

Changes in Time in Yield of Upper Gastrointestinal Endoscopy in Relation to the Applicants Speciality

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Abstract

Introduction: The diagnostic yield of upper gastrointestinal endoscopy (UGE) is high.

Aim: A study was done in order to relate the outcome of UGE to the speciality of the applicant and to study changes in yield in a long period of time.

Material and Methods: A large dataset was used. The endoscopic diagnoses were noted as a percentage of the yearly procedures done on request of the specific applicant. The following endoscopic diagnoses were primarily scored: reflux oesophagitis, peptic ulcer disease, hiatal hernia or insufficient gastric cardia, and cancer.

Results: A total of 36650 procedures were studied via the general practitioner (GP) in 14913 cases (40.6%), the gastroenterologist in 6993 (19%), surgeon or cardiologist in 496 (1.4%) and in 14248 cases (38.9%) via the internist.

No abnormalities and reflux oesophagitis were significantly more often scored in cases done on request of the GP. Cancer was more often seen in cases with the gastroenterologist as the applicant. After an initial rise incidence of hiatal hernia, insufficient cardia, and reflux oesophagitis, both findings show a decrease since 2007. There is some yearly fluctuation in presence of reflux-oesophagitis and cancer, while peptic ulcer disease decreases.

Conclusion: The general yield of UGE is relatively high. There are differences in outcome if the applicant is taken into account. It is also clear that gastro-oesophageal reflux disease is a condition mostly treated by general practitioners.

Introduction

Upper gastrointestinal endoscopy is a routine procedure often applied in normal daily practice. The procedure is requested because of upper gastro-intestinal complaints, anemia, weight loss and several other indications. The endoscopy mostly is done on request of the gastroenterologists or internists. But also surgeons, general practitioners or cardiologist are potential applicants.

There sometimes is discussion as to whether the indication is correct [1, 2]. Some think that only gastroenterologists can decide whether or not to perform the procedure. The diagnostic yield of upper gastrointestinal endoscopy is high when standard guidelines are used appropriately [3]. Hence, it is interesting

to know whether there is a difference in yield of the endoscopy in relation to the applicant. There are two ways to study the appropriateness of the request. First check all indications on the application form, and secondly look at the results of the procedure and correlate this to the speciality of the applicant.

On the other hand, there may be changes in outcome of the endoscopy in a longer period of time. In reviewing the yield of upper gastrointestinal endoscopy it was noticed that changes occurred in morbidity.

For these reasons a study was done in order to relate the outcome of the upper gastro-intestinal endoscopy to the speciality of the applicant and to study whether there are changes in morbidity in a longer period of time.

Material and methods

A large dataset on prospectively consecutive upper gastrointestinal endoscopies collected in the endoscopy department of the Zaans Medical Centre, the community hospital of the Zaanstreek region in the Netherlands, was used. From 1992 till the beginning of 2003 a written standardized endoscopy report was made by the endoscopist. From 2003 a custom-made computerized report was used (Endobase™ Olympus). Results of the endoscopy were incorporated in the dataset.

The upper gastrointestinal endoscopies were done by two endoscopists from 1992 till 2010. In 2010 a third endoscopist started working. The applicant is routinely noted in the endoscopy report. Unfortunately the reason for doing the endoscopy was not noted in the data-set.

Since 1992 the endoscopy department offers an open-access facility to the general practitioners working in the Zaanstreek region. Patients can be sent for endoscopy without prior consultation by the gastroenterologist.

For the present study, the endoscopic diagnoses were noted as a percentage of the yearly procedures done on request of the specific applicant. This was done since patients could have more than one abnormality seen during the procedure or underwent more than one endoscopy in the specific time period.

In the figures only the most important and clinically relevant endoscopic diagnoses were scored. These are reflux oesophagitis,

peptic ulcer disease, hiatal hernia or insufficient gastric cardia, and cancer in esophagus, stomach or duodenum. In the table also macroscopic gastritis, Bulbitis, and taking of duodenal biopsies were scored.

