Applicability and efficacy of qualifying criteria for an appropriate use of diagnostic upper gastrointestinal endoscopy

Bogdan KALISZAN, Jean-Claude SOULÉ, Thierry VALLOT, Michel MIGNON

SUMMARY
Appropriate indication for upper gastrointestinal endoscopy (UGE) may be facilitated by referring to qualifying criteria such as those devised by the European Panel (EPAGE) and French Experts (ANAES). This prospective study evaluates the applicability and efficacy of these criteria in clinical practice.

Patients and methods — A total of 522 patients was included (55% inpatients, 57% male, mean age 55 years). Appropriateness of referral was evaluated using EPAGE and ANAES criteria sets by a single independent expert.

Results — EPAGE criteria were applicable in 71% of cases. Indications for UGE were appropriate, inappropriate and uncertain in 62%, 27% and 11% respectively; 74%, 16% and 10% of clinically significant lesions detected by UGE were disclosed in patients having appropriate, inappropriate and uncertain indications respectively. ANAES criteria were applicable in 81% of cases. Indications for UGE were appropriate in 74%, inappropriate in 26%, 76% and 24% of clinically significant lesions detected by UGE were disclosed in patients having appropriate and inappropriate indications respectively. Whatever the criteria set used, all cancers and most of the severe lesions were observed in patients with appropriate indications; those patients were more often in-patients and were significantly older than patients belonging to the inappropriate group.

Conclusion — Reference to EPAGE and ANAES qualifying criteria facilitates patient selection for UGE. Final decision must however rely on practitioner advice. ANAES criteria are significantly more often applicable than EPAGE ones. However, EPAGE referential when applicable is more predictive of the UGE findings.

RÉSUMÉ
Applicabilité et efficacité des critères d’indications de l’endoscopie digestive haute diagnostique

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L’indication appropriée d’une gastroscopie peut être facilitée par le recours à des critères explicites tels ceux élaborés par l’EPAGE et l’ANAES. L’évaluation de l’applicabilité et de l’efficacité en pratique clinique de ces référentiels a été l’objet de cette étude prospective.

Malades et méthodes — Cette étude a inclus 522 malades (55 % hospitalisés, 57 % hommes, âge moyen, 55 ans). Le caractère approprié ou non de l’indication de la gastroscopie a été évalué par un expert indépendant unique.

Résultats — Le référentiel EPAGE a été applicable dans 71 % des cas ; les indications d’une gastroscopie y étaient appropriées, inappropriées et incertaines dans 62 %, 27 %, 11 % des cas respectivement ; 74 %, 16 % et 10 % des lésions cliniquement significatives figuraient dans les groupes d’indications appropriées, inappropriées et incertaines respectivement. Le référentiel ANAES a été applicable dans 81 % des cas ; les indications d’une gastroscopie y étaient appropriées et inappropriées dans 74 % et 26 % de cas ; 76 % et 24 % des lésions cliniquement significatives figuraient dans les groupes d’indications appropriées et inappropriées respectivement selon les deux référentiels, tous les cancers, la majorité des lésions sévères figuraient chez les malades avec indication appropriée de gastroscopie ; les malades de cette catégorie étaient plus âgés et plus souvent hospitalisés que dans le groupe d’indications inappropriées.

Conclusion — Les deux référentiels testés sont utiles à mieux définir les indications de la gastroscopie : leur application ne permet pas néanmoins de se dispenser de l’avis du praticien. Le référentiel ANAES est plus souvent applicable que le référentiel EPAGE, en contrepartie le référentiel EPAGE est plus prédicatif des constatations endoscopiques chez les malades pour lesquels il est applicable.

