

A comparison of open access endoscopy and hospital-referred endoscopy in a district general hospital

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Accepted 12 October 1999

SUMMARY

Open access endoscopy (OAE) is widely used in many hospitals. The aim of this study was to compare the upper gastrointestinal endoscopies referred to as "OGDs" performed under the OAE service and those referred from hospital outpatient clinics (HR) during the initial year in which an OAE service was provided in a district general hospital.

A retrospective review of medical records from all patients undergoing OGD during the first year of OAE to identify the waiting time for OGD, the extent of pre-treatment at the time of OGD, the endoscopic findings and the number of endoscopies in which oesophageal or gastric neoplasia was detected. Follow-up endoscopies (n=41) were excluded.

Of 739 OGDs included, 384 (177 male; mean age 48.0 yrs.) were performed under the OAE service, 346 (149 male; mean age 50.7 yrs.) were referred from outpatient clinics and 9 could not be accurately classified. The waiting time was significantly lower in the OAE group compared to the HR group (24.5 v 29.8 days, $p < 0.001$). Pre-treatment at the time of OGD was significantly more frequent in the OAE group compared to the HR group (295 v 186, $p < 0.001$). Frequencies of the main endoscopic diagnoses did not differ significantly between the two groups.

The OAE service provided faster access to OGD than the HR group and the endoscopic findings were similar in the two groups.

INTRODUCTION

Since it is generally accepted that the clinical evaluation of dyspepsia will misclassify one-third of major pathological lesions, upper gastrointestinal endoscopy (OGD) is necessary to determine the specific aetiology and to identify the most appropriate therapy, at least in patients over 45 years old.¹ Open access endoscopy allows rapid access to outpatient OGD for patients in primary care. A recent British Society of Gastroenterology survey reported that 74% of members were offering this service.² It has been suggested that an open access service will provide a shorter waiting time for endoscopy in comparison to those who have an initial consultation at the outpatient clinic. As a result of the shorter waiting time, GPs could prescribe symptomatic treatment rather than acid suppression therapy, which may mask upper gastrointestinal pathology, giving a false negative endoscopy result. This may also reduce unnecessary prescriptions for acid suppression therapy with resulting economic benefits. In

addition, a rapid diagnosis may improve the prognosis, for example, in oesophageal carcinoma since earlier treatment can be instituted. Such an improvement in prognosis has not been observed for early gastric cancer.³

Since its introduction in the 1970s open access endoscopy has been surrounded by controversy over its benefits. The referral system is open to overuse by GPs and to counteract this some centres censor the referrals and are not strictly "open access".⁴ For example, a barium swallow

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examination may be more appropriate than endoscopy as an initial investigation for certain groups of patients with dysphagia.⁵ Criticisms of the open access service include the fact that patients may be more anxious about their procedure than patients screened at an outpatient clinic although one recent study has not confirmed this.⁶ In another study, 64% of patients preferred to be seen at the consultant clinic first.⁷ There is also a significant increase in workload for the endoscopy unit by providing such a service despite a relatively low diagnostic yield.⁸

In order to succeed, centres offering an open access service must be continually assessed and monitored to ensure that their aims are being achieved. We reviewed all OGDs performed in the first year in which an open access endoscopy service was offered to general practitioners Gps in the area surrounding Craigavon Area Hospital in order to compare OGDs performed under the open access service (OAE) and those referred within the hospital (HR) to detect if there are any differences in waiting time, previous treatment, symptomatology and endoscopic findings.