The procedures were done with Olympus and since 2012 with Fujinon video endoscopes, mostly without conscious sedation.

Statistical analysis was done with chi-square test for contingency tables. A value below 0.05 was considered significant.

Results

A total of 36650 consecutive endoscopies from the upper gastrointestinal tract were studied. The procedure was done on request of the general practitioner in 14913 cases (40.6%), on request of a gastroenterologist in 6993 (19%), surgeon or cardiologist in 496 (1.4%) and finally in 14248 cases (38.9%) on request of an internist.

In 39 (0.1%) cases it was not possible to retrieve the applicant (the endoscopist simply forgot to note the applicant).

Table 1 shows the overall yield of endoscopy in the total

study period. No abnormalities seen during the procedure was significantly more often scored in cases done on request of the general practitioner. On the other hand reflux oesophagitis was scored higher in cases of a so-called open access procedure (done on request of the general practitioner). Cancer in the upper part of the gastrointestinal tract was more often seen in cases with the gastroenterologist as the applicant. Duodenal biopsies were more often taken on request of an internist.

Figure 1 shows the yearly yield of upper gastrointestinal endoscopy with respect to hiatal hernia of insufficient cardia for the different applicants. It is clearly seen that after a rising incidence of hiatal hernia or insufficient cardia, both findings are decreasing since 2007.

Figure 2 show the yearly number of patients with reflux-oesophagitis. Figure 3 shows the presence of cancer in esophagus, stomach or duodenum, while figure 4 shows the prevalence of peptic ulcer disease.

Finally, figure 5 shows all upper gastrointestinal procedures without macroscopic abnormalities.

Table 1: The yield of upper gastro-intestinal endoscopy for each applicant

	General practioner	gastroenterologist	surgeon or cardiologist	internist
No abnormalities	4643(31%)	1883(27%)	128(26%)	3745(26%)
Cancer	1900(13%)	900(13%)	39(8%)	1496(10%)
Peptic ulcer	519(3.5%)	556(7.9%)	58(11.6%)	985(7%)
Hiatal hernia	5714(38%)	2372(34%)	155(31%)	4175(29%)
Oesophagitis	2693(18%)	782(11%)	61(12%)	1566(11%)
Gastritis	3399(22%)	1138(16%)	114(23%)	3063(21%)
Bulbitis	1006(6.7%)	380(5%)	35(7%)	993(7%)
Duodenal biopsies	450(3%)	318(4.5%)	14(2.8%)	1811(12.7%)

Discussion

The present study shows an interesting view of upper gastrointestinal endoscopy in the course of many years. It shows differences in out-come depending on the applicant. But also changes in outcome over a long period of time reflecting changes in morbidity.

In a another short study period there was no significant change in the yield of endoscopies on request of the general practitioner [4]. However, as seen in Figure 1 in the present study it will be clear that changes are present. Hiatal hernia or insufficient cardia is often seen in procedures done on request of the general practitioner. After a rising incidence of hiatal hernia or insufficient cardia, both findings are decreasing since 2007.

The reason for this finding is not obvious. The same is true for the diagnosis reflux oesophagitis as shown in Figure 2. In addition, these findings implicate that gastro-esophageal reflux disease with its different phenotypes is a condition generally treated by the general practitioner, at least in the Netherlands. The steep rise in incidence in the nineties possibly can be explained by the recognition of reflux disease, a true rising incidence, and the accessibility of endoscopy.

Cancer was more often seen in procedures done by the gastroenterologist. The main reason for this is not obvious. It can be that patients with alarm symptoms in the upper digestive tract are primarily referred to the gastroenterologist. On the other hand, follow-up by the gastroenterologist after the diagnosis of cancer could also be a possibility.

