations that counselling has an important role to play in addition to medications or devices. The evidence does not provide specific support for one type of psychosocial intervention over another, for one particular target (for example, the individual or the couple) over another, or for a particular modality over another (for example, in person or Web-based). Future work will be required to refine these recommendations. When making recommendations, the expert panel also considered the possible risks with counselling, which were felt to be low.

The literature that supports these recommendations has limitations that are detailed elsewhere[20]. For example, the quality of the data was often moderate at best. Although the expert panel felt that it was reasonable to extrapolate the available evidence to all cancer patients, the evidentiary base primarily concerned patients with breast or prostate cancer. There was a paucity of data for other cancer types and for special populations or conditions.

Despite the limitations with the literature, it is possible in the clinic to help patients with issues related to sexual function. The most important step is asking whether they have any sexual health problems, whether they would like to discuss those problems further, and whether they would like information or a referral for help. Medication or devices can be of help, but time spent educating, discussing, and supporting is vital. It is hoped that knowledge products such as this guideline will help to address known barriers to discussing sexual function in clinic and will make practitioners more willing to ask.

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CONFLICT OF INTEREST DISCLOSURES

We have read and understood *Current Oncology*'s policy on disclosing conflicts of interest, and we declare the following interests: LB is a member of the writing group for the Scientific Network on Female Sexual Health and Cancer and a CCO clinical lead in patient-reported outcomes. DE has been a speaker to the advisory boards for Lilly and Pfizer and a consultant to AMS, Pfizer, Lilly, and Astellas; DE has also received research support from Prostate Cancer Canada and from AMS. AK is employed as sexual counsellor at CancerCare Manitoba. WW has received support from Pfizer for a fellowship and database development and is an author of a sexuality guideline for the Society of Obstetricians and Gynaecologists of Canada. CZ, AM, and KM have no competing interests to declare.

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