Appropriateness of gastrointestinal consultations for hospitalized patients in an academic medical center

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ABSTRACT

Background: Consultation of experts in the internal medicine or surgery subspecialties is needed in the hospitalized population according to decisions of the house staff. Sometimes the referrals are not justified, consuming time and money without a significant change in the patient outcome. **Objectives:** The aim of our retrospective study was to evaluate justification of consecutive referrals of hospitalized patients for gastroenterology consultation. **Materials and Methods:** Request for consultation was deemed not justified when at least one of the following parameters was found: No contribution to case management, discharge before consultation, cancellation at the last minute, and a recommendation for ambulatory management or surgery. **Results:** In August-September 2006, there were 232 requests for gastroenterology consultations. Of them 127 (54.7%) were men. The average age was 64.13±20.33 years. Ninety-four (40.2%) of the cases had been hospitalized because of other reasons than the consultation issue. Consultation was not justified in 60 patients (25.9%). Ambulatory management was a possibility in 151 cases (65.0%). Request for colonoscopy and gastrointestinal background disease were the only significant predictive factors for justification of consultation, $P<0.0001$ for both. **Conclusions:** In one fourth of the cases, gastroenterology consultation was not justified according to our strict criteria.

KEY WORDS: Consultation, endoscopy, gastroenterology procedure, hospitalization

Consultation of experts in the different medical fields is a cornerstone of hospital management. People who are hospitalized on an emergency or elective basis in the Internal Medicine or Surgical Departments are being treated by the house staff, mainly residents and fellows. Consultation of experts in the sub-professions of internal medicine or surgery is needed in part of the hospitalized population according to decisions of the house staff.

Little information in the literature exists to guide interactions among different medical specialists. Salerno and colleagues looked at physicians' opinions in regard to effective consultation.[1] They found that specialty-dependent differences exist in consult preferences of physicians. Scott and colleagues evaluated the quality of reply consultations of patients referred to clinics at a tertiary teaching hospital.[2] They looked at six parameters for quality assurance and found completeness in less than 60% of the cases. As an example, they found a proper assessment of patient understanding and adherence to therapy, in less than 15% of the consultation letters.[2] There is no study looking at the opposite angle of experts evaluating consultation requests.

Consultations are usually supplied by experts who are part of the hospital staff and organized according to the specific professions in other units (departments or divisions). Sometimes the burden of consultations for hospitalized patients is very heavy, especially in cases when consultations are added to routine daily work. In gastroenterology, consultations may be a part of a very busy day of endoscopy performance and outpatient clinic. The higher the consultation rate, the heavier is the workload on the consultants. Sometimes a consultation request is completely useless, since the patient refuses to undergo endoscopy, or the procedure could be performed on an outpatient basis.

Health systems and hospital functioning differ amongst various countries but the basics of patient care are very similar. The cost-effectiveness of consultation in hospitalized patients may be an important factor for using that tool in public hospitals. We believe that the more justified the consultation is, the more cost-effective is the patient management. Thus, the aim of this study was to evaluate justification for consecutive referrals of hospitalized patients for gastroenterology consultation.

Materials and Methods

The study was carried out in a tertiary referral center affiliated to a university. The hospital has a hospitalization rate of 60,000 cases a year, and all the medical facilities are available. People

are referred from the emergency room for hospitalization in the Internal Medicine department (six wards of general internal medicine, one ward for cardiology, and one ward for geriatrics) or in the Surgical Department (two wards of general surgery, and specific wards for urology, ear, nose and throat (ENT), neurosurgery, and transplantation).

When the house staff physician decides on consultation he sends a specific form to the relevant unit. Waiting time for consultation is no more than 24 h. The consultant examines the patient and writes his recommendation in the patient file. The house physician may, or may not, agree with the consultant or perform his recommendation. If the consultation included recommendation for an endoscopy procedure, this may be performed in-hospital, or stays as a recommendation in the release summary for the family physician to continue.

Request for consultation was deemed not justified when at least one of the following parameters were found: there was no contribution to the case management, patient discharged before the consultation act took place (less than 24 h from the request), consultation cancelled at the last minute usually when not approved by a senior physician, and there was a recommendation for ambulatory management or surgical examination. Request was considered as justified when none of the above existed, and at least one of the following parameters was found: a proper endoscopy procedure was asked, endoscopic or radiological procedure recommended, or there was a clear recommendation for management, change in treatment or operation. In addition, two other parameters were considered: the possibility of ambulatory management and the refusal of patients to undergo endoscopic procedure. These criteria were decided apriori by the authors. To our knowledge, no gold standard criteria for appropriate/justified and inappropriate/unjustified in-patient referrals have been published before.