Introduction
Upper Gastrointestinal Endoscopy (UGE) is the most reliable procedure of upper digestive tract investigation [1]. The increasing number of endoscopies performed (1 122 010 in France in 2003) [2], the high cost and potential risks [3] of this investigation as well as patients’ reluctance, prompted physicians to develop useful qualifying criteria. Sets of such criteria have been proposed by the British Society of Gastroenterology [4] and the American Society of Gastrointestinal Endoscopy [5]: evaluation

of the appropriateness of indication for UGE widely differed when both sets of criteria were applied probably because of methodological differences [6]. A group of European experts of different medical specialities convened in 1988 in Lausanne and proposed a set of qualifying criteria for an appropriate selection of endoscopical procedures (UGE and coloscopy). After an extensive review of the literature, the European Experts (14 members) using the RAND appropriateness method, rated on a nine-point scale the appropriateness of each of the several hundred indications for UGE. An indication was classified as appropriate if the median of the panelists’ ratings fell in the area 7 to 9, without disagreement, inappropriate if the median fell in the area 1 to 3, without disagreement. Scenarios with a median rating of 4 to 6, or those revealing disagreement among the panelists was classified as equivocal/uncertain. Disagreement was considered to be present when at least five panelists rated an indication from 1 to 3 and five others from 7 to 9° [7]. The European Panel on the Appropriateness of Gastrointestinal

Endoscopy (EPAGE), including 14 experts, established 7 principal clinical situations or sets of clinical situations where the prescription of UGE could be contemplated [7-15] as summarized in table I. In 1999, EPAGE created an interactive website easy to access and use at www.epage.ch.

In France, criteria for appropriate use of UGE were elaborated in 2001 (www.anaes.fr, non interactive website), arguing that previously proposed guidelines were essentially based on the opinion of Experts: six hundred and two articles were selected from the literature and analysed, of which 256 were used to elaborate recommendations [16-17]. The French working group retained 10 principal clinical situations where the prescription of UGE could be contemplated (table I).

The aim of this prospective study was to assess the applicability of EPAGE and ANAES criteria in clinical practice, to check the reliability of EPAGE and ANAES assessments of appropriateness for lesions disclosure. The performances of these two sets of explicit criteria were comparatively evaluated.

Patients and methods

The study was conducted from December 2002 to June 2003 in the Endoscopy Unit of Bichat University Hospital in Paris and included 522 patients. Endoscopies performed as emergency procedures were excluded.

<table>
<thead>
<tr>
<th>No</th>
<th>Clinical situations selected by EPAGE *</th>
<th>No</th>
<th>Clinical situations selected by ANAES **</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Uncomplicated dyspepsia</td>
<td>1</td>
<td>Isolated dysphagia and/or odynophagia</td>
</tr>
<tr>
<td>2</td>
<td>Frequent symptoms (≥ 2/wk) suggesting gastroesophageal reflux disease (GERD) or history of reflux-associated mucosal disease of the esophagus, without alarm symptoms and without Barrett’s esophagus</td>
<td>2</td>
<td>Persistent (&gt; 48 hours) isolated nausea or vomiting</td>
</tr>
</tbody>
</table>
| 3  | Known Barrett’s esophagus, without alarm symptoms | 3  | Dyspepsia:  
— age > 45 y and/or alarm symptoms,  
— age < 45 y, no alarm symptom but Hp positive or resistance to treatment |
| 4  | Atypical chest pain                     | 4  | Chronic iron deficiency ± anemia:  
— first choice clinical symptoms suggesting UGIT*** disease or poor general condition (elderly, comorbidity),  
— all other cases after inconclusive colonoscopy |
| 5  | Alarm symptoms: recent upper GI bleeding, esophageal dysphagia, unexplained weight loss, iron deficiency anemia | 5  | Acute gastrointestinal bleeding originating in UGIT:  
— active haematemesis and/or melaena,  
— persistent bleeding despite previous inconclusive UGE and colonoscopy,  
— rebleeding after ulcer haemostatic treatment |
| 6  | Risk factors and pre-malignant conditions of UGI tract: pernicious anemia, atrophic gastritis, status post-gastrectomy, gastric polypus, familial adenomatous polyposis | 6  | Gastro-oesophageal reflux disease:  
— alarm symptoms, dysphagia, bleeding,  
— age > 50 y,  
— medical treatment failure  
— unexplained atypical symptoms |
| 7  | Miscellaneous indications: assess healing of benign gastric ulcer, follow-up of sclerotherapy/banding, suspected malignant lesion on UGI series, suspected malabsorption syndrome | 7  | Barrett’s esophagus:  
— columnar epithelium diagnosis,  
— intestinal metaplasia/dysplasia diagnosis and monitoring |
| 8  | Peptic ulcer:  
— symptomatic patients: age > 45 y  
— symptomatic patients: age < 45 y with:  
— alarm symptoms  
— positive test for HP  
— medical treatment failure  
— gastric ulcer,  
— suspicion of NSAID mucosal lesions | 8  | Portal hypertension:  
— esophageal and/or gastric varices diagnosis  
— endoscopic treatment follow up |
| 9  |  | 9  | Duodenal biopsy:  
— suspected malabsorption syndrome  
— gluten-free diet monitoring  
— parasitic infestation diagnosis |

