The management of cancer has evolved considerably over the past 3 decades. Cancer care is moving toward comprehensive, multidisciplinary whole-patient care in which followup is conducted by the appropriate members of the multidisciplinary team (e.g. oncologists, family physicians, nurses and psychologists knowledgeable in cancer care). This current paper focuses on biomedical literature-based recommendations. For many solid tumour sites, biomedical treatment requires the combined expertise of surgical, medical and radiation oncologists.1-3 Following the completion of definitive primary therapy, a followup plan should be provided to all cancer survivors and these patients should be systematically monitored for disease recurrence and possible late effects of treatment. Theoretically, an optimal followup plan should be able to maximize patient benefit and quality of life by identifying curable recurrences while minimizing the use of ineffective tests as well as the costs and possible toxicities associated with them.2,3

The unfortunate reality is that 70–90% of cancer recurrences are discovered by patients themselves between regularly scheduled visits. In addition, the vast majority of solid tumours are incurable at the time of metastatic presentation and there is also little evidence that commencing treatment in the early asymptomatic state of recurrence, as opposed to initiating therapy at the time of symptomatic recurrence, will prolong survival.2,3

While no investigations to date have documented adverse psychologic effects when routine diagnostic testing is withheld, studies have shown that patients’ priorities may be different from physicians in that psychologic support and ongoing communication derived from followup have been valued as highly as any possible prolongation of survival.4 Recent studies have also suggested that generalists can perform post-treatment followup in an equally successful and acceptable manner as specialists.5,6

Relatively few randomized trials have assessed optimal intensities of followup or provided cost-benefit analysis for solid tumours other than breast, lung and bowel cancer.7,9 For most solid tumours, post-treatment surveillance strategies have evolved haphazardly, largely without the benefit of clinical trials to demonstrate clinical or cost effectiveness — in some studies, actual followup costs have varied as much as 28 times.2 In addition, investigations have revealed that physicians tend to frequently employ more intense followup than is justified. Smith has documented possible factors responsible for this as well as identifying possible reasons that patients might prefer more intensive followup protocols (Tables 1, 2).10

Based on a comprehensive survey of the currently available literature, we provide followup recommendations for the major solid tumours. Because most recurrences will be detected between scheduled followups, all patients need to be educated regarding possible symptoms of relapse in order to play a significant self-care participatory role.1,2 These followup recommendations are intended to assist but not replace an individual physician’s judgment with respect to particular patients or clinical situations. Followup care must be individually tailored, based on the type of cancer, stage of the disease, other prognostic factors, the type of treatment received, and overall health status, including potential cancer treatment-related problems as well as currently available therapies.1,3

Important goals of followup1-3

- Early recognition and treatment of potentially curable disease recurrences or a second primary cancer
- Identification of symptoms related to metastatic disease and appropriate work-up and referral to specialists
- Identification and management of treatment-related complications
- Provision of ongoing psychosocial support including an opportunity for ancillary measures such as psychologic counselling or physical therapy
- The facilitation of longitudinal data collection for research purposes

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Breast cancer followup recommendations

Regular post-treatment surveillance is recommended for women with breast cancer after completion of primary therapy.\(^{11-13}\) Although the risk of recurrence is highest during the first 5 years of primary treatment, the threat of a breast cancer recurrence may persist for 20 years or longer. The risk of a new tumour in the contralateral breast is approximately 0.5–1% per year. Evidence does not support more intense breast cancer surveillance since no curative systemic therapy has yet been developed for recurrent metastatic disease.\(^{11-13}\) The incidence of local regional recurrence after mastectomy or breast-conserving surgery approaches 10% and approximately 40% of isolated local regional recurrences will be diagnosed during routine visits in asymptomatic patients, with some clinical evidence for improved survival in this subset.\(^{14}\)

