Survival and symptomatic benefit from palliative primary tumor resection in patients with metastatic colorectal cancer: a review

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CRD summary
This review evaluated survival gain or symptom prevention from non-curative primary tumour resection in patients with metastatic colorectal cancer. The authors concluded that this procedure can prolong survival, but did not reduce life-threatening tumour-related complications. Potential for errors and bias in the review process and reliance on limited retrospective data means that this conclusion is likely to be unreliable.

Authors' objectives
To evaluate the survival gain or symptom prevention from non-curative primary tumour resection in patients with metastatic colorectal cancer. The review also addressed the influence of patient and tumour characteristics on surgery outcomes.

Searching
MEDLINE was searched from 1996 to 2006. Search terms were reported. Bibliographies of included papers were searched. It appeared that SEER was consulted.

Study selection
Multicentre randomised controlled trials (RCTs) focused on the resection of asymptomatic primary tumours in patients with incurable metastatic colorectal cancer that measured symptom development and survival were sought for inclusion in the review. In the absence of RCTs, all study designs were included. The authors stated that there was some overlap of patient populations in the cancer registry analyses. Half of the studies were conducted in USA; the rest were in Europe and Asia. The mean or median age of patients was between 60 and 65 years. Most studies contained more men than women. However, many studies did not provide baseline patient characteristics or information on the comparability of study groups. Most tumours were located proximal to the rectum. Study outcomes varied; less than half measured the primary outcomes of interest and only two studies provided a direct comparison between surgery and no surgery.

The authors did not state how many reviewers carried out study selection.

Assessment of study quality
The authors stated that studies were assessed for methodological quality. No further details or results were presented, other than for follow-up.

The authors did not state that how many reviewers carried out the quality assessment.

Data extraction
Data were extracted on mortality rates (percentages) and details of complication rates. Hazard ratio (HR) and 95% confidence interval (CI) was reported in one study.

The authors did not state how many reviewers carried out data extraction.

Methods of synthesis
A narrative synthesis was presented. Study differences were highlighted in the tables and text.

Results of the review
Twelve studies were included in the review: 10 retrospective studies (n=1,302) and two population analyses from the
SEER database (n=35,765 assuming no overlap of patients). Median follow-up (where reported) ranged from 18 months until the patient's death.

Perioperative mortality rates in the retrospective studies ranged from 1.3% to 11.7% with a median rate of 4.6% (eight studies). The postoperative mortality rate was reported to range from 9.5% to 42.7% with a median rate of around 20% (number of studies unclear). There was limited evidence to suggest that operative mortality from the resection of tumours that became symptomatic was lower than that reported following emergent surgery (three studies). Median survival rates for the analyses that compared surgery to no surgery were 10.6 months to 16 months and two to 16.6 months.

Two comparative studies with results in favour of surgery showed a statistically significant survival benefit in asymptomatic patients (HR 0.50, 95% CI 0.27 to 0.90) reported in one of the studies, but the difference was no longer significant when perioperative mortality was taken into account. Survival in the other study was 16 months versus nine months (p<0.001).

One comparative study of symptom development between surgical and non-surgical patients found that there were no statistically significant differences between the groups in terms of newly incident obstruction, haemorrhage that required admission, peritonitis and fistulisation.

Details of the potential impact of various patient and tumour characteristics were reported in the paper.

Authors' conclusions
Retrospective data suggested that non-curative resection of asymptomatic colorectal primary tumours may prolong survival, but this finding may have been due to selection bias and other clinical factors. The procedure did not appear to reduce life-threatening tumour-related complications.

CRD commentary
The review question was clear and was supported by detailed inclusion criteria, although the included studies did not comply with the original criteria for study design. The search strategy appeared to be narrow in scope. No attempts to minimise publication and language biases were reported. Although the authors acknowledged some of the methodological difficulties, their conclusion was based on very limited data. Potential for errors and bias in the review process, reliance on retrospective data, and the absence of any details about quality assessment all represent substantial threats to the reliability of the author's conclusions.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that prospective RCTs were needed to determine the survival benefits of resection of asymptomatic primary lesions in metastatic colorectal cancer.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.