* Qualifying precisions appear upon entry into the EPAGE interactive website.
** For further details refer to ANAES website.
*** UGIT = upper gastrointestinal tract.
The appropriateness of the indications for UGE was assessed using both the EPAGE software www.epage.ch and ANAES criteria document accessible at www.anaes.fr. Each indication was classified by a single independent expert as appropriate, inappropriate and uncertain according to EPAGE criteria and as appropriate and inappropriate according to ANAES criteria. There is no uncertain category for ANAES. The percentage of patients with lesions detected by UGE was evaluated in each group of patients classified according to appropriateness of indication assessed in both systems. The data were collected from a validated standardized form [18] filled by Practitioners whether General Practitioner (GP) or Specialist which comprised: patients’ identification number, age, gender, mode of access to endoscopy (referral by GP, Gastroenterologist or other Specialist, in- or out-patient’s status), symptoms, indication for the examination, previous upper gastrointestinal X-Ray series and/or endoscopy (ies), comorbidity, results of the endoscopy and histological findings. Endoscopical findings were classified according to Froehlich et al. [19] into clinically significant or not. In the study of these authors, 95% of clinically non-significant endoscopical findings included: normal endoscopy, uncomplicated hiatal hernia, non-erosive gastritis, and non-erosive duodenitis. Clinically significant findings comprised: erosive esophagitis, esophageal varices, Barrett’s esophagus, esophageal cancer, benign esophageal stenosis, achalasia, Mallory-Weiss tears, erosive gastritis, gastric ulcer, gastric cancer, hypertensive gastropathy, angio-dysplasia, erosive duodenitis, ulcer and cancer of the duodenum. When there was more than one endoscopic diagnosis, the most severe one was used for analysis. The data were recorded on an Excel worksheet. Age differences were compared using Kruskal-Wallis test. The chi-square test was used to test differences in the indications of UGE between the appropriate and inappropriate groups. The chi-square test was also used to test differences among endoscopical findings whether the indication for UGE was appropriate or not as determined by EPAGE and ANAES criteria respectively. All statistical tests were considered significant at \( P < 0.05 \). The software used for all statistical calculations was STATISTICA version 6 (data analysis software system, 2001), by Stat Soft, Inc.

**Results**

Five hundred and twenty two patients were included in this study: 295 (57%) men and 227 (43%) women, mean age 55 ± 18, SD, years; 285 (55%) were in-patients, 237 (45%) out-patients. UGE was performed for the first time in 50% of the patients; 34% of the patients were referred by gastroenterologists.

**EPAGE criteria: applicability and assessment of appropriateness of indication for UGE**

EPAGE criteria were applicable to 369/522 (71%) patients. In 153 (29%) cases EPAGE was not applicable because the indication for UGE did not correspond to any of the 10 defined clinical situations (table I). In the EPAGE applicable group of 369 patients: 229 (62%) indications for UGE were classified as appropriate, 98 (27%) as inappropriate and 42 (11%) as uncertain. Patients in the appropriate group (mean age 60 ± 16, SD, years) were significantly older than those in the inappropriate and uncertain group (mean age 45 ± 18, SD, years) respectively. The appropriate group included significantly more hospitalised patients than the other two (\( P = 0.00002 \)). Within the 369 patients classified, using EPAGE criteria, into appropriate (229 patients), inappropriate (98 patients) and uncertain (42 patients) indications the most frequent indications for UGE were: uncomplicated dyspepsia in 35% of cases, alarm symptoms in 26%, symptoms suggesting gastroesophageal reflux disease in 17%, miscellaneous indications in 14%, risk factors and pre-malignant conditions in 3%, atypical chest pain in 2% and surveillance of known Barrett’s esophagus in 2%. Alarm symptoms and miscellaneous indications were significantly more frequent in the inappropriate group than in the appropriate group (\( P = 0.000001 \) and \( P = 0.00002 \) respectively). In the inappropriate group, uncomplicated dyspepsia and symptoms suggesting gastroesophageal reflux disease (without alarm symptoms and without Barrett’s esophagus) were the most frequent indications for UGE and were significantly more frequent than in the appropriate group (\( P = 0.00003 \) and \( P = 0.00004 \) respectively).

