Medical audit

Referral guidelines for colorectal cancer – do they work?

A James Eccersley¹, Elena M Wilson², Andreas Makris^{1,2}, J Richard Novell¹

¹Luton & Dunstable Hospital, Bedfordshire, UK

²Mount Vernon Centre for Cancer Treatment, Rickmansworth, Hertfordshire, UK

Aims and Methods: Urgent referral guidelines for patients with suspected colorectal cancer were introduced in 2000. In a district general hospital, we prospectively assessed the effect of these guidelines on the number of urgent referrals received and the number found to have cancer.

Results: Over the first year, 180 urgent referrals were received of whom 95 (55%) fitted the guidelines. Of these 95 patients, 24 (25%) had colorectal cancer. Conversely, only 2 of the 85 patients (2%) who did not fit the guidelines had colorectal cancer. During the same time period, a total of 145 new cancers were identified within the district of which 119 (82%) were in patients who had not been urgently referred to out-patients as suspected colorectal cancer.

Discussion: The guidelines are effective in that patients who fit them have a significant chance of having colorectal cancer. However, the majority of cancers are identified outside the new system. Efforts to reduce delays in diagnosis need to recognise that many patients do not have features which fit published referral criteria. Improved support for general practitioners and better access to specialist services are required to reduce delays in diagnosis.

Key words: Colorectal carcinoma – Guidelines – Diagnosis – Symptoms

In response to concerns about delays in diagnosis of cancer, the UK Government published referral guidelines for patients with suspected malignancy.¹ These aimed to identify patients with new symptoms indicating a high probability of cancer who should be seen by a hospital specialist within 2 weeks of referral by their general practitioner.² This paper reports the effect of the 'two-week guidelines' on the presentation of colorectal cancer during the first year of their implementation. The guidelines for urgent referral in suspected colorectal cancer are summarised in Table 1.

We aimed to assess prospectively urgent referrals received under the 'two-week rule' and determine the proportion of patients meeting the new guidelines whose

Table 1 Guidelines for urgent referral in suspected colorectal cancer cases

In patients of any age

Rectal bleeding with a change in bowel habit to looser stools persistent for 6 weeks

A palpable right-sided abdominal mass

A palpable rectal (not pelvic) mass

Iron-deficient anaemia (haemoglobin < 11 g/dl in men, haemoglobin < 10 g/dl in women) without obvious cause

In patients aged 60 years or over

Rectal bleeding without anal symptoms

A change in bowel habit to looser stools or increased frequency of defecation without bleeding, persistent for 6 weeks

Correspondence to: Mr JR Novell, Consultant Surgeon, Luton & Dunstable Hospital NHS Trust, Lewsey Road, Luton, Bedfordshire LU4 0DZ, UK. Tell/Fax: +44 1582 497234

Table 2 Diagnosis in urgent referrals with suspected colorectal cancer

Diagnosis	Urgent referrals received and offered appointments (<i>n</i> = 180)	
	Fitted guidelines (<i>n</i> = 95 [55%])	Did not fit guidelines (<i>n</i> = 85 [45%])
Colorectal cancer	24 (25%)	2 (2%)
Other malignancy	9 (9%)	2 (2%)
Other benign disease	41 (43%)	51 (60%)
No physical cause identified/DNA	21 (22%)	30 (35%)

symptoms were due to a malignancy. In addition, we aimed to detect changes in uptake of the guidelines during the first year of their use.

Patients and Methods

Prior to the introduction of the 'two-week guidelines', general practitioners (GPs) were encouraged to fax an urgent referral letter for all suspected cancers to a dedicated cancer bureau. All referrals received were assigned an urgent appointment in existing clinics whether or not the letter appeared to fit the published guidelines.

After appointments were assigned but prior to clinical assessment, all referral letters were reviewed by one author (JRN) to determine whether they fitted the published referral guidelines. Urgent referrals were divided into two groups: (i) those which met one or more of the published guidelines; and (ii) those who did not appear to satisfy any of the criteria. Data on delays and ultimate diagnosis in these urgent referrals were collected prospectively.

After specialist consultation and rigid sigmoidoscopy, patients were offered colonic imaging with colonoscopy or barium enema according to established protocols. Contrast-enhanced computerised tomography was used as the initial investigation in the frail elderly and those presenting with abdominal masses.

In addition, data on all new cases of colorectal cancer within the district, including emergencies, private patients and those treated non-surgically, were collected as part of the on-going Mount Vernon Cancer Audit. The stage of disease and delays in diagnosis in these patients were compared with those presenting via the urgent cancer referral system. The referral letters of these patients were analyzed to determine if they would have met the previously described urgent referral guidelines.

Results

A total of 180 urgent referrals with suspected bowel cancer were received and offered appointments in the next available colorectal (80%), general surgical (15%), or gastroenterology (5%) clinic. Of these, 173 patients attended of whom 151 (87%) were seen within 14 days of referral (median wait, 10 days; range, 1–47 days). The percentage seen within 2 weeks rose to over 93% during the second half of the year.

Of the 180 urgent referrals, 95 (55%) fitted one or more of the urgent referral guidelines, whilst 85 (45%) did not. Table 2 shows the diagnosis in these referrals. A colorectal carcinoma was identified in 24 (25%) of the 95 urgent referrals which fitted the guidelines. In addition, 9 (9%) had another abdominal malignancy including lymphoma, sarcoma, ovarian and renal carcinoma. Conversely, only 2 (2%) of 85 urgent referrals which did not fit the guidelines had colorectal cancer (a rectal cancer in a 34-year-old and a

Figure 1 Stage of tumours presenting as emergencies, urgent referrals, and through other clinics.