METHODS

All OGDs performed in Craigavon Area Hospital between 1st April 1995 and 30th March 1996 were identified from computerised records. This is a district general hospital serving a population of 200,000. A review of medical records was then carried out taking note of the demographic details, waiting time from referral to OGD, symptoms and smoking habits, therapy before OGD, previous investigations, endoscopic findings and, following the OGD, whether further investigations were requested or if specific therapy was suggested. A normal endoscopy was taken to be the absence of pathology and included hiatus hernia without oesophagitis. Where two or more diagnoses were evident, the principal diagnosis affecting treatment was used as the "endoscopic finding". The waiting time was taken to originate from the date on which the open access referral request form was sent by the GP for OAE, or the clinic date on which it was decided to proceed to OGD, in the HR group. A comparison was then made between open access endoscopies and those referred from hospital outpatient clinics to determine if there were differences in referral patterns, waiting times or the pathological lesions detected.

A standard OAE referral form with a list of ten symptoms and a space for the appropriate response was issued to GPs. Demographic details, alcohol and smoking habits were recorded. Guidelines were issued to GPs before commencement of the OAE service. These indicated that patients over 45 years old presenting with a new onset of dyspepsia and all patients with other sinister symptoms (anaemia, dysphagia, weight loss, family history of gastric neoplasia) should be referred to an outpatient clinic in the first instance. All follow-up OGDs performed for surveillance of benign or malignant lesions were excluded. A small number of emergency OGDs performed each year in the hospital theatres for overt upper gastrointestinal bleeding were not included. In addition, OGDs performed as part of a limited endoscopy service in a rural hospital in the same trust were also excluded.

STATISTICAL ANALYSIS

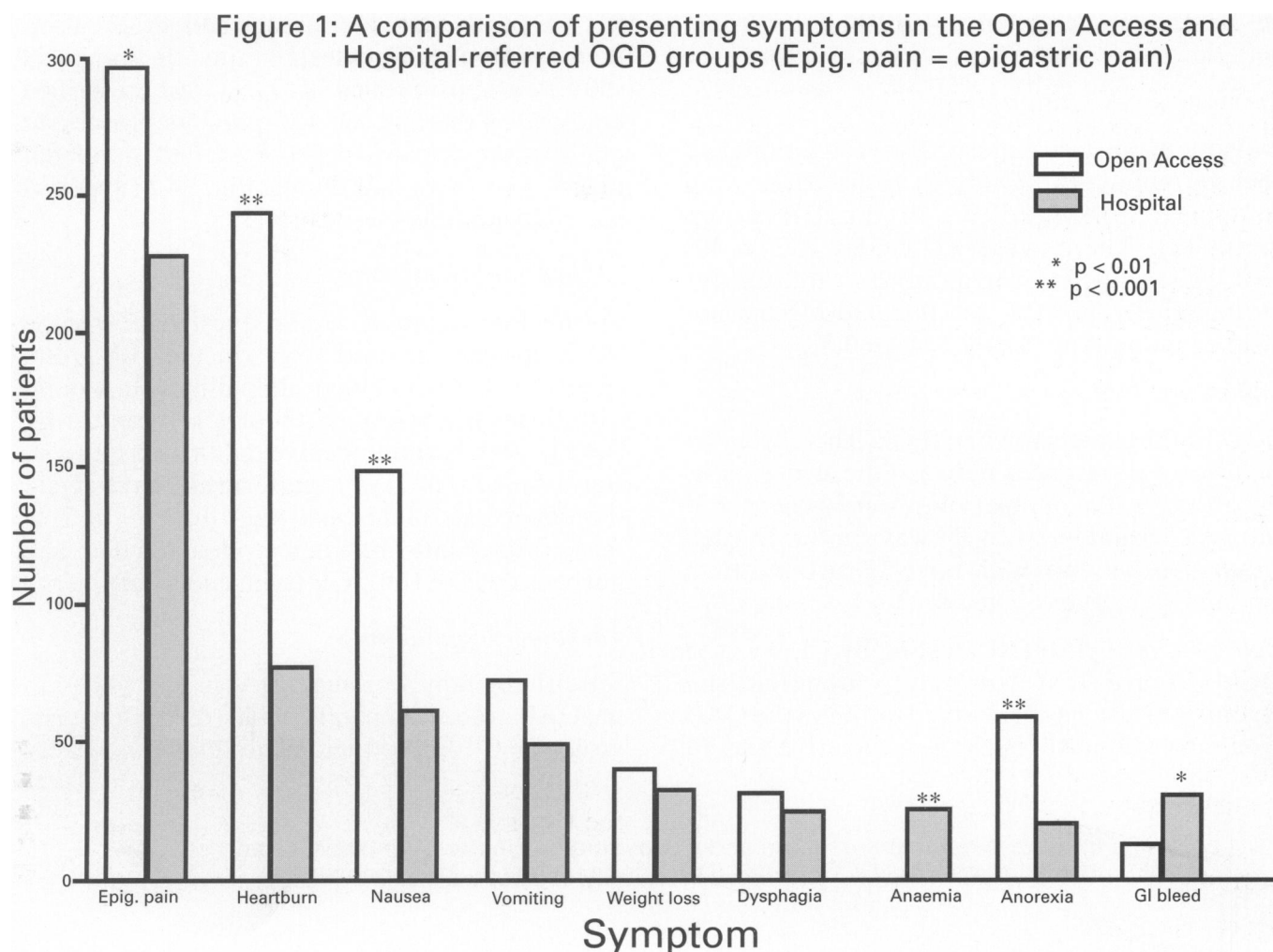
Statistics where appropriate are shown as mean values with standard deviation in parentheses. Group comparisons of variables were made using the Chi-square test. Continuous variables were compared using the Mann Whitney U-test. A value of $p < 0.05$ was considered significant.