Patients' demographic and clinical details were collected from the hospital files and consultation forms. Indication for consultation, endoscopy procedure request and background diseases were computed. When consultation was asked for any condition other than the reason for hospitalization, it was specifically marked.

Data management and analyses were done with SPSS software (Version 13, 2007). Chi–square test or Fisher's exact test was used to analyze statistically significant relationships in the distribution of categorical variables; *t*-test was used for comparison of averages. Proportions were used in univariate and multivariate analyses. A *P* value of <0.05 was considered statistically significant. All parameters were compared by type of consultation (justified or not justified).

Results

During the study period from 1 August to 30 September 2006, there were 232 requests for gastroenterology consultations referred to the Department of Gastroenterology, from the internal medicine and surgical departments. During this period, 2100 outpatients were consulted and 1200 endoscopy procedures were performed. The waiting time for the outpatient clinic was two months and for the endoscopy procedure one month. In the two-month study period no patient was admitted for consultation or endoscopy procedure because of the long waiting list at the outpatient clinic. Forty per cent of the patients referred for gastrointestinal (GI) consultation for other conditions than that they have been hospitalized for [Table 1]. In rare cases patients were referred for endoscopy procedure from another secondary center. There is no gastroenterology ward in our hospital. When patients needed hospitalization because of specific GI problem such as bleeding, relapse of inflammatory bowel disease or diverticulitis, it was done in Internal Medicine or Surgical departments.

Of the 232 patients 127 (54.7%) were men. The average age was 64.13±20.33 years. The main indication for consultation was GI

Table 1: Gastroenterology consultation request, indications and background diseases, N (%)

Consultation request	Total	Justified	Not justified	*P*
Patients	232 (100.0)	172 (74.1)	60 (25.9)	-
Men	127 (54.7)	89 (51.7)	38 (63.3)	0.160
Age (years) Mean±SD	64.13±20.33	62.95±21.56	67.48±16.69	0.094
Range	18-95	18-95	23-93	-
Referral department				
Internal medicine	167 (72.0)	121 (70.3)	46 (76.7)	0.433
Surgery	65 (28.0)	51 (29.7)	14 (23.3)	0.433
Indication for consultation				
GI bleeding	76 (32.8)	59 (34.3)	17 (28.3)*	0.488
Upper GI symptoms	60 (25.9)	40 (23.2)	20 (33.3)	0.177
Lower GI symptoms	53 (22.8)	40 (23.2)	13 (21.7)	0.952
Liver, bile ducts, pancreas	34 (14.7)	28 (16.2)	6 (10.0)	0.338
Other	9 (3.8)	7 (4.1)	2 (3.3)	0.911
Endoscopy/procedure request	167 (72.0)	135 (78.4)	32 (53.3)	<0.0001
Colonoscopy	77 (33.2)	70 (40.6)	7 (11.7)	<0.0001
Esophago-gastro-duodenoscopy	47 (20.3)	35 (20.3)	12 (20.0)	0.891
ERCP or EUS	32 (13.8)	27 (15.7)	5 (8.3)**	0.225
PEG	9 (3.9)	5 (2.3)	4 (6.7)	0.356
Enteroscopy	1 (0.4)	1 (0.6)	0	0.599
Capsule endoscopy	1 (0.4)	1 (0.6)	0	0.599
Background diseases	152 (65.4)	96 (55.8)	56 (93.3)	<0.0001
GI	42 (18.1)	20 (11.6)	22 (36.7)	<0.0001
Cardiac	26 (11.2)	20 (11.6)	6 (10.0)	0.920
Dementia	15 (6.5)	9 (5.2)	6 (10.0)	0.318
Oncology	13 (5.6)	10 (5.8)	3 (5.0)	0.925
Metabolic	12 (5.2)	6 (3.4)	6 (10.0)	0.097
Lung	10 (4.3)	6 (3.4)	4 (6.7)	0.472
Kidney	6 (2.3)	5 (2.9)	1 (1.7)	0.975
Other	28 (12.2)	20 (11.6)	8 (13.3)	0.906
Consultation for other conditions than the reason for hospitalization	94 (40.2)	60 (34.8)	30 (50.0)	0.054

GI = gastrointestinal, ERCP = endoscopic retrograde cholangioduodenoscopy, EUS = endoscopic ultrasound, PEG = percutaneous endoscopic gastrostomy, *In 10 cases previous gastrointestinal bleeding stopped before hospitalization and had been investigated in the past, and in seven cases consultation request was cancelled, **In three cases investigation was completed before hospitalization, and in two cases the consultation request was cancelled

bleeding in 32.8% of the cases, and specific endoscopy request was found in 72.0% of the referrals [Table 1]. High proportion of obscure and lower GI bleeding, requiring both upper and lower endoscopy is the reason for increased colonoscopy. Chronic background diseases were reported in 65.4% of the cases, and these included diseases of the GI tract in 18.1%. Ninety-four cases (40.2%) were hospitalized because of a reason other than the consultation issue.