**Actual endoscopical findings in the group of patients with applicable EPAGE criteria**

Among the 369 endoscopies performed in the group of patients in whom EPAGE criteria were applicable, clinically significant lesions were disclosed in 41% of patients and clinically non-significant findings were evidenced in 59% of patients. Normal endoscopies, clinically non-significant lesions, clinically significant non-neoplastic lesions and cancer were observed in 23%, 36%, 39% and 2% of patients respectively.

Seventy four per cent of clinically significant lesions were found in the appropriate group of indications while 16% and 10% were found in the groups of inappropriate and uncertain indications respectively. Globally, there were significantly more clinically significant lesions in the appropriate group than in the inappropriate one (\( P < 0.001 \)) (table III). All cancers were found (6 esophageal and 3 gastric) in the appropriate group. Erosive esophagitis and esophageal varices were significantly more frequent in the appropriate group than in the inappropriate one (\( P = 0.03 \) and \( P = 0.02 \) respectively). Although other clinically significant lesions were more frequent in the appropriate group than in the inappropriate one, the difference was not significant (table II). It is worthy to notice that 24% of patients (i.e. 24 patients) in the group of 98 patients classified as having inappropriate indication for UGE had clinically significant endoscopical lesions. However there were significantly more normal examinations and non-erosive gastritis in the inappropriate group than in the appropriate one (\( P = 0.04 \) and \( P = 0.02 \) respectively) (table II).

**ANAES criteria: applicability and assessment of appropriateness of indication for UGE**

ANAES criteria were applicable to 421/522 (81%) patients. In 101 (19%) of cases, ANAES criteria were inapplicable because the indications for UGE did not correspond to any of the 10 defined clinical situations (table I). In the ANAES applicable group of 421 patients: 310 (74%) indications for UGE were classified as appropriate and 111 (26%) as inappropriate. There is no uncertain indication for ANAES. In the appropriate group, patients (mean age 59 ± 18, 1 SD, years) were significantly older than those in the inappropriate one (mean age 44 ± 15, 1 SD, years) (\( P = 0.00001 \)). The appropriate group included significantly more hospitalized patients than the inappropriate one (\( P = 0.01 \)). Among the 421 patients with applicable ANAES criteria (310 patients classified as having appropriate indication and 111 patients classified as having inappropriate indication), the most frequent indications for UGE were: uncomplicated dyspepsia in 29% of cases, symptoms suggesting gastroesophageal reflux in 17%, portal hypertension in 14%, dyspha gia and/or odynophagia in 10%, peptic ulcer in 10%, chronic anemia and/or iron deficiency in 9%, acute gastrointestinal bleeding in 7%, Barrett’s esophagus in 2%, duodenal biopsy in 2% and persistent isolated nausea or vomiting in 1%. Patients with isolated dysphagia and/or odynophagia (43 cases), patients with acute gastrointestinal bleeding originating in the upper gastrointestinal tract (UGIT) (29 cases) and patients justifying duodenal biopsies (10 cases) pertained only to the group of patients classified as appropriate indications for UGE. Symptoms suggesting gastroesophageal reflux, chronic anemia and/or iron deficiency were significantly more frequent indications for UGE in the inappropriate group than in the appropriate one: \( P = 0.02 \) and \( P = 0.03 \) respectively.
These patients representing 41 cases did not satisfy indeed qualifying criteria (table I) such as: critical age-threshold, alarm symptoms existence, no previous inconclusive colonoscopy in patients with anemia, no adequate timing when UGE was prescribed for management monitoring.

Actual endoscopical findings in the group of patients with applicable indications according to ANAES criteria

Among the 421 endoscopies performed in the group of patients in whom ANAES criteria were applicable, 45% of all evidenced lesions were clinically significant and 55% clinically non-significant.

