How to care for cancer survivors

Cancer survivors are at risk of recurrence of their original cancer and of developing another cancer due to their genetic make up, environmental exposure and/or cancer treatment. In many cases, the family physician has an integral role in following up these patients.

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A cancer survivor is anyone who has completed treatment for a cancer and has no evidence of disease. There are increasing numbers of cancer survivors due to improved early detection and more effective treatment, particularly greater use of adjuvant systemic therapy after surgical treatment of breast and colorectal cancers. Follow up after successful cancer treatment is advocated for several reasons, including patient reassurance, 'early' detection of recurrence or of a new primary tumour, and monitoring of long term toxic effects of cancer treatment.

Many cancer survivors have other medical conditions and their family physician is integral to ongoing care. Some cancer patients are followed regularly after completion of treatment by all the clinicians who participated in treatment. This approach may be an unjustified burden to patients and funders of care, and in many cases the family physician may be the most appropriate clinician to assume this role.

This article addresses the medical follow up needs of cancer survivors and reviews the evidence relating to scheduled follow up versus symptomatic presentation. We confine our discussion to survivors of breast, colorectal and prostate cancer, and do not address the psychosocial needs of cancer survivors.

Breast cancer

The goals of follow up for patients who have had breast cancer are: early detection of local or systemic recurrence, screening for a new primary breast cancer, detection of treatment-related toxicities,

IN SUMMARY

- **Follow up of cancer survivors is advocated for several reasons, including early detection of recurrences or a new tumour, monitoring treatment-related sequelae, and undertaking family screening if appropriate.**
- **The annualised rate of breast cancer recurrence is 1 to 2% per annum for the first five years after treatment for localised breast cancer. A history of breast cancer doubles the risk of a second breast cancer to about 1% per year.**
- **Almost one in three patients who had curative surgery for colorectal cancer dies of recurrent disease; early detection of resectable recurrence improves survival probability.**
- **Earlier detection of prostate cancer and the chronicity of metastatic disease in many patients contributes to a large number of men with prostate cancer surviving for many years after diagnosis and/or treatment. PSA testing is recommended six monthly for five years then annually, and digital rectal examinations are recommended annually.**
- **In addition to the scheduled follow up investigations, cancer survivors should be encouraged to undergo routine preventive health practices, such as vaccination, and lifestyle modification, such as smoking cessation.**

provision of psychosocial support, and identification of the family history of cancer and screening recommendations for family members if appropriate.

Table 1 summarises the follow up schedule for survivors of breast cancer recommended by the NHMRC's *Clinical Practice Guidelines for the Management of Early Breast Cancer*.[1]

Early detection of local recurrence and metastatic disease

The annualised rate of breast cancer recurrence is 1 to 2% per annum for the first five years after treatment of localised breast cancer. After a mastectomy, local recurrence is usually detected by self- or clinical examination. After breast conserving surgery and breast irradiation, self-examination, clinical examination and breast imaging should be used to detect recurrence as well as new breast cancers. Detection of cancer recurrence in a conserved breast is associated with an increased risk of systemic relapse, but local control can usually be achieved by mastectomy. Investigations for metastatic disease should be undertaken only if symptoms are present. No survival benefit or improvement in quality of life has been reported after intensive follow up compared with standard follow up.[2]

Screening for a new primary breast cancer

A history of breast cancer doubles the risk of a second breast cancer to about 1% per year, even if there is no family history. Annual mammography of the conserved breast and the contralateral breast is recommended.

Detection and management of treatment-related toxicities

Patients who have been treated for breast cancer should be followed up to assess and manage treatment-related toxicities, including the following.

- **Complications of axillary dissection with or without radiation.** Ongoing management of arm lymphoedema may be necessary following axillary dissection and/or radiation.
- **Complications of chemotherapy and radiotherapy.** In premenopausal women at the time of breast cancer diagnosis, premature ovarian failure and menopausal symptoms are common complications of chemotherapy. Various interventions may ameliorate these symptoms, including the use of antidepressant medications. Exogenous oestrogens are not recommended for such women since ovarian ablation may contribute to disease control, although in women taking tamoxifen, the risks of using exogenous oestrogens are small. Premature ovarian failure accelerates bone mineral density (BMD) loss, and in women with a family