Consultation was not justified according to the specific criteria in 60 (25.9%) cases. The criteria for judging justification or proper consultation are cited in Table 2. Ambulatory management was a possibility in 151 cases (65.0%) and should not be asked for. In 30 cases (13.0%) consultation had no added value for the patients' management. When cases were stratified according to justification for consultation, request for colonoscopy was found in 40.6% of the justified group in comparison with only 11.7% of the not justified group ($P<0.0001$). Background GI disease was found to be an unfavorable factor, in 36.6% of the not justified group versus 11.6% of the justified group ($P<0.0001$). In a multivariate analysis these were found to be independent factors to influence justification of consultation.

Endoscopy as requested was approved in 95 (40.9%) cases. In 30 cases (13.0%) another endoscopic procedure was advised by the consultant. Fifty per cent of these endoscopic procedures could be performed in the community GI units.

Table 2: Parameters for justification of gastrointestinal consultation*

Results	N (%)
Consultation justified*	172 (74.1)
Endoscopy as requested	95 (40.9)
Recommendation for management	24 (10.3)
Different endoscopy procedure recommended	30 (13.0)
Radiological examination recommended	12 (5.2)
Change in treatment	8 (3.4)
Operation	3 (1.3)
Consultation not justified**	60 (25.9)
No contribution to case management	30 (12.8)
Patient discharged before consultation	13 (5.6)
Referral to community gastroenterology clinic	10 (4.5)
Cancellation	5 (2.2)
Surgical consultation priority	2 (0.8)
Possible ambulatory management	151 (65.0)
Patients refused endoscopy	14 (6.0)

*Request was classified justified when none of the above existed, and at least one of the following parameters was found: a proper endoscopy procedure was asked, endoscopic or radiological procedure recommended, or there was a clear recommendation for management, change in treatment or operation, **Request for consultation was deemed not justified when at least one of the following parameters were found: there was no contribution to the case management, patient was discharged before the consultation act took place, consultation was cancelled at the last minute, and there was a recommendation for ambulatory management or surgical examination

Discussion

Consultation requests were found "not justified" in 25.9% of the cases. The definition of "not justified consultation" is based on a preliminary set of assumptions dealing with the potential outcome of the consultation. Last minute cancellation of the consultation, patient discharge before consultation attempt, previous referral for ambulatory management or to gastroenterology clinic, the need for urgent surgical evaluation and absence of contribution to the case management, all considered not justified. Taking into account that 40.2% of the patients were hospitalized for a reason other than GI disease, that the indication for consultation was not directly related to the reason for hospitalization and that possible ambulatory management could be performed in 65% of the cases, make our findings even more significant.

When the patients were studied as a cohort, or when we separated them into two groups of justified and not justified consultations, we identified two predictive factors for justification. Univariate as well as multivariate analysis of all parameters in Table 1 revealed that request for colonoscopy was a favorable predictive factor, while background GI disease was an unfavorable predictive factor for justification of gastroenterology consultation. Since colonoscopy is recommended not only for symptomatic patients but also for early detection and prevention of colorectal cancer, our finding is not surprising. In addition, high proportion of obscure and lower GI bleeding, requiring both upper and lower endoscopy explained the reason for increased colonoscopy. Likewise, patients with a background GI disease, reported in 18.1% of the cases, may have been evaluated for their GI symptoms before, thus consultation may be not justified. Insecurity and lack of knowledge may be the main drive for asking consultation by the staff physicians in these cases, but this hypothesis should be investigated in a larger cohort of patients.

Our findings are supported by Ta and colleagues who reviewed rheumatology consults over 10 years at a major academic center.[3] They demonstrated a significant increase in the consultation number over the study period when compared to total hospital admissions. Many of these consults came from the primary care clinic and required a procedure or simple treatment plan. Sometimes hospitalization is aimed only to shorten waiting times for specialists' consultations, and overcome shortage of health facilities in the community.[4,5]

We believe that the routine activity of the department, which included outpatient clinic and endoscopic procedures, had no influence on consultations in the hospital wards. Our obligation was to perform the consultation within 24 h, irrespective of all other tasks. In addition to daily dedicated time for consultations, more activity performed at the same day afternoon.

The weaknesses of our study include the fact that it is a retrospective study, and the paper deals only with cases referred. We don't know how many cases were not referred who might have been appropriate, and there is no measure of outcomes. But, we believe that it could serve as the basis for an interventional study which would be of interest, and might have the ability to change practice.

We conclude that evaluation of hospitalized patients after gastroenterology consultation may be performed on an

ambulatory basis in many cases. In 25% of the cases consultation was not justified according to our strict criteria.

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