TITLE: Screening for Recurrent Cancer: Clinical Effectiveness and Guidelines

DATE: 30 March 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of screening patients with previous cancer for cancer recurrence?

2. What are the evidence-based guidelines for screening patients with previous cancer for cancer recurrence?

KEY FINDINGS

Three systematic reviews and 11 evidence-based guidelines were identified regarding the screening for cancer recurrence in patients with previous cancers.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2015, Issue 3), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and March 10, 2015. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1: Selection Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
</tr>
<tr>
<td>Intervention</td>
</tr>
<tr>
<td>Comparator</td>
</tr>
<tr>
<td>Outcomes</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Study Designs</td>
</tr>
</tbody>
</table>

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by and evidence-based guidelines.

Three systematic reviews and 11 evidence-based guidelines were identified regarding the screening for cancer recurrence in patients with previous cancers. No relevant health technology assessments were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Three systematic reviews1-3 and 11 evidence-based guidelines4-14 were identified regarding the screening for cancer recurrence in patients with previous cancers.

One systematic review,1 that examined the impact of routine follow-up in ovarian cancer following primary treatment, reported only one randomized controlled trial of 529 women that compared treatment following a rise in CA125 levels versus waiting for symptom development. No differences in overall survival were observed.1

A different systematic review2 focused on the use of positron emission tomography (PET) and PET with computed tomography for the surveillance of patients after treatment for lymphoma, colorectal cancer, or cancers of the head and neck. The authors concluded that there was insufficient evidence for surveillance with these technologies because of factors such as poor study quality, lack of standard definitions for surveillance, scanning protocol differences, and inconsistent test accuracy reporting.2

The final identified systematic review3 focused on outcomes achieved with surveillance programs after colorectal cancer resection and reported the literature to be inconclusive due to small study sample size and heterogeneity across surveillance programs.

Eleven evidence-based guidelines4-11 were identified regarding screening for cancer recurrence in patients with previous cancer. Detailed recommendations are provided in Table 2.
Table 2: Summary of Guidelines and Recommendations*

<table>
<thead>
<tr>
<th>Group/Author (Year)</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| AHS (2014) | 1. For low risk, low grade sarcomas, clinical examination and chest X-ray should be conducted every 6 months for the first 2 years then annually for 5 years after surgical resection. Annual surveillance for up to 10 years can be considered but will be left to the discretion of the responsible physician. Local imaging may be appropriate if physical examination is deemed unreliable.  
2. For high risk, moderate or high grade sarcomas, clinical examination and chest X-ray should be conducted every 4 months for the first 2 years following surgical resection, then every 6 months for the third year, and q 6 to 12 months for years 4 & 5 after surgical resection. Annual surveillance for up to 10 years should be considered but remains at the discretion of the physician.  
3. Baseline post resection imaging obtained no earlier than 3 months after surgery should be considered for all patients particularly those felt to be at higher risk of recurrence or where physical examination of the local tissue is felt to be unreliable. For superficial tumours subsequent clinical examination will suffice. For those cases where local imaging is deemed necessary for accurate surveillance, the imaging schedule should coincide with the regular follow-up visit whenever possible.  
4. Local imaging modality may include Ultrasound, CT or MRI depending on resource availability, reliability and tumour location. Unless otherwise indicated a similar modality for subsequent surveillance should be used where possible in order to improve serial interpretation. Cross sectional imaging should be performed in all cases when local recurrence is suspected. Routine use of CT for pulmonary imaging is not recommended but should be considered when improved imaging sensitivity is required.” |
<p>| ACR (2014) | “Patients with prior breast conserving therapy may be returned to routine screening at some point, dependent upon institutional protocol.” Variant 3: Surveillance, Rule out local recurrence, Mammography Screening |
| NICE (2014) | “Strategies to integrate oncological surveillance with optimising quality of life, reducing late effects, and detecting second cancers in survivors of colorectal cancer should be developed and explored.” |
| ELS (2014) | “The risk of developing an SPT and its early detection should be part of the follow-up of patients treated with LC and, therefore, appropriate and adequate screening strategies should be employed routinely— Grade B.” Statement 9 |
| ACS (2014) | “It is recommended that prostate cancer survivors presenting with hematuria should undergo a thorough evaluation to rule out bladder cancer; however, screening asymptomatic prostate cancer survivors with urinalysis is not recommended. For patients with rectal cancer, keeping up-to-date with colorectal cancer screening for all age-appropriate/risk-appropriate men and a thorough evaluation of new rectal bleeding (even if colorectal cancer screening is current) is recommended. Persistent bleeding, pain, or other symptoms of undetermined origin may require multidisciplinary management including evaluation by an appropriate specialist for diagnostic evaluation as well as the treating radiation oncologist.” |
| CCO (2014) | “RECOMMENDATION 1: Following curative-intent treatment for NSCLC, survivors should receive scheduled follow-up visits that include a medical history, physical examination and chest imaging. Clinical evaluations should be conducted every three months in years 1 and 2, every six months in year 3 and annually thereafter.” |</p>
<table>
<thead>
<tr>
<th>Group/Author (Year)</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RECOMMENDATION 2:</strong> Following curative-intent treatment for SCLC, survivors should receive scheduled follow-up visits that include a medical history, physical examination and chest imaging. Clinical evaluations should be conducted every three months in years 1 and 2, every six months in year 3 and annually thereafter.”</td>
<td>AHS (2013)</td>
</tr>
</tbody>
</table>

“Follow-up and Surveillance
- All patients are to be informed of signs of locoregional recurrence.
- Physicians who wish to be involved in the long-term follow-up of their patients may do so.
- Manual skin examination to be conducted by dermatologist.

