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Guidelines

Optimisation of Preoperative Assessment in Patients Diagnosed with Rectal Cancer

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Abstract

Aims: Treatment decision making for patients with rectal cancer is complex and optimal preoperative assessment is important to ensure patients receive appropriate and high-quality care. Therefore, our objective was to develop an evidence-based, multidisciplinary guideline to assist physicians treating rectal cancer to ensure that preoperative assessment is optimal.

Materials and methods: A multidisciplinary expert panel of physicians who treat rectal cancer was selected as members of the Cancer Care Ontario Preoperative Assessment for Rectal Cancer Guideline Development Group (GDG). This group initially met to identify important clinical questions with respect to optimisation of preoperative assessment in patients diagnosed with rectal cancer. A systematic review, specific to each of these clinical questions, was then conducted using MEDLINE, EMBASE and the Cochrane Library databases. The GDG met at regular intervals to review the evidence and to develop guidelines to address each of the clinical questions.

Results: The GDG identified seven important clinical questions with respect to the optimisation of preoperative assessment in patients diagnosed with rectal cancer. The clinical questions pertained to: (i) investigations required to assess distant metastasis (one question); (ii) imaging for local staging of rectal cancer (five questions); (iii) multidisciplinary cancer conference (MCC) (one question); (iv) restaging-magnetic resonance imaging (one question). The systematic reviews related to these clinical questions yielded 31 articles that were abstracted and reviewed by the GDG. Based on the systematic reviews, a guideline was developed containing seven recommendations that were either adapted from existing guidelines, based on review of the evidence or by consensus when evidence was limited.

Conclusions: A set of seven recommendations have been developed in order to optimise pretreatment assessment in patients with rectal cancer by promoting evidence-based practice. These guidelines are based on the best available evidence and have been peer reviewed by two independent multidisciplinary expert panels for relevance and validity.

Key words: Computed tomography scan; magnetic resonance imaging; rectal cancer; staging; ultrasound; X-ray

Introduction

Although preoperative radiotherapy and chemoradiotherapy have been shown to decrease the risk of local recurrence after surgery for rectal cancer, these treatments do not affect survival and lead to poorer functional outcomes (i.e. bowel and sexual function) compared with surgery alone [1–5]. Therefore, treatment decision making for rectal cancer is challenging and depends on accurate preoperative staging. Understaging of rectal cancer preoperatively may lead to the omission of radiotherapy or chemoradiotherapy and lead to an increased risk in local recurrence, whereas overstaging may lead to unnecessary treatment with preoperative radiotherapy or chemoradiotherapy with important effects on bowel and sexual function.

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Therefore, Cancer Care Ontario's (CCO's) Surgical Oncology Program has collaborated with the Program in Evidence-Based Care (PEBC) to develop multidisciplinary, evidence-based guidelines to assist physicians treating rectal cancer to provide preoperative assessment that is both comprehensive and accurate in order to ensure patients receive high-quality care.

Materials and Methods

The evidence-based guidelines developed by the CCO's PEBC use the methods of the Practice Guidelines Development Cycle [6]. The CCO's PEBC is supported by, but editorially independent of, the Ontario Ministry of Health and Long-Term Care. The core activity of the programme is the development of practice guidelines through systematic review, evidence synthesis and input from practitioners. Evidence was selected and reviewed by the members of the Preoperative Assessment for Rectal Cancer Guideline Development Group (GDG) ($n = 24$), which comprises radiologists, surgeons, radiation oncologists, medical oncologists and pathologists.

Target Population and Research Questions

The target population for this guideline is comprised of newly diagnosed patients with rectal cancer undergoing elective treatment. The research questions that guided the systematic review that forms the evidence base for this guideline are:

(1) What investigations [chest X-ray or computed tomography thorax/abdomen/pelvis, colonoscopy, serum carcinoembryonic antigen (CEA)] should be carried out to assess for distant metastases and synchronous lesions in patients with rectal cancer?
(2) What imaging [magnetic resonance imaging (MRI) of the pelvis, endorectal ultrasound, transrectal ultrasound, computed tomography of the pelvis] should be carried out for local staging of rectal cancer?
(3) What MRI protocol has been shown to have the best accuracy to locally stage rectal cancer?
(4) What MRI criteria are necessary to locally stage rectal cancer preoperatively?
(5) Which MRI criteria should be used to select patients for neoadjuvant therapy?
(6) Does a pretreatment discussion at a multidisciplinary cancer conference (MCC) improve patient outcome for patients with rectal cancer?
(7) Does a restaging MRI after neoadjuvant therapy improve patient outcomes for patients with rectal cancer?

Literature Search Strategy

Following a targeted search of international guideline developers, the evidence summaries from National Institute for Health and Clinical Excellence (NICE) 2011, New Zealand Guidelines Group (NZGG) 2011, Scottish Intercollegiate Guidelines Network (SIGN) 2011 and the PEBC 2006 guidelines were considered of high enough quality to adapt their recommendations for questions 1 and 2 and no further literature searches were conducted [7–10]. For question 4, the MRI criteria developed by CCO's Surgical Oncology Program was endorsed and no further literature searches were carried out [11].

For questions 3, 5–7, MEDLINE (1946 to 25 April 2013), EMBASE (1996 to 25 April 2013) and the Cochrane Database of Systematic Reviews (2005 to 25 April 2013) were searched using disease-specific terms and terms specific for each question. The MEDLINE search strategy is reported in Appendix 1. Searches in other databases were similar.

Selection Criteria

For questions 3, 5, 7, all studies had to analyse quantitative data for at least 30 patients with rectal cancer and had to use histopathology as the reference standard. Also, studies that included phased-array body coil and at least 1.0 Tesla MRI were included. Studies that included only patients with rectosigmoid cancers were also excluded. Publications in a language other than English were not eligible because of a lack of funding for translation. Non-systematic reviews, abstracts, case studies, letters, editorials and commentaries were excluded. Details regarding further selection criteria can be found in the full guideline report on the CCO website (https://www.cancercare.on.ca/toolbox/qualityguidelines/clin-program/surgery-ebs/).

Guideline Selection for Adaptation

The GDG included guidelines that met a minimum criteria of 50% on the rigour of development scale of the AGREE II tool and were not more than 3 years old (2009) [12,13]. The AGREE II tool assesses the quality of guidelines [12,13]. The rigour of development scale assesses the methodologically quality of the guideline and, from a methodological perspective, is considered one of the more important domains. However, for research questions where no guidelines were found that met these minimum criteria, the GDG included recommendations from Canadian guidelines, as their recommendations would be more relevant.

Development of Recommendations

The authors defined the research questions to guide the data abstraction and interpretation and held a teleconference to develop the recommendations through informal consensus. The recommendations were written and approved by all authors during the meeting. A draft guideline was then circulated among GDG members and revised in an iterative process. The draft guideline was reviewed by the PEBC Report Approval Panel, a group of three oncologists with clinical and methodological expertise. After approval, the draft was sent to Ontario practitioners with a structured questionnaire for a formal survey.

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