- In asymptomatic women treated with curative intent: conduct a careful history and physical examination every 3–6 months for the first 3 years then every 6–12 months for the next 2 years and annually thereafter; counsel patients regarding possible symptoms of recurrence, including new lumps, bone pain, chest pain, dyspnea, abdominal pain or persistent headaches.
- Women treated with breast-conserving therapy: order post-treatment mammogram no earlier than 6 months after definitive radiation therapy (subsequent mammograms should be obtained every 6–12 months). Perform mammography yearly if stability of mammographic findings is achieved after completion of locoregional therapy.
- Breast magnetic resonance imaging (MRI) is currently not recommended for routine breast cancer surveillance; may be an option for post-therapy surveillance in women at high risk of bilateral breast cancer (e.g. carriers of breast cancer susceptibility gene 1 [BRCA1] or BRCA2 mutations).
- Regular gynecologic followup is recommended. Patients who receive tamoxifen therapy are at increased risk for endometrial cancer and should be advised to report any vaginal bleeding promptly.
- Consider baseline and periodic bone density determinations in women taking aromatase inhibitors.
- Routine use of complete blood count (CBC), liver function testing (LFT), chest x-ray, tumour markers (cancer antigen 15-3 [CA15-3], carcinoembryonic antigen [CEA]), liver ultrasound, bone scan, computed tomography (CT) and positron emission tomography (PET) scans, are not currently recommended for surveillance in otherwise asymptomatic patients and thus should only be performed as clinically indicated.

Since the annual number of new breast cancer cases in Canada is approximately 23,000, followup after treatment for breast cancer is especially relevant. It is important to determine what followup is necessary, and who should carry it out.

The sheer number of new breast cancer cases each year makes oncologist followup for all cases impractical, if not impossible. The Ontario randomized study\(^{1}\) provided excellent data showing that family physician followup is not inferior to cancer centre followup, and that patient quality of life/satisfaction is equivalent. A broad spectrum of patients participated in this study, including

**TABLE 1. Possible rationale for physicians employing excessively intensive followup care**

- Lack of understanding of the natural history of the individual cancer resulting in an unrealistic estimation of survival
- Overestimation of the value of followup
- Belief that the early discovery of asymptomatic recurrent metastatic disease frequently produces improved survival or clinical outcome for most solid tumours
- Perceived difficulty in explaining to patients the possible futility of aggressive followup and investigative procedures
- Physician compassion
- Possible financial incentives related to followup testing

**TABLE 2. Possible rationale for patients’ preference for more intensive followup care**

- Overestimation of the realistic chances of survival in relation to cancer type
- Unawareness of the potential lethality of recurrence, limited options for retreatment, or the consequences of undertaking inappropriately aggressive therapy
- Willingness to participate in followup for psychologic support and ongoing communication with their healthcare team rather than a hope for prolongation of survival
- Tolerance for major therapeutic toxicities despite a small chance of benefit
- Desire to please treating healthcare professionals as a “good” patient/too difficult to decline offered therapies

**Expert perspectives**

**Breast cancer followup care**

Lorna Weir, MD, FRCP, Radiation Oncologist, BC Cancer Agency; Staff, Vancouver General Hospital; Clinical Professor, University of British Columbia.

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women with early breast cancer. About one-quarter of the breast cancer patients had positive nodes, and about one-quarter underwent chemotherapy. It is important to note that the family physicians in this study were provided with a detailed 1-page description of followup recommendations. If a similar strategy is used and includes an explanation to the patient of the goals of followup and the importance of ongoing mammography surveillance, it is reasonable to have the majority of breast cancer patients followed by their family physician after they have recovered from therapy.

Looking forward, as we are increasingly able to individualize therapy for patients based on new genomic and other data, we will likely need to have a more individualized approach to followup. This has already occurred for patients with known BRCA mutations. We have also learned that patients with estrogen receptor (ER)-, progesterone receptor (PR)- and human epidermal growth factor receptor 2 (HER2)- negative tumours (so-called “triple negative”) have a pattern of earlier recurrence. The followup schedule for this group should reflect this pattern and should not necessarily be the same as for a patient with a small low-grade ER-positive cancer. The large number of women taking hormonal therapy for 5 years or longer means that awareness of possible medication toxicities is very important for both the patient and her physician. As prescribing oncologists, we have a responsibility to make sure this information is properly communicated.