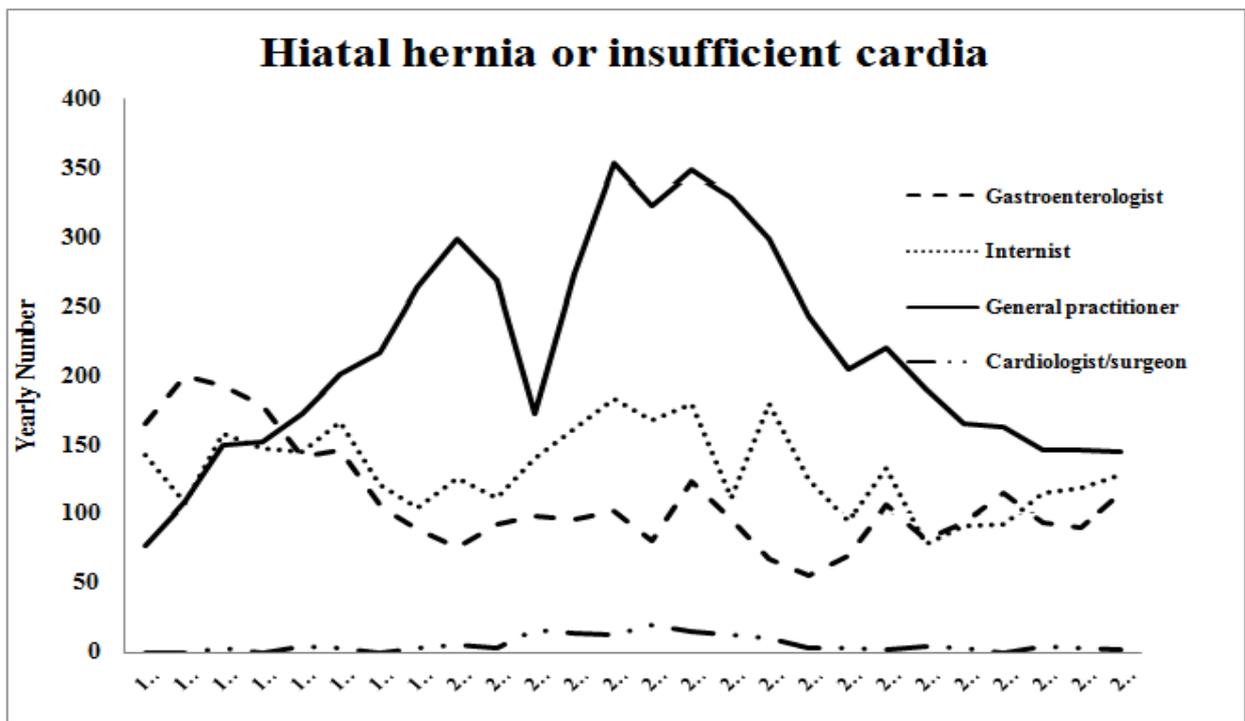


Figure 1: The yearly yield of upper gastrointestinal endoscopy with respect to hiatal hernia of insufficient cardia for the different applicants.