RESULTS

Patients and waiting times

Seven hundred and ninety-two OGDs were performed during the study period. Forty-one were excluded since they were follow-up OGDs and 12 medical records could not be obtained leaving 739 in the group under consideration. Of these, 384 (177 male; mean age 48.0 yrs.) were performed under open access referrals, 346 (149 male; mean age 50.7 yrs.) were referred from hospital outpatient clinics and nine could not be accurately classified.

The number of patients referred to the open access system did not differ significantly between fundholders and non-fundholders (111 v 273; $p=0.32$). The mean waiting time in the OAE group was 24.5 days (standard deviation 16.0; range 1-119 days), compared to 29.8 days (standard deviation 21; range 1-141 days) in the HR group ($p < 0.001$). The waiting time for fundholders and non-fundholders was similar in the HR group (29.0 v 30.1 days, $p=0.43$) although fundholders had a longer wait for OAE (27.8 v 23.1 days, $p=0.016$).



Clinical features and smoking habits

The clinical features present in each of the groups are given in fig. 1. More patients in the OAE group complained of epigastric pain ($p=0.002$), nausea ($p<0.001$), heartburn ($p<0.001$) and anorexia ($p<0.001$) than in the HR group, whereas more patients in the HR group had evidence of gastrointestinal bleeding ($p=0.003$) and anaemia ($p<0.001$) compared to the OAE group. The prevalence of vomiting, weight loss and dysphagia did not differ between the two groups.

More patients with upper gastrointestinal pathology ($n=527$) had anaemia compared to those who had a normal OGD ($n=203$) (24 v 3 ; $p=0.046$). Heartburn (49 v 85 ; $p=0.022$), dysphagia (12 v 14 ; $p=0.047$) and weight loss (10 v 8 ; $p=0.023$) were more frequent in patients with oesophagitis compared to the normal OGD group. There was no difference in the frequency of these features in patients with duodenal ulcer/duodenitis or gastric ulcer/gastritis compared to the normal OGD group.

A smoking history was absent in 314 (82%) in the OAE group and 240 (69%) in the HR group ($p<0.001$). Of those cases in which a smoking history was given, the number of smokers was similar in each group (41 v 53 ; $p=0.17$).