In summary, despite the high prevalence of breast cancer, outcomes are improving. As we learn more about the biology and are able to individualize therapy better, results will continue to improve and toxicity should be reduced. Followup practices must keep pace with these new developments, and we should be prepared to reevaluate our recommendations as needed in order to reflect this.


We currently have no published randomized data to guide us in formulating true evidence-based followup guidelines for patients following definitive therapy for localized prostate cancer. We do expend a shocking amount of money on continuing care, however. A recent American paper showed that 32% of the costs associated with the care of a prostate cancer patient occur after the first 12 months, the majority of which are from office visits and androgen deprivation therapy (ADT). If a patient is followed for more than 7 years, the average cost of the continuing care becomes equal to the cost in the initial 12 months of care, including definitive therapy costs (surgery, radiation, etc.).

There is evidence to support omitting a routine DRE in RP patients with undetectable PSA levels. Clearly, the DRE remains an essential part of the followup of the post-radiation patient.

Factors influencing the chance of recurrence post radical prostatectomy or radiation therapy include original Gleason score, baseline prostate-specific antigen (PSA), and final pathologic stage. Biochemical recurrence after radical radiotherapy is defined as 3 consecutive PSA rises from the nadir with a minimum absolute value of 0.5 µg/L. The nadir is typically achieved in 12–24 months post radiation therapy. However, some patients treated with brachytherapy may experience a non-recurrence related “bounce” in the PSA level, typically occurring 1–3 years post therapy, where PSA levels may rise temporarily to 4 ng/mL or greater. Biochemical recurrence after radical prostatectomy (RP) is defined as a persistently detectable PSA level at any time after surgery, or two successive increases to an absolute value greater than 0.3 µg/L. The goal of post-treatment followup for localized prostate cancer is to detect early recurrence amenable to salvage treatment (e.g. post-prostatectomy radiation therapy, cryotherapy, or rarely, post-radiation therapy prostatectomy), or for the early identification of metastatic disease. An increased effectiveness of early interventions in incurable metastatic disease, such as presymptomatic androgen deprivation therapy, has not been proven to date.

We have also learned that patients with estrogen receptor (ER)-, progesterone receptor (PR)- and human epidermal growth factor receptor 2 (HER2)- negative tumours (so-called “triple negative”) have a pattern of earlier recurrence. The followup schedule for this group should reflect this pattern and should not necessarily be the same as for a patient with a small low-grade ER-positive cancer. The large number of women taking hormonal therapy for 5 years or longer means that awareness of possible medication toxicities is very important for both the patient and her physician. As prescribing oncologists, we have a responsibility to make sure this information is properly communicated.

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In summary, despite the high prevalence of breast cancer, outcomes are improving. As we learn more about the biology and are able to individualize therapy better, results will continue to improve and toxicity should be reduced. Followup practices must keep pace with these new developments, and we should be prepared to reevaluate our recommendations as needed in order to reflect this.

Although there is some variation in practice, the most commonly accepted PSA threshold for biochemical failure in patients eligible for early salvage therapy post-RP is 0.2 ng/ml plus one additional rising PSA level.4 There is now an increasing trend toward using a PSA threshold of 0.4 ng/ml plus one further rising value as this may be better correlated with later objective clinical progression.

A review of prostate cancer recurrence patterns indicate that the risks are highest in the first 3 years after definitive therapy, and can be stratified by initial risk group and in the case of RP, by pathologic findings such as margins, extraprostatic extension and nodal status.4 Thus, followup intensity can be tailored to the individual patient, but should be uniform for most. PSA is an exceptionally good followup tool. A rising PSA will predate objective progression by years. This argues against more frequent monitoring after the initial at-risk period. Also, by 3 years, most treatment-related toxicity has stabilized and does not require frequent intensive counselling.