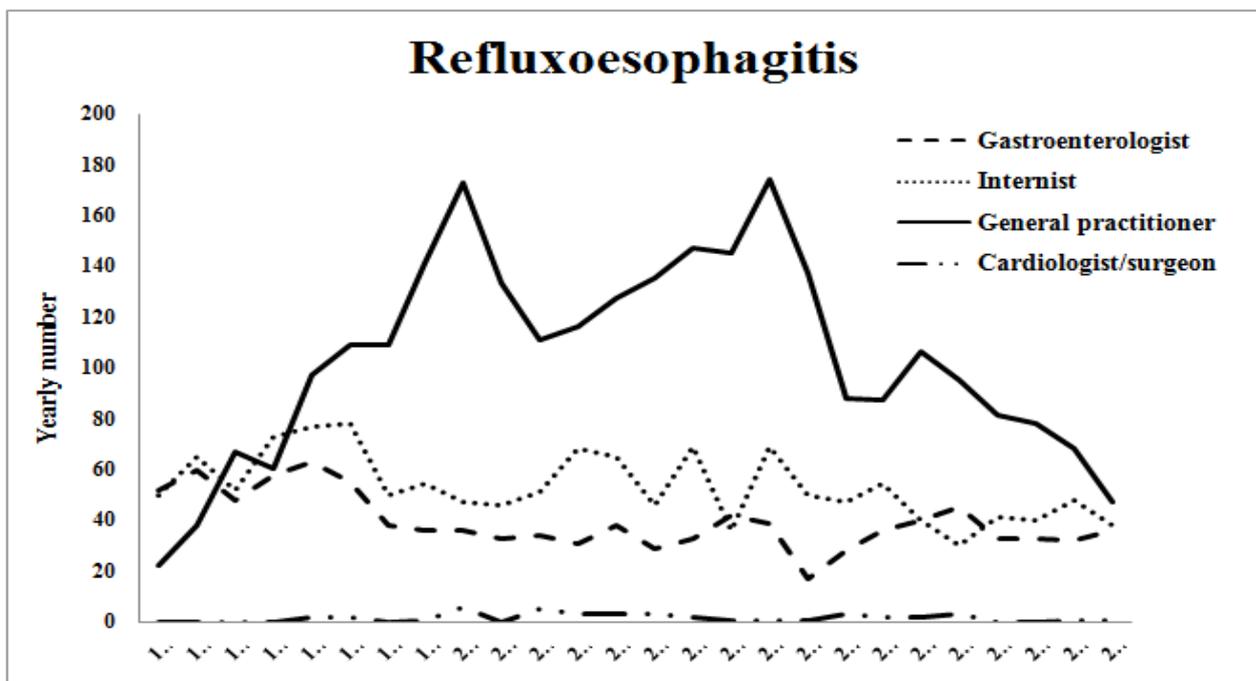


Figure 2: The yearly yield of reflux oesophagitis in different applicants.