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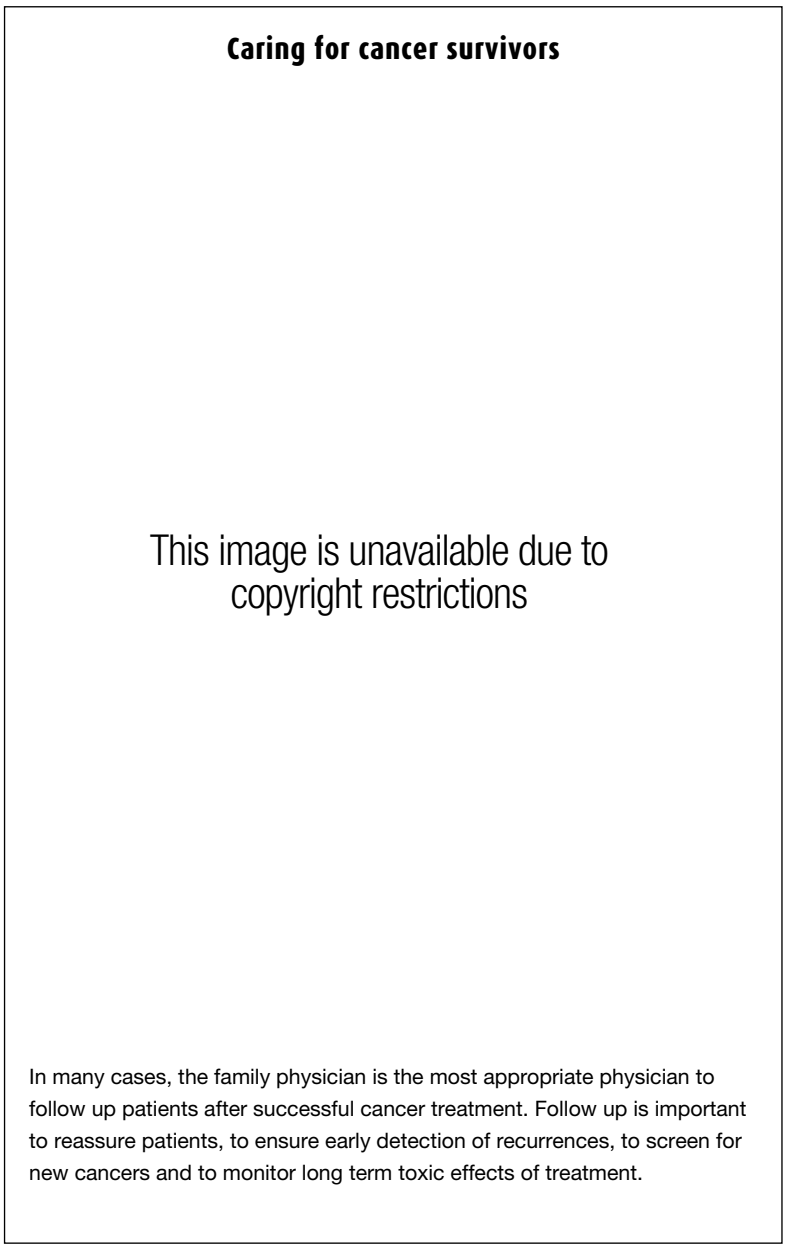

In many cases, the family physician is the most appropriate physician to follow up patients after successful cancer treatment. Follow up is important to reassure patients, to ensure early detection of recurrences, to screen for new cancers and to monitor long term toxic effects of treatment.

continued

Table 1. Recommendations for follow up after breast cancer*

Investigation	Time after breast cancer		
	1 to 2 years	**3 to 5 years**	**After 5 years**
History and examination	3 monthly	6 monthly	Annually
Mammography (with ultrasound if indicated)	At 6 to 12 months after radiotherapy for conserved breast Annually for contralateral breast	Annually	Annually
Chest x-ray, bone scan, blood tests	At any time only if clinically indicated	At any time only if clinically indicated	At any time only if clinically indicated

* National Health and Medical Research Council. Clinical practice guidelines for the management of early breast cancer. 2nd ed. Canberra: NHMRC; 2001 (www.nhmrc.gov.au).[1]

history of osteoporosis, monitoring of BMD is justified.

- **Complications of endocrine therapy.** Tamoxifen therapy causes endometrial hypertrophy in 30% of women and increases the risk of endometrial cancer by about 1 to 2 per 1000 person-years. Endometrial surveillance is not necessary routinely, but postmenopausal bleeding merits investigation in all women taking tamoxifen. Tamoxifen increases the risk of thromboembolic disease, but routine prophylactic anticoagulation is not recommended. Aromatase inhibitors are increasingly used as adjuvant treatment in postmenopausal women with oestrogen receptor-containing tumours. They deplete postmenopausal oestrogen levels and accelerate BMD loss and fractures. Women taking aromatase inhibitors should have a BMD scan at baseline and then biannually, particularly if they have a family history of osteoporosis. If osteoporotic fractures are detected, bisphosphonate treatment can reduce further BMD loss.

Other cancers

Women with a family history of breast cancer may be at increased risk of cancer of the ovary and of some other sites. Genetic counselling and/or genetic testing may be appropriate.

Colorectal cancer

The rationale for follow up after curative resection of colorectal cancer is both detection of second primary tumours and early detection of recurrence. After adjuvant chemotherapy and definitive chemoradiation for rectal cancers, monitoring toxicities of treatments should also be undertaken.

Management of treatment-associated effects

Long term side effects from fluorouracil are rare, but persistent peripheral sensory neuropathy can be a complication after oxaliplatin.

Pelvic radiation therapy can cause persistent diarrhoea and episodic bleeding from radiation proctitis, and cystitis.

GPs should be alert to the challenges of stoma care. These include issues of body image and sexuality, and sexual dysfunction.