Overall, Brigden and Ahmed present a strong and logical case for a standardized and reduced-intensity followup schedule following definitive local therapy. In fact, an even less intensive schedule can be supported by evidence and an understanding of prostate cancer recurrence patterns. After 3 years, followup intervals can be extended to annual visits with no known sacrifice in survival outcomes and with patients receiving appropriate early care when it is needed most.1


**FOllOwuP RECOMMenDATIOnS**

**Lung cancer (small and non-small cell lung cancer)**

The optimal approach to post-treatment followup of patients with lung cancer, including the role of surveillance imaging studies, remains controversial, with no randomized trials currently reported, although a prospective French study is in progress.18-20 Overall, the expected 5-year survival for all patients diagnosed with lung cancer is around 15%. However, approximately 20–30% of patients with limited-Stage small cell lung cancer (SCLC) who remain disease-free after 2 years may be cured after appropriate combined modality therapy. Most relapses in small cell and non-small cell lung (NSCLC) cancer patients treated for cure occur within the first 3 years of initial therapy, with over 50–90% presenting within the first 2 years.18,19 A true local regional recurrence in NSCLC occurs in only 10–20% of patients but only 1–4% of such cases are amenable to re-surgery, with a survival of 0–10%. Thus only a minority of such local recurrences will experience long-term benefit. While metastatic tumours occur in 1–3% of cured NSCLC patients, only 50% are operable, producing a 5-year survival of less than 20%. Thus, the detection of metachronous tumours is beneficial for less than 0.1% of all lung cancer patients.18,20 With treated small cell, the risk of developing a NSCLC is 6% per patient per year. All lung cancer patients are at increased risk for developing other aerodigestive cancers including esophageal and head and neck cancer.18,19

- In patients treated with curative intent, perform a history and physical examination every 3–6 months for the first 3 years, every 6–12 months for the next 2 years, annually thereafter.

- In patients with adequate performance status and pulmonary function who might be re-treated with curative intent therapy, surveillance imaging study of the chest is often performed every 6 months for the first 2 years and then annually, although there is currently no randomized evidence to justify this approach.

- Routine use of blood tests, PET scanning, sputum cytology, tumour markers and fluorescence bronchoscopy should only be performed as clinically indicated.

- Provide smoking cessation counselling to all patients.

**Malignant mesothelioma**

Malignant mesothelioma has an extremely poor prognosis with a median survival of 9–20 months.21 Long-term survival is infrequent and can only be achieved in patients treated with multimodality therapy. Extrapleural pneumonectomy is associated with significant perioperative mortality and morbidity.21

- In patients treated with curative intent, perform a history and physical examination every 3–6 months for the first 3 years, every 6–12 months for the next 2 years, annually thereafter.

- Followup imaging study and laboratory tests only as clinically indicated.

**Thymomas**

Thymomas are usually slow-growing tumours with a 5-year overall survival approaching 70%.22 Thymomas can be frequently associated with paraneoplastic disorders including myasthenia gravis, pure red cell aplasia and hypogammaglobulinemia. Tailor followup to the individual patient taking...
Relapses occurring within the first 3 years.23,24 The overall rates following curative resection with the majority of both esophageal and gastric cancers have high recurrence rates. 

**FOllOWuP RECOMMENDATIONS**

Gastrointestinal tract cancers

**FOLLOWUP RECOMMENDATIONS**

**Esophageal and gastric cancer**

Both esophageal and gastric cancers have high recurrence rates following curative resection with the majority of relapses occurring within the first 3 years.23,24 The overall 5-year survival rate after definitive treatment for esophageal cancer ranges from 5–30% while for gastric cancer the corresponding figures are 5–70%, depending on stage. There is lack of clinical evidence for either site that postoperative surveillance and the early detection of asymptomatic metastatic disease improves survival or improves clinical outcome. Thus, followup investigations should be tailored based on disease stage, adjuvant treatment provided, performance status, and clinical signs and symptoms. 23,24

- In patients treated with curative intent: history and physical examination every 4–6 months for the first 3 years, every 6–12 months for the next 2 years, annually thereafter.
- Followup imaging study and laboratory tests only as clinically indicated.