Normal findings, clinically non-significant lesions, clinically significant non-neoplastic lesions and cancer were observed in 21%, 34%, 43% and 2% of patients respectively.

There were significantly more normal examinations in the inappropriate group than in the appropriate one (P = 0.03) (table II).

Seventy six per cent of clinic ally significant endoscopic lesions were found in the appropriate group of indications (i.e. in 145/190 patients), while 45 patients of the inappropriate group...
of indications only had clinically significant endoscopic lesions, i.e. 24% of the 190 patients (table III). In this later group of patients 24% of clinically significant lesions were thus disclosed. All cancers found (9 cases) belonged to the appropriate group of indications. Other clinically significant lesions were more frequent in the appropriate group of indications than in the inappropriate one. The percentages of all clinically significant lesions in the appropriate and inappropriate groups of indications were not significantly different \((P = 0.26)\).

### Comparison of assessments of indications for UGE according to EPAGE criteria versus ANAES'ones

Only 3% of EPAGE appropriate indications were classified as inappropriate by ANAES: they concerned 7 patients; 6 had symptoms of gastroesophageal reflux without alarm symptoms and were less than 50 years of age, the last one (less than 45 year-old) had uncomplicated dyspepsia without alarm symptoms and treatment. Ninety two per cent of EPAGE appropriate indications were also classified as appropriate by ANAES (figure 1). ANAES criteria were not applicable in 11 patients (5% of cases), predominantly HIV carriers. Eighty six per cent (36 patients) of the 42 patients classified according to EPAGE criteria as uncertain indications were categorized as appropriate indications for UGE according to ANAES criteria. For the remaining 6 patients of this uncertain indication group one (2%) was assessed as inappropriate indication by ANAES while ANAES criteria were not applicable to 5 patients (12%).

Among 98 patients with inappropriate indication according to EPAGE criteria, 25 patients were classified as having an appropriate indication by ANAES. Sixty six patients of EPAGE inappropriate indications were also judged inappropriate by ANAES and in the 7 remaining patients (7%), ANAES criteria were not applicable (figure 1).

Prevalences of clinically significant endoscopic findings were similar in the groups classified as appropriate or inappropriate indication for UGE whatever the referential used, however the number of patients that could benefit of referential application is larger when ANAES qualifying criteria set is applied: 145 patients versus 113 (table III).

### Discussion

Nowadays UGE is the most reliable method for the investigation of UGIT [1]. Unfortunately potential risks of complications
(including death) still exist, particularly when intra-venous sedation is used [3]. The economical burden of endoscopy steadily increases for Gastroenterology Units inducing a real economical challenge for third-party payers. Therefore indications for UGE have to be well defined. For more than 20 years, concerns for the appropriateness of indications for UGE led to the proposal of guidelines by scientific societies of digestive endoscopy or gastroenterology in Great Britain, in the USA, in Switzerland and more recently in France. A variable rate of appropriate use of UGE has been reported in various studies: 72% in USA [20], 69% in UK [21], 72% in Italy [22], 57% and 46% in Switzerland [19, 23], 88% in Malaysia [24].

It must be emphasized that the present study was not intended to delineate recommendations for a proper selection of UGE. The later aim would have entailed a totally different methodology. Our study merely aimed at evaluating the already available tools that could be of help to the Practitioner. To be useful to the Practitioner, guidelines have to respond to several requirements: a/ be easily applicable to the largest number of clinical situations, b/ give optimal chance of finding anatomical lesions, and c/ offer the greatest opportunity of detecting lesions that have diagnostic and/or therapeutic clinical relevance.