Stage-specific recommendations follow:
In situ malignant melanoma
- At least annual skin exam for life
- Educate patient on monthly skin self exam
- The patient may be seen in the cancer clinic then discharged to the referring physician.
  - History and physical exam (with emphasis on nodes and skin)
  - Exam should ensure adequate excision of the original lesion and include a review of skin self examination.
  - No routine investigation is indicated; radiologic imaging may be used to investigate specific signs or symptoms.

Lesions less than 1 mm
- At least annual skin exam for life
- H & P (with emphasis on nodes and skin) every 6-12 months in the first year, with subsequent full skin exams annually for life.
- Educate patient in monthly self skin and lymph node exam
- The patient may be seen in the cancer clinic then discharged to the referring physician.
  - The patient should have a history and physical examination with full skin review carried out every six months for the first year and then annually.
  - No routine investigation is indicated; radiologic imaging may be used to investigate specific signs or symptoms; an initial chest x-ray for documentation and future comparison is optional.

Intermediate and thick lesions (lesions <1.0 mm with ulceration or lesions 1.0-4.0 mm and >4 mm)
- At least annual skin exam for life
- Educate patient in monthly self skin and lymph node exam
- The patient may be seen in the cancer clinic then discharged to the referring physician.
  - History and physical examination (with emphasis on nodes and skin) at least every six months for the first three years, annually for the next two years, and then annually as clinically indicated
  - CT scan to follow-up for specific signs and symptoms” | AHS (2013) |

“Active surveillance: This is an option in a select group of low risk patients with the understanding that curative treatment will be offered if follow-up demonstrates either worrisome PSA elevation or worsening biopsy characteristics (e.g. Gleason grade and/or volume) or if the patient chooses.”
## Table 2: Summary of Guidelines and Recommendations

<table>
<thead>
<tr>
<th>Group/Author (Year)</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| Atkin et al. (2012) | “There are two reasons for performing colonoscopic surveillance after local removal of a low risk pT1 cancer. One is to examine the remaining colon and rectum to detect intraluminal recurrence; the other is to detect metachronous cancer or adenomas. By their nature polyp cancers are high risk lesions. They therefore should undergo a surveillance strategy similar to the high risk adenoma group (III–B).

It is assumed that there has been a high quality baseline clearing examination to detect and remove all synchronous lesions. It is also assumed that the cancer has been completely removed and the site re-examined as described in Chapter 8 Section 8.4. This policy should also apply to locally-removed pT1 cancers detected during surveillance exams in any risk group.” 9.5.1 Locally removed pT1 cancers. |
| CCO (2012) | “A medical history and physical examination along with the CEA laboratory test should be performed every six months for five years.” page 3

“Abdominal and chest CT scans are recommended annually for three years. A pelvic CT scan is also recommended on the same schedule if the primary tumour was located in the rectum.” page 4

“A surveillance colonoscopy should be performed approximately one year after the initial surgery. The frequency of subsequent surveillance colonoscopies should be dictated by the findings of the previous one, but they generally should be performed every five years if the findings of the previous one are normal.” page 4 |
| SIGN (2011) | “Patients who have undergone curative resection for colorectal cancer should undergo formal follow up in order to facilitate the early detection of metastatic disease.

Interval CT scanning and CEA estimation may be of value in the follow up of patients who have undergone curative resection for colorectal cancer but further studies are required to define an optimum approach.

Colonoscopic follow up is advised five-yearly after curative resection for colorectal cancer.” page 30 |

ACR = American College of Radiology; ACS = American Cancer Society; AHS = Alberta Health Services; CCO = Cancer Care Ontario; CEA = carcinoembryonic antigen; CT = computed tomography; ELS = European Laryngological Society; LC = laryngeal cancer; MRI = magnetic resonance imaging; NICE = National Institute for Health and Clinical Excellence; NSCLC = non-small cell lung cancer; PSA = prostate specific antigen; SCLC = small cell lung cancer; SIGN = Scottish Intercollegiate Guidelines Network; SPT = second primary tumor.

* Verbatim recommendations.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Guidelines and Recommendations


APPENDIX – FURTHER INFORMATION:

Guidelines and Recommendations – Unclear Methodology

See: Screening, page 2

See: Key Recommendations, page 1
Follow-Up Care, page 2

See: 10) Follow Up and Surveillance, page 6

See: 3.6 Follow-Up

Review Articles

PubMed: PM23459409

PubMed: PM23867593

PubMed: PM22859511