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**Expert perspectives THORACIC cancer followup care**

Ronald Burkes, MD, FRCPC, Professor Medicine, University of Toronto; Staff, Mount Sinai Hospital; Consultant Oncology, Baycrest Centre for Geriatric Care; Staff, University Health Network-Princess Margaret Hospital.

Lung cancer is the most common cause of cancer deaths in North America in both men and women. NSCLC accounts for 85% of all lung cancer with the remainder attributed to SCLC. Approximately 25% of patients with NSCLC present with Stages I and II disease for which the treatment is surgery often followed by adjuvant chemotherapy. A further 35% of patients present with locally advanced Stage III disease in which a combined modality approach is utilized with curative intent. Unfortunately, many patients present with advanced disease (40%) in which the treatment approach is palliative and includes chemotherapy, molecular targeted therapy, radiation therapy and supportive care. Even in patients treated with curative intent for early-stage disease, many patients develop local and systemic recurrences for which curative intent therapy is unlikely to be possible. These patients are also at risk for metachronous second-lung primaries as well as other malignancies such as head and neck tumours.

The goals of followup are twofold. One is to manage the complications resulting from curative-intent therapy and the second is to detect recurrences of the primary tumour or the development of a second primary early enough such that curative therapy may be offered. The optimal followup of patients with SCLC and NSCLC, especially those treated with curative intent, is controversial. Although guidelines have been developed by the European Society for Medical Oncology (ESMO), American Society of Clinical Oncology (ASCO), American College of Chest Physicians (ACCP) and the National Comprehensive Cancer Network (NCCN), there are no randomized trials supporting the benefit of an intensive surveillance program. The recommendations provided in this document by Drs. Brigden and Ahmed summarize relevant published literature including retrospective and prospective series and guidelines that have been developed by a number of different groups and serve as a reasonable surveillance approach in the absence of randomized studies. The decision as to how best to follow patients post treatment must be individualized following discussion with the patient. Certainly as our treatments improve the outcomes of patients, even in those with advanced disease, close followup may take on a more significant role.

**FEATURE**

- Periodic endoscopic examination as clinically indicated.
- Laboratory testing including CBC, serum chemistry, LFT, and CEA only as clinically indicated.
- Nutritional counselling for all; vitamin B₁₂ supplementation in patients who have had proximal or total gastrectomy.

**Colon and Rectal Cancer**

Approximately 30–40% patients diagnosed with Stage II and III colon and rectal cancer recur with locally invasive or metastatic disease.²⁵–²⁷ The majority of recurrences occur within 5 years of surgical resection of a colorectal cancer (CRC), most frequently within 3 years of initial surgery. The annual incidence of metachronous tumours and adenomas is approximately 1.5–3%.²³ Recent data have demonstrated that a more intense followup program in CRC patients treated for cure may be associated with a better outcome.² Three meta-analyses have reported a 20–33% reduction in risk of death with more intensive followup and intensive followup also detected recurrences significantly more amenable to curative surgical resection.²⁶ The 2 tests resulting in survival advantage were periodic CEA determination and liver imaging. However, it is important to realize that the vast majority of patients with a sustained rise in CEA will have unresectable disease and a false-positive CEA may also occur in a variety of benign conditions.²⁵–²⁷ Rates for the successful surgical resection of isolated or limited disease have increased in the past few years, and approximately 20% of patients with hepatic relapse are currently considered for surgery. At least half of such resected patients may be cured following resection of metastatic disease.²⁵–²⁷ In addition, in the case of early detection of noncurable recurrences in the asymptomatic state, palliative chemotherapy has now been shown to prolong survival and also lengthen the time to disease progression.²⁹
- In patients treated with curative intent: history and physical examination every 3–6 months for 3 years and then every 6–12 months for the next 2 years and annually thereafter.
- Physical examination to pay particular attention to the left suprACLavicular fossa, the abdomen, liver and careful rectal examination with perineal inspection and palpation in patients post abdominoperineal resection (APR).
- CEA testing every 3 months for at least 3 years if the resection of a liver or lung recurrence might be clinically appropriate. Progressive CEA rises warrant a workup for recurrent disease. An elevated preoperative CEA level should ordinarily normalize by 6 weeks post curative surgery.
- Consider CT scan of the thorax, abdomen and pelvis (for rectal cancer) annually for 3 years in high-risk patients who might be candidates for salvage surgery or palliative chemotherapy.
- Repeat colonoscopy 1 year post surgery (and annually until free of polyps), then every 3–5 years thereafter. If no full-length preoperative colonoscopy was undertaken, schedule for 3–6 months post initial surgery to exclude synchronous malignancy or polyps.
- Flexible proctosigmoidoscopy every 6 months for 5 years for rectal cancer patients not treated with pelvic radiation.