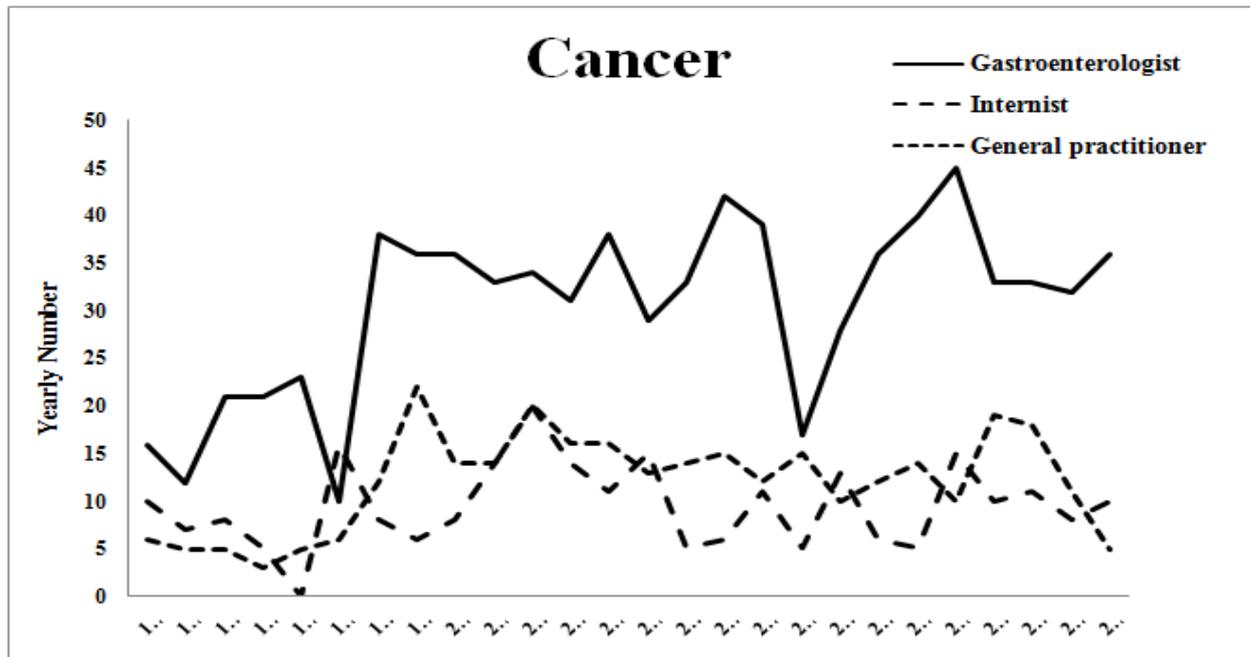


Figure 3: Cancer in esophagus, stomach or duodenum

From Figure 4 it will be clear that peptic ulcer disease is decreasing. In an earlier study this was already shown. The present study shows that this decrease is irrespective of the speciality of the applicant [5].

The appropriateness of referrals for endoscopy and thus the diagnostic yield of these endoscopies has become an important issue. Aljebreen et al studied the indications for upper gastrointestinal endoscopy. Referrals from general practitioners were considered inappropriate in 47% of patients while this was only in 19.5% of gastroenterologist’s referrals. Nearly, 37.8% of the out-patient referrals were inappropriate compared to only

7.8% for inpatients. Abnormal findings were found in 78.5% of patients referred a gastroenterologists, while in those referred by primary care physicians this was 49.7%. The authors concluded that a large portion of patients referred for endoscopy via the general practitioner are considered inappropriate [6]. In 1997 a paper from Canada built a case for introduction of an open-access facility for upper gastrointestinal endoscopy. It was stated that consultants are no better at deciding who requires endoscopy than general practitioners [7].

Figure 5 shows the yearly number of endoscopies without abnormality seen in esophagus, stomach or duodenum. As can

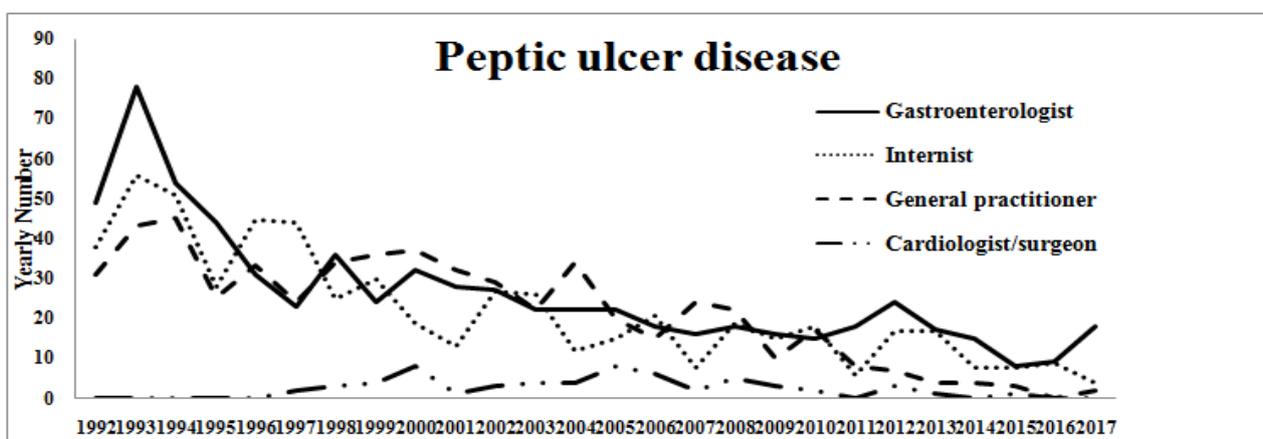


Figure 4: Presence of peptic ulcer disease.