Treatment before OGD

Two hundred and ninety-five (77%) patients in the OAE group were currently on upper gastrointestinal treatment at the time of their procedure compared to 186 (54%) in the HR group ($p<0.001$). More patients in the OAE group were on proton pump inhibitors ($134/384$ v $90/346$; $p=0.01$) and H_2 receptor antagonists ($107/384$ v $74/346$; $p=0.048$) compared to the HR group. The number of patients referred to OAE from fundholding practices on acid suppression was similar to those from non-fundholding practices ($78/111$ v $163/273$; $p=0.062$). However, more patients in the fundholding group were on proton pump inhibitors ($48/111$ v $86/273$; $p=0.034$); no difference was observed for patients

on H₂ receptor antagonists (30/111 v 77/273; p=0.9).

Previous investigations

Previous upper gastrointestinal investigations had been carried out in 175 (45%) in the OAE group compared to 198 (57%) in the HR group (p=0.002). There were 81 OGDs (32 v 49, p=0.019), 115 ultrasound abdominal examinations (45 v 70, p=0.002 and 258 barium meal examinations (134 v 124, p=0.82).

Endoscopy findings

OGD findings are shown in fig. 2. There were no significant differences between the two groups. In particular, the number of oesophageal (1 v 3) and gastric tumours (2 v 2) was similar in each group. All patients with upper gastrointestinal tumours were over 65 years.

Helicobacter pylori (HP) testing by CLO test (a rapid urease test for campylobacter-like organisms) test was performed in 162 in the OAE group, of whom 81 (50%) were positive and 74

(91%) of these were prescribed eradication therapy. Of 118 CLO tests in the HR group, 58 (50%) were positive and 54 (93%) were prescribed eradication therapy. Of 185 patients prescribed eradication therapy, 51 (28%) had duodenal ulcers, 64 (35%) had duodenitis, 34 (18%) had gastritis and nine were normal.