**Anal Canal**

In advanced-stage anal cancer, approximately 10–30% of patients will relapse post combined chemoradiation therapy, with most relapses occurring within the first 3 years.²⁰,³¹ Regular and frequent followup is important because salvage surgical APR may still be curative. Except in the case of treatable local recurrence, there is no current evidence that the detection or treatment of early asymptomatic recurrent disease is associated with better overall clinical outcome or survival.²⁰,³¹
- In patients treated with curative intent, obtain a history and perform a physical examination every 3–6 months for the first 3 years and then every 6–12 months for the next 2 years, then annually thereafter.
- Examination should include abdomen and inguinal lymph node areas, DRE, anoscopy and proctoscopy, with biopsy of any suspicious lesions.
- Chest x-ray and pelvic CT scan can be considered annually for 3 years, for patients who had locally advanced disease or node positive cancers.
- Routine CBC, LFT, fecal occult blood tests or other imaging studies are not recommended unless clinically indicated.

**Pancreatic Cancer**

The prognosis of pancreatic cancer is poor. Approximately 15–20% of patients with newly diagnosed pancreatic cancer are candidates for pancreaticoduodenectomy.²²,²³ The 5-year survival following potentially resectable disease is about 25–30% for node-negative, and 10% for node-positive tumours. There is lack of evidence that early detection of asymptomatic recurrence by imaging study or tumour marker may be associated with better clinical outcome or survival. Followup investigations should be individualized based on stage of the cancer, adjuvant treatment provided, performance status, and clinical signs and symptoms.²²,²³
- In patients treated with curative intent: history and physical examination every 3–6 months for the first 3 years then every 6–12 months for the next 2 years and annually thereafter.
- Laboratory testing including CBC, serum chemistry, LFT, and tumour marker (CEA, carbohydrate antigen [CA19-9]) only as clinically indicated.
- Imaging studies and endoscopic examination only as clinically indicated.

**Cholangioelectricinoma**

There are no data to support that aggressive surveillance following curative resection improves outcome in patients with cholangiocarcinoma, where the median survival is 11–16 months.³⁰ The followup schedule should be individualized based on stage of the cancer, adjuvant treatment given, patients’ performance status and clinical signs and symptoms.³⁰
- In patients treated with curative intent: history and physical examination every 3–6 months for the first 3 years then every...
6–12 months for the next 2 years and annually thereafter.

- Laboratory testing including CBC, serum chemistry, LFT, and tumour marker (CEA, CA19-9) only as clinically indicated.
- Imaging studies and endoscopic examination only as clinically indicated.

**Hepatocellular carcinoma**

Hepatocellular carcinoma (HCC) is an aggressive cancer that often occurs in the setting of chronic liver disease, hepatitis B and C infections or cirrhosis. The long-term outcome following curative resection of HCC is widely variable. Five-year recurrence rates are between 38–68% and 5-year survival rates range from 10% to as high as 90% in carefully selected patients. The goals of post-treatment surveillance after primary treatment are early recognition and treatment of potentially curable disease recurrence, recognition of therapy-related complications and detection of symptoms consistent with metastatic disease.