Table 2. Recommendations for follow up after colorectal cancer*

Investigation	Time after colorectal cancer		
	Up to 2 years	**3 to 5 years**	**After 5 years**
History, examination and CEA	3 monthly	6 monthly	Annually
Colonoscopy	At 3 to 6 months, postoperatively if colonoscopy was not possible at diagnosis	Once	Every 3 to 5 years
CT scan	If clinically indicated by symptoms or elevated CEA	If clinically indicated by symptoms or elevated CEA	If clinically indicated by symptoms or elevated CEA

* Australian Cancer Network Colorectal Cancer Guidelines Revision Committee. Clinical practice guidelines for the prevention, early detection and management of colorectal cancer. Sydney: The Cancer Council Australia and Australian Cancer Network; 2005 (www.cancer.org.au/guidelines).[5] Abbreviation: CEA = carcinoembryonic antigen.

Table 3. Recommendations for follow up after prostate cancer*

Investigation	Time after prostate cancer	
	1 to 5 years	After 5 years
History, examination and PSA	6 monthly	Annually
Digital rectal examination	Annually	Annually
Bone scan, CT scan	If clinically indicated by symptoms or elevated PSA	If clinically indicated by symptoms or elevated PSA

* National Comprehensive Cancer Network. NCCN clinical practice guidelines in oncology; 2005 (www.nccn.org).[8]
Abbreviation: PSA = prostate specific antigen.

Detection of second primary colorectal tumours

Patients diagnosed with colon cancer have an increased incidence of metachronous primary colorectal cancers and adenomatous polyps. Colonoscopic surveillance with the removal of any adenomas is recommended at 12 months and then at two to five years.

Early detection of recurrence

Almost one in three patients who had curative surgery for colorectal cancer dies of recurrent disease. Early detection of resectable recurrence improves survival probability. A recent meta-analysis reported a 19% survival benefit for trials with varying scheduled follow up regimens.[3,4]

The Australian NHMRC clinical guidelines limit their recommendations to history taking, physical examination, carcinoembryonic antigen (CEA) testing and colonoscopy in the frequency described below and in Table 2.[5] The American Society of Clinical Oncology guidelines and those of the Royal Marsden Hospital in London recommend the addition of an annual CT scan or liver ultrasound for three years.

- **Colonoscopy.** Colonoscopy is performed at diagnosis to exclude synchronous lesions. It is recommended 12 months postoperatively and then every two to five years.
- **CEA.** Most colorectal cancers produce CEA. Elevated levels may precede the development of symptoms or clinical signs of metastasis by three to eight months.[6] CEA testing is recommended every three months for the first two years after treatment and then every six months for the next three years. Patients with raised CEA levels should be investigated with abdominal CT or colonoscopy as appropriate.

Assessment of family cancer history

Follow up visits provide an opportunity to ensure that an accurate family history has been taken for familial adenomatous polyposis and hereditary nonpolyposis colorectal cancer. Persons with familial adenomatous polyposis have a nearly 100% chance of developing colorectal cancer by the age of 50 years. Persons with hereditary nonpolyposis colorectal cancer have an increased risk for colorectal cancers, as well as cancers of the endometrium, small bowel, ureter and renal pelvis. NSAIDs reduce the risk of polyps and colorectal cancer and so their use should be considered unless they are contraindicated.

Prostate cancer

Earlier detection of prostate cancer by prostate specific antigen (PSA) screening and the chronicity of metastatic disease in many patients contributes to a large number of men with prostate cancer surviving for many years after diagnosis and/or treatment. Follow up of these men may include monitoring PSA, surveillance for recurrence, screening for treatment-related complications and, rarely, family screening.

Surveillance of prostate cancer patients

Velocity of PSA change before treatment and high tumour Gleason scores are associated with a more aggressive course.[7] PSA testing is recommended every six months for five years and then annually. In the absence of metastasis, PSA is close to zero after radical prostatectomy and declines over months towards zero after radical radiotherapy. Elevated PSA levels after this time indicate recurrence. Digital examination should be performed annually (see Table 3).[8]

Screening for treatment-related complications

After radical prostatectomy, adverse symptoms, including erectile dysfunction and urinary incontinence, are common. After pelvic radiotherapy, erectile dysfunction and urinary bleeding are not uncommon, and the incidence of bladder cancer is increased.

Useful websites

National Health and Medical Research Council
www.nhmrc.gov.au

Breast Cancer Network of Australia
www.bcna.org.au

National Breast Cancer Centre
www.nbcc.org.au

The Cancer Council Australia
www.cancer.org.au

The National Comprehensive Cancer Network (USA)
www.nccn.org

Family screening

Prostate cancer may be associated with a family history of prostate and breast cancer. Increased surveillance and genetic counselling may be appropriate.

Conclusion

Caring for cancer survivors after their primary treatment involves screening for recurrence, detection of new cancers and detection of treatment-related sequelae. Family screening is also a part of this process. Cancer survivors should be encouraged to undergo routine preventative health practices such as vaccinations; lifestyle modifications such as smoking cessation, exercise and having a balanced diet; and routine screening such as Pap smears, mammograms and digital rectal examinations. The family physician is central to this process. MT

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