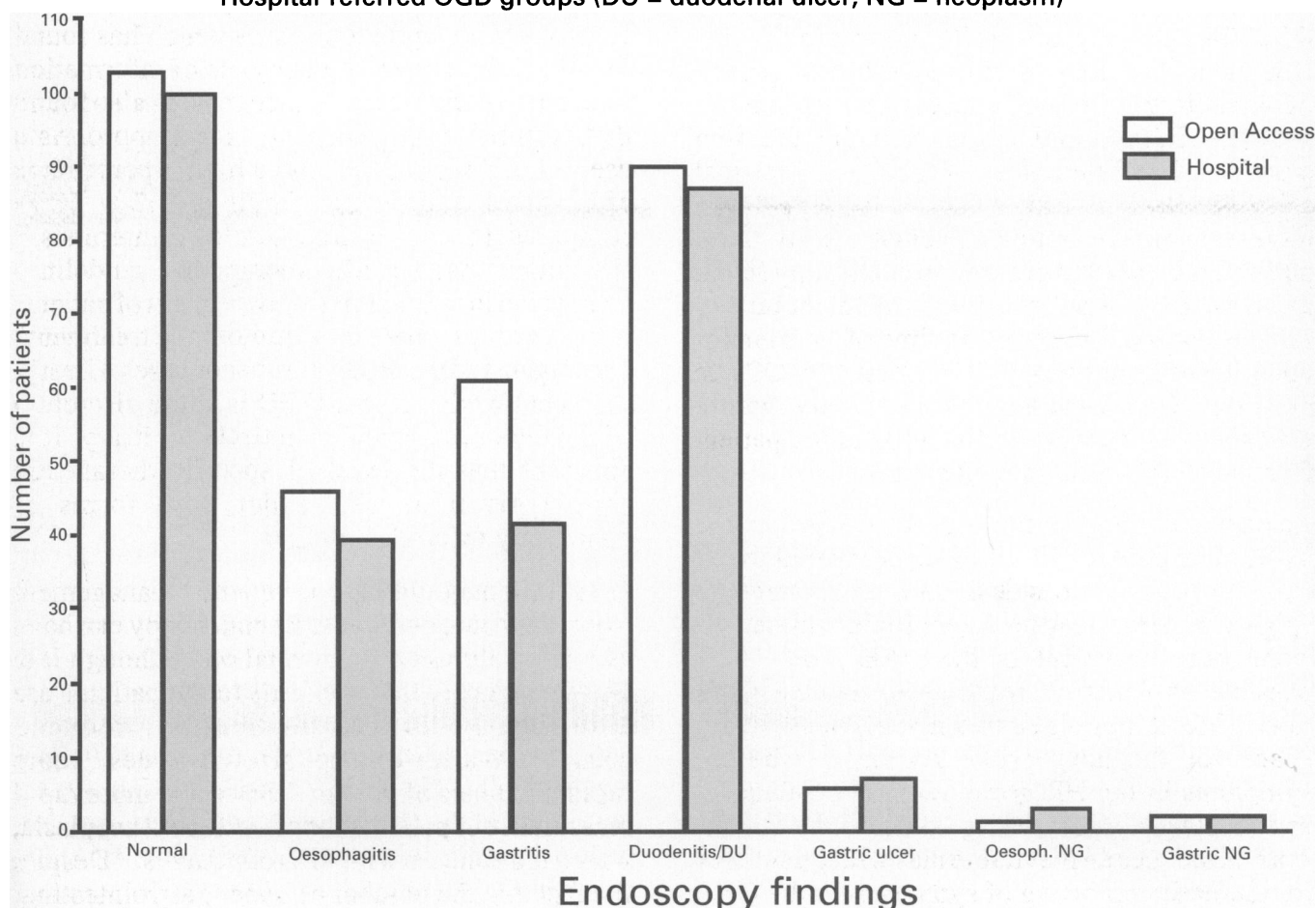
Follow-up investigations

Further investigations were requested in 54 of the OAE group compared to 37 in the HR group (p=0.1). These included abdominal ultrasound examination (n=53), 24-hour pH monitoring (n=15) and barium meal examinations (n=7). Barium meals (n=7) were performed to investigate the upper gastrointestinal tract further. In 2 of these further information was gained which had not been detected on OGD (both duodenal ulcers).

Therapeutic guidelines

Specific therapy was suggested in 245 (64%) in the OAE group compared to 240 (69%) in the HR group (p=0.14). No therapeutic guidelines were

Figure 2: A comparison of the endoscopy findings in the Open Access and Hospital-referred OGD groups (DU = duodenal ulcer; NG = neoplasm)



given in the letter to the GP in 187 cases (94 v 93, $p=0.55$) and "symptomatic therapy" was suggested in 56 cases (43 v 13, $p<0.001$).

DISCUSSION

Open access endoscopy has been the subject of much controversy since its initiation over 20 years ago. Our study clearly demonstrates that there is a significant reduction in waiting time for OAE compared to HR endoscopy. There was no significant difference in waiting time for fundholders and non-fundholders for HR endoscopy, although fundholders had a longer waiting time for OAE. The waiting time for HR endoscopy does not take into account the waiting time to be seen at the outpatient clinic which obviously varies widely for the three consultants offering this service and adds to the waiting time.

The extent of pre-treatment with acid suppression therapy in both groups is a cause for concern since this may lead to healing of pathological lesions prior to endoscopy, it may cause a false-negative *Helicobacter pylori* result⁹ and it may also delay the diagnosis of early gastric cancer.¹⁰ Acid suppression therapy was more prevalent in the OAE than the HR group, both for proton pump inhibitors and H₂ receptor antagonists, and this difference may reflect GPs prescribing habits. It is clear that there is extensive use of proton pump inhibitors before endoscopy which is more prevalent in fundholding than non-fundholding practices. For fundholding practices, empirical acid suppression therapy may be perceived as a more economical option although clearly these patients may need to proceed to endoscopy for an accurate diagnosis if empirical treatment fails to relieve symptoms. A waiting time of 24 days for open access endoscopy should enable GPs to prescribe symptomatic treatment only before endoscopy since there are benefits to the patient from a reliable, accurate diagnosis.