- In patients treated with curative intent, perform history and physical examination every 3–6 months for the first 3 years then every 6–12 months for the next 2 years and annually thereafter.
- Consider liver imaging (ultrasound or CT scan of abdomen) every 6 months for 2 years, then as clinically indicated since curative surgery can still be offered to a minority of patients at relapse.
- Repeat serum alpha fetoprotein if initially elevated every 3 months for 2 years then every 6 months for 3 years and annually thereafter.
- Patients with evidence of hepatitis B or C at diagnosis should be monitored for viral replication activity (hepatitis B virus [HBV] DNA, hepatitis C virus [HCV] RNA), with interferon therapy and antiviral treatments considered.

**Expert perspectives**

**GASTROINTESTINAL cancer followup care**

Sharlene Gill, MD, MPH, FACP, FRCP; Medical Oncologist, BC Cancer Agency; Associate Professor of Medicine, University of British Columbia.

As stated by the authors, the main rationale for a followup program is for early detection of 1) an asymptomatic metastatic recurrence which may be amenable to a curative intervention, and 2) a second early-stage primary cancer. In the arena of GI malignancies, with the exception of CRC, there is essentially no evidence to support the association of intensive followup with improved survival outcomes. Hence, any recommendations for routine surveillance beyond expectant followup are difficult to justify for patients with noncolorectal cancers.

For CRC, however, the data for followup are more compelling. Patients with resected Stage II and III colon cancer will account for at least 60% of the estimated 22,500 new cases in Canada diagnosed in 2010. Despite advances in surgery and adjuvant therapy, the overall risk of recurrence is still estimated to approach 30% within 5 years. While individual studies have been inconclusive, recent meta-analyses do support a survival benefit for intensive followup. In patients who relapse with either localized/anastomotic recurrence or isolated liver and/or lung metastases which are amenable to resection, a favourable long-term outcome as measured by 5-year survival can be achieved in up to 50% of patients. It follows that intensive surveillance is likely to be most effective if offered to those patients who are candidates for salvage surgery.

Unanswered questions remain, including the utility of followup in patients with Stage I disease. These patients are typically not offered surveillance beyond interval colonoscopy, however recent evidence from a secondary analysis of the COST study suggests the proportional benefit from surveillance in terms of salvage following relapse is similar in Stage I when compared to higher-stage disease. However, given that the risk of recurrence is less than 10%, the absolute benefit of surveillance in Stage I is exceedingly small. At the other extreme, we have not yet defined the optimal followup strategy for patients following curative-intent resection of Stage IV CRC and existing practices remain highly variable.

Using the best available evidence, the recommendations provided in this article for CRC followup by clinical evaluation, CEA testing and imaging are appropriate and consistent with those offered by existing guidelines. The recommendation for colonoscopy at 3–5 year intervals is also reasonable in the non-polyposis population. Whether a 1-year colonoscopy is also required, if a complete colonoscopy was performed prior to resection is somewhat less certain — although not recommended in the 2005 ASCO guidelines, it is endorsed in the 2006 American Gastroenterological Association (AGA) guidelines.

Another ongoing area of uncertainty is whether responsibility for followup care can be delegated from the cancer clinic setting to primary care providers. In a Canadian study from the Cross Cancer Institute, compliance with CEA surveillance monitoring in the community was less than 10%. While the reasons for these disconcerting findings are not entirely known, it highlights the imperative of clear and direct communication of CRC surveillance recommendations to both the primary care physician and patient, when patients with Stage II and III CRC are discharged to the community following adjuvant therapy.
Disclosure

The authors and commentators report no conflicts of interest pertaining to this article.

Literature-based followup recommendations

PART 1: Breast, prostate, thoracic and GI malignancies

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