Table 3 Urgent referrals by quarter, showing number fitting guidelines and number with colorectal carcinoma

Quarter of referral	No. of cases assessed	No (%) fitting criteria	No (%) with colorectal cancer
June 2000	39	16 (40%)	7 (17%)
Sept 2000	58	27 (46%)	4 (7%)
Dec 2000	41	28 (69%)	9 (21%)
Mar 2001	35	21 (60%)	6 (18%)
Full year	173*	92 (53%)	26 (15%)

*180 cases were referred, but 7 did not attend.

female referred with a haemoglobin of 10.8 g/dl). Two other patients in this group had bronchial carcinoma.

During the year, a total of 145 new cases of colorectal cancer were identified in our district. Only 26 (18%) of these, detailed above, were identified in patients referred urgently: 24 (17%) patients presented as emergencies with obstruction, perforation or major haemorrhage. The remaining 95 (66%) cases of colorectal cancer identified locally during the year had not been referred urgently as suspected cancers. In these patients, the median time from referral to first clinic appointment was 32 days (range, 2–107 days).

The stage of tumours did not appear to be affected by the different referral routes (Fig. 1). Retrospective analysis of the notes of the 95 cancers not referred urgently or as emergencies showed that only 50 (53%) would have definitely fitted the published guidelines for urgent referral.

During the year, the percentage of referrals which met one or more of the guidelines rose to above 50% in the last 6 months (Table 3). Despite this, the proportion of urgent referrals found to have colorectal cancer did not increase above 21% in any quarter.

Discussion

The prospective observational design of this study may lead to some methodological criticisms. All patients with colorectal cancer in our district during the 12 months were included in the analysis. Prospective classification of urgent referrals according to whether they met the guidelines or not occurred prior to the clinical assessment of the patient. Inevitably, the retrospective assessment of the symptoms of patients with cancer who had not presented in urgent clinics was unblinded. We sought to avoid over-emphasis on these patients, but some data on the cancers that were not referred urgently were felt necessary to validate the new system. Inevitably, referral letters are only a brief summary of a patient's presenting symptoms, but they are crucial to arranging a specialist consultation of appropriate urgency.

The guidelines appear to be effective at identifying patients with malignancy since one-quarter of urgent referrals who fitted the guidelines had colorectal cancer and one-third had some type of abdominal malignancy. However, 45% of all urgent referrals received did not fit published guidelines, and only 2% of these had colorectal cancer.

Symptoms and physical signs alone have previously been reported as unreliable indicators of bowel cancer.^{2,3} However, 60% of colorectal cancers identified during the year had clinical features which fitted the guidelines, but fewer than one-quarter were referred urgently with reference to the guidelines.

On-going patient education and better support of primary care services are likely to be required to increase appropriate usage of the urgent referral system. We appreciate that many GPs feel overwhelmed with guidelines and proformas so we have avoided the use of specific referral proformas. To simplify GP access, the cancer bureau co-ordinates referrals for suspected cancers of all sub-specialities via a single fax number.

The national implementation of referral guidelines might suggest that delays between primary and secondary care have an effect on disease outcome. There is some epidemiological evidence that differences in stage at diagnosis are related to availability of specialist diagnostic services including screening.³ However, the evidence that more rapid referral identifies earlier stage disease is unproven. In a series of tumours which were initially missed and finally identified after a median delay of 15 months more than half were still Dukes' stage A or B.⁴ In our own data, the Dukes' stage of tumours was similar whether the patients were seen urgently or routinely, suggesting that the urgency of referral does not definitely influence disease stage. In 1979 in Nottingham,⁵ the average delay from referral to out-patient appointment was 2 weeks, yet the average delay from symptom onset to diagnosis was over 30 weeks. The majority of this delay was due to patients ignoring the significance of their symptoms. A recent study of patients with symptomatic colorectal cancer demonstrated that the delay of patients in seeking medical advice was twice as long as the delay caused by waiting for specialist opinions and imaging.⁶

Conclusions

The introduction of referral guidelines benefited fewer than one in five of patients with colorectal cancer in our district. Many patients with colorectal cancer did not appear to fit the guidelines or were not referred urgently.

An important part of any strategy to achieve earlier diagnosis for colorectal cancer will involve properly

funded patient education programmes in conjunction with increased support for GPs. This may encourage the appropriate use of guidelines in the decision to seek an urgent referral. Such measures may be more likely to reduce colorectal cancer mortality than arbitrary targets for waiting times at the interface between primary and secondary care.

Acknowledgements

Preliminary data were previously presented to The Association of Coloproctology in June 2001 and published in abstract form in *Colorectal Disease* 2001; **3** (Suppl 1): 34.

References

1. Department of Health. *Referral Guidelines for Suspected Cancer*. London: Department of Health, 1999.
2. Jones R, Rubin G, Hungin P. Is the two week rule for cancer referrals working? *BMJ* 2001; **322**: 1555–6.
3. Monnet E, Faivre J, Raymond L, Garau I. Influence of stage at diagnosis on survival differences for rectal cancer in three European populations. *Br J Cancer* 1999; **81**: 463–8.
4. Harris GJC, Simson JNL. Causes of late diagnosis in cases of colorectal cancer seen in a district general hospital. *Ann R Coll Surg Engl* 1998; **80**: 246–8.
5. Holliday H, Hardcastle JD. Delay in diagnosis and treatment of symptomatic rectal cancer. *Lancet* 1979; **2**: 309–11.
6. Majambar SR, Fletcher RH, Evans AT. How does colorectal cancer present? Symptoms, duration and clues to location. *Am J Gastroenterol* 1999; **94**: 3039–45.