Malnutrition screening programs in adult cancer patients: clinical practice is hungry for evidence

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Most oncology dietitians in Canada agree that screening cancer patients for malnutrition is an important area for research, guideline development, and clinical practice. Many view screening as a critical component of clinical practice and as a means of identifying the patients in greatest need for nutrition intervention. However, across Canadian cancer facilities, there is wide variability in nutrition screening tools and use. For those reasons, the Canadian Oncology Nutrition Clinical Practice Guideline (CON-CPG) Initiative set out to summarize the existing evidence and to develop recommendations for clinical practice.

The Initiative’s systematic review of the evidence addressed three main questions:

- Does screening for the early detection and treatment of malnutrition among patients with cancer lead to improved outcomes in screened compared with unscreened patients?
- Do existing nutrition assessment and screening tools detect malnutrition in patients with cancer?
- Which nutrition screening tool is most appropriate for use in the oncology population?

Unfortunately, no studies have addressed the first and perhaps most important question. Some evidence is available to address the other two questions, but studies to date lack methodologic rigour. A fair body of evidence supports the value of the Patient-Generated Subjective Global Assessment (PG-SGA) as a valid, reliable, and responsive instrument for assessing nutrition status in adults with cancer once they have been referred to a clinical dietitian. Three studies provide data on the sensitivity and specificity of the PG-SGA as a screening tool—that is, how well it can determine which patients are truly malnourished and require referral for nutrition assessment2–4. However, to determine those parameters, the PG-SGA was compared with the Subjective Global Assessment, from which the PG-SGA was developed—a methodology that is not ideal. Some Canadian dietitians use the first four items of the PG-SGA (the patient-generated component) as a screening tool, but no published data on the sensitivity and specificity of that approach are available. There is some evidence that the Malnutrition Screening Tool (MST) and the Mini-Nutritional Assessment have reasonable sensitivity and specificity for nutrition screening in outpatients with cancer5–7.

The CON-CPG multidisciplinary panel addressed the question “Is nutrition screening recommended for routine use in patients with cancer” with a view to providing guidance about timing and methods for nutrition screening. Only a slim evidence base was available as a foundation for their work. In addition to the systematic review, the expert panel relied on their clinical expertise and understanding of best clinical practice to reach consensus on a set of recommendations for clinical practice. They concluded that, despite the lack of empirical evidence, there are strong arguments in favour of screening cancer patients for malnutrition:

- Approximately 50% of cancer patients are at risk of malnutrition.
- Effective interventions for malnutrition are available.
- The available interventions become less effective when delayed until malnutrition is severe.
- The act of nutrition screening and the subsequent assessments and interventions arising from a positive screen are not associated with significant harm to the patient.

The expert panel therefore recommended that malnutrition screening programs be put in place at all Canadian health care facilities that deliver cancer care.

In interpreting the evidence from research on the tools available for nutrition screening, the expert panel reasoned that an ideal screening instrument should be brief and feasible for routine use, be evaluated in an oncology setting, have content and criterion validity, have adequate sensitivity and specificity for
the target patient population, and have empirically justified cut-offs to guide clinical decision-making and identification of the level of risk for malnutrition. The panel was clear on the distinction between nutrition screening and nutrition assessment. Although the two processes are related, there are important differences between them.

Nutrition screening is the process of identifying specific patients from the broader cancer population who require nutrition assessment because they may be at risk for malnutrition. Nutrition assessment refers to a comprehensive assessment that uses medical and diet history, anthropometric measurements, physical examination, and laboratory measures to determine nutrition status. In this context, screening is used to systematically identify patients who require assessment and, if warranted by the results of the assessment, intervention for malnutrition. Until further evidence becomes available, the panel recommended the MST as a short, easily administered screening tool with known sensitivity and specificity.

The full set of recommendations can be found in the guideline report available on the CON-CPG Web site (http://e.b5z.net/i/u/10020330/f/Screening_Guideline-11032010.pdf).

Two key issues arose during guideline development, mainly during the course of external review of the draft recommendations by practitioners from across Canada. A range of opinion about the target population for screening programs and the choice of screening instrument was expressed.

The original remit for the expert panel was to develop recommendations for screening in adults with cancer. Patients could be newly referred for cancer care or be receiving radiotherapy or chemotherapy (for curative or palliative intent). The target population included outpatients and inpatients, but excluded patients undergoing surgery. A small proportion of the external reviewers wanted to extend the scope of the guideline to cover all patients with advanced or metastatic cancer, including those with cachexia. The panel was of the opinion that those patients would have very different needs for nutrition screening, assessment, and treatment and that they did not fit into the scope of this particular guideline. Also, in response to recommendations from the external reviewers, the expert panel simplified the target population to include only adults with cancer who were receiving or about to receive radiotherapy or chemotherapy (or both) for curative intent. The purpose of this narrowing of the target population was to encourage centres to develop a screening program for at-risk patients most likely to benefit from early proactive intervention for malnutrition. Centres could then expand their screening program as experience and resources allowed. A widespread concern of the external reviewers was that a screening program such as described in the original draft recommendations would overwhelm already stretched resources.

In their feedback to the guideline developers, practitioners from several centres expressed reluctance to abandon their current practice of using a modified version of the PG-SGA as a screening tool. The expert panel was unable to endorse that approach for several reasons. No data on the modified versions of the PG-SGA in use at Canadian centres, either as an assessment tool or a screening tool, have been published. Practitioners suggested that it is appropriate to generalize from the complete PG-SGA to the patient-generated component, but the expert panel could not agree with that approach; the panel would prefer to see empirical evidence.

The unwillingness of practitioners to accept the MST for screening arises in part from the fact that a high proportion of patients in the target population could have scores of 2 or greater at screening, with the result that referral of those patients for nutrition assessment could overwhelm the already limited oncology nutrition services that currently exist in Canada. Similar problems can arise with the PG-SGA, which has led some centres to adopt higher cut-off scores than are recommended by the developers of the PG-SGA. Much of this uncertainty about the tool best fit to the purpose arises from the paucity of good data comparing screening tools and assessing various threshold scores for referring patients for a full nutrition assessment. More high-quality research is needed to establish the best screening tool. Such studies will need to include a cohort of consecutive patients who all receive independent administration of both the screening instrument and nutritional assessment to establish measures of sensitivity, specificity, positive predictive value, and negative predictive value. An ideal screening tool is one that can be administered quickly, can be interpreted by a variety of health care providers, and is useful across a range of cancer diagnoses. Ultimately, screening would aim to reliably identify patients who need nutrition assessment by a dietician and to minimize the number of referred patients who turn out not to need nutrition intervention.

We clearly need to know more about how and when to conduct screening, but the overarching gap in knowledge arises from the fact that no studies have investigated whether nutrition screening leads to better patient outcomes. Well-conducted randomized trials could contribute greatly in closing that gap. When quality evidence of this kind becomes available and it supports the use of nutrition screening to improve the outcomes of patients, then the necessary resources must be secured to ensure screening is performed.

CONFLICT OF INTEREST DISCLOSURES

Members of the expert panel were polled for potential conflicts of interest, using a structured questionnaire. No conflicts were declared.
REFERENCES


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