The present study performed over a six-month period evaluated prospectively and simultaneously in the same patients the guidelines proposed by EPAGE and ANAES working groups. In this series of 522 UGE examinations performed in the Endoscopy Unit of the Department of Hepatogastroenterology at Bichat-Claude Bernard University Hospital in Paris, the EPAGE and the ANAES criteria were applicable in 71% and 81% of indications respectively (P = 0.001). According to ANAES criteria, indications such as search for portal hypertension, iron deficiency anemia without previous colonoscopy, upper abdominal pain lasting less than four weeks, persistent isolated nausea or vomiting (from more than 48 hours), duodenal biopsy, evaluation of esophageal varices (untreated) were classified as good indications for UGE although EPAGE criteria were not applicable to these clinical situations (table IV). It is to note that signs of portal hypertension were found in 57% of examined patients when the indication for UGE was the detection of portal hypertension. In cases of chronic anemia and/or iron deficiency and for peptic ulcer, indications for UGE according to ANAES criteria are less restrictive than those established by EPAGE: ANAES criteria indeed are applicable to very old patients, patients with concomitant diseases and patients with typical or atypical symptoms of peptic ulcer. For other indications such as: suspicion of upper gastrointestinal bleeding without blood exteriorisation, patient’s pre-operative evaluation, therapeutics endoscopies and search for a primary tumor in patients with metastases, neither set of criteria was applicable (table IV).

ANAES qualifying recommendations do not concern patients with HIV; patients with HIV accounted for 22% of clinical situations where ANAES criteria were not applicable (table IV). This high percentage is due to the large number of HIV positive patients in Bichat University Hospital. It is thus highly probable that applicability of ANAES criteria would be significantly higher in the Endoscopy Units of regional non-university hospitals not caring for such patients and in non-hospital medical practice (personal data).

An analysis of the percentages of appropriate indications for UGE within groups of patients in whom both EPAGE and ANAES criteria were applicable indicates a higher rate of appropriateness in the ANAES group: 74% versus 62% for EPAGE. This probably results from the higher applicability rate of ANAES criteria in clinical practice and from the absence of the uncertain qualifying group in the ANAES classification of indications.

As shown in figure 1, when applying ANAES criteria to the pool of patients who, according to EPAGE criteria, belong to the

Table IV. – Causes of non applicable indications for UGE whether EPAGE or ANAES qualifying criteria sets were applied.

<table>
<thead>
<tr>
<th>No</th>
<th>EPAGE not applicable indications</th>
<th>No of cases</th>
<th>%</th>
<th>ANAES not applicable indications</th>
<th>No of cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Search for portal hypertension</td>
<td>30</td>
<td>20%</td>
<td>Patients with HIV</td>
<td>22</td>
<td>22%</td>
</tr>
<tr>
<td>2</td>
<td>Suspicion of GI bleeding without blood exteriorisation</td>
<td>23</td>
<td>15%</td>
<td>Suspicion of GI bleeding without blood exteriorisation *</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>Iron-deficiency anemia without colonoscopy before UGE</td>
<td>21</td>
<td>14%</td>
<td>Pre-operative evaluation</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>4</td>
<td>Pre-operative evaluation</td>
<td>15</td>
<td>10%</td>
<td>Therapeutics endoscopies *</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>5</td>
<td>Upper abdominal pain (during &lt; 4 weeks)</td>
<td>14</td>
<td>9%</td>
<td>Search for primary tumour in patients with metastases</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>6</td>
<td>Therapeutics endoscopies</td>
<td>13</td>
<td>8%</td>
<td>Suspicion malignant lesion in an imaging study</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>7</td>
<td>Evaluation of oesophageal varices (not treated)</td>
<td>6</td>
<td>4%</td>
<td>Atrophic gastritis</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>8</td>
<td>Search for primary tumour in patients with metastases</td>
<td>4</td>
<td>3%</td>
<td>Status post gastrectomy</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>9</td>
<td>Others</td>
<td>27</td>
<td>18%</td>
<td>Others</td>
<td>18</td>
<td>18%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>153</td>
<td>100%</td>
<td>Total</td>
<td>101</td>
<td>100%</td>
</tr>
</tbody>
</table>

* the remaining cases belong to the group of patients with HIV.
appropriate and to the uncertain groups together with patients for whom EPAGE criteria were inapplicable, 99 patients were classified as having an appropriate indication for UGE. In the group of patients with appropriate indications for UGE according to EPAGE criteria, only 7 patients (3%) were found to have an inappropriate indication for UGE by ANAES. Among these 7 patients, there were one patient aged 44 years with untreated dyspepsia and 6 patients aged less than 50 years with untreated symptoms of gastroesophageal reflux disease and without alarm symptoms.

According to EPAGE criteria set, the probability of finding any clinically significant lesions was significantly much higher in the appropriate group than in the inappropriate one. Conversely, the probability of finding clinically non