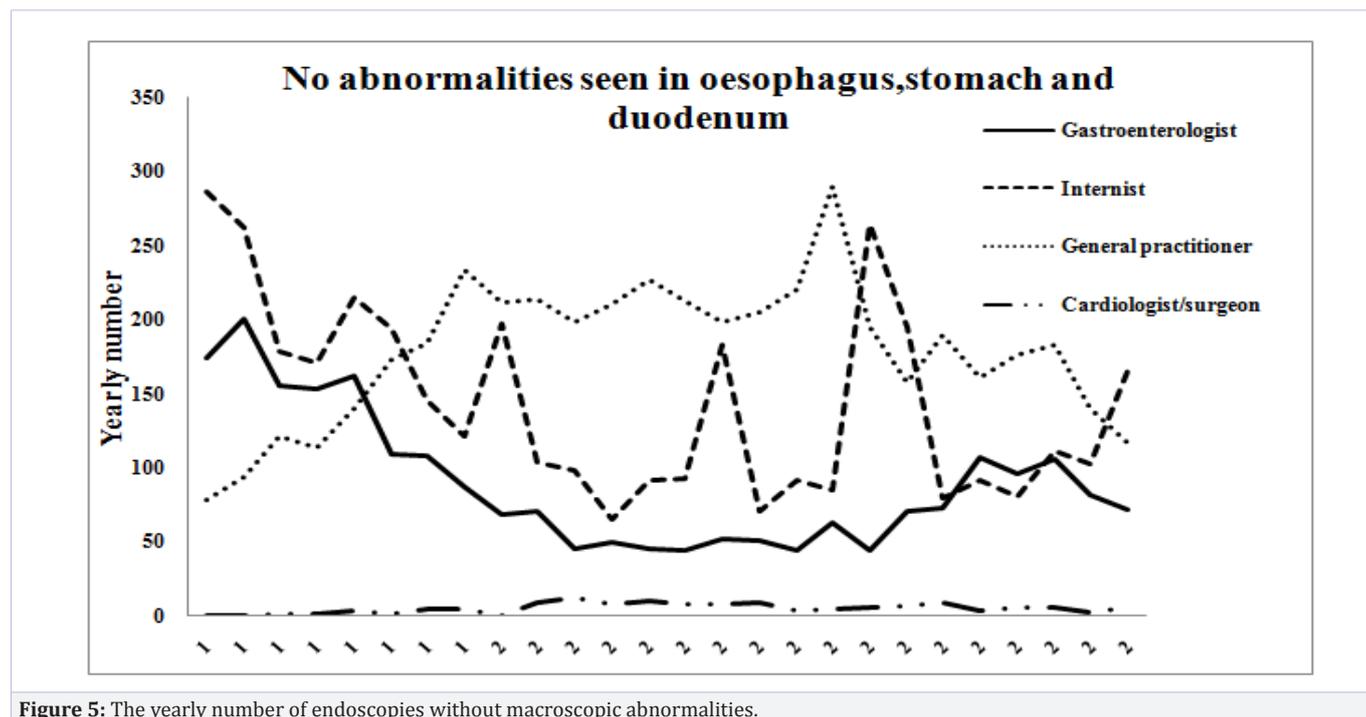


Figure 5: The yearly number of endoscopies without macroscopic abnormalities.

be seen there is a great variation between the different groups of applicants. However, there is a clear trend in a decrease in procedures on request of the gastroenterologist and internist, while there is a trend in increase of procedures without abnormalities on request of the general practitioner. Although some authors think that the request from the general practitioner was not valid, it can also be argued that a negative finding forms a reassurance for the patient that no severe illnesses are present. A negative endoscopy is of value in normal daily practice. It is reported that open access gastroscopy has a clear and major effect upon patient management. An endoscopy without abnormalities has the same effect and impact as an abnormal one. It is associated with rationalization of drug therapy, reduced consultations and a low hospital referral rate[8].

An older study of open-access endoscopy showed a detection rate of 58% in cases of referral by the general practitioner. Subsequent referral to a consultant was as low as 12% [9].

From a study in the United Kingdom it appeared endoscopy in cases of upper abdominal complaints influences patient management in approximately one-sixth of cases [10].

It is concluded that the general yield of upper gastrointestinal endoscopy is high. There are differences in outcome if the applicant is taken into account. It is also clear that gastro-oesophageal reflux disease is a condition mostly treated by general practitioners.

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