As expected, more patients in the HR group had anaemia and upper GI bleeding compared to the OAE group, whereas less sinister features of epigastric pain, heartburn, anorexia and nausea were more prevalent in the OAE group. One possible explanation for this is that the OAE referral form has a list of ten symptoms with a space for the appropriate response, whereas symptoms in the HR group rely on an adequate and thorough history being taken by the doctor. This introduces an inevitable bias with a tendency for increased reporting of symptoms in the OAE

group. Regarding the major upper gastrointestinal pathologies, more patients with oesophagitis reported three symptoms (heartburn, dysphagia, weight loss) compared to the normal OGD group. Although heartburn is more common in the oesophagitis group it has a poor specificity as it is reported in 42% ($n=85$) of those with a normal OGD. This underlines that symptoms are generally a poor predictor of upper gastrointestinal pathology emphasising the usefulness of OGD in the evaluation of patients with dyspeptic symptoms.¹ The absence of a smoking history, in particular, on the OAE form which involves a "circle as appropriate" response is clearly inadequate in view of the significance that this may have on upper gastrointestinal pathology and *Helicobacter pylori* infection.

Our finding that previous investigations were more common in the HR group clearly indicates that upper gastrointestinal symptoms and pathology are often recurrent leading to hospital referral or re-referral and investigation. This introduces an inevitable selection bias in the HR group which cannot be avoided.

The yield of positive endoscopic findings between OAE and HR did not differ significantly which contrasts with a previous study which has found that specialists have a higher yield of information relevant to patient care.¹¹ Zuccaro *et al* also found that gastroenterologists have a more appropriate use of OAE (85 v 81%) and a higher percentage of positive endoscopic findings (62 v 52%) compared to non-gastroenterology internists.¹² We found that specific therapeutic guidelines were given in approximately two-thirds of patients in both groups whereas "symptomatic treatment" was suggested in a small number of cases. Clearly therapeutic advice post-OGD is at the discretion of the endoscopist and is entirely arbitrary. It is apparent that the level of specific therapeutic advice given to GPs under both forms of endoscopy referral is similar.

OAE has a major impact on patients' management in primary care and a normal endoscopy can have as much value as an abnormal one although it is hard to quantify this. Benefits to the patients are a rationalisation of medication, reduced consultations, lower hospital referral rates,¹¹ more rapid diagnosis of benign disease and more rapid reassurance of patients concerned about neoplasia, which is a concern with 41% of patients.¹³ Despite the fact that the number of upper gastrointestinal

tumours was small, this was similar in both groups and a restriction on OAE cannot be justified at present, on this basis, since individual symptoms have a poor discriminant value.¹³ However, targeting the service to those over 45 years old could reduce the number of procedures, increase the diagnostic yield and still detect all the tumours in our patients.

Recently strategies have been proposed for non-invasive screening for *Helicobacter pylori* in dyspeptics under 45 years. *H.pylori* positive subjects can either be given empirical eradication or undergo OGD.^{14,15} Heaney *et al* have reported that *H.pylori* negative subjects can be treated symptomatically, without undergoing OGD due to the low rate of pathology, thus reducing endoscopy workload by 42% and resulting in improvements in dyspepsia and quality of life at 6-month follow-up.¹⁵ This strategy has been proposed to improve selection of young dyspeptic patients for endoscopy and clearly reduces the workload of the endoscopy unit.

During its first year, the OAE service provided more rapid diagnosis for patients referred to this service, although the diagnostic yield including upper gastrointestinal tumours was similar, when compared to the HR group. Further follow-up is required to ensure that the shorter waiting time for OAE is maintained over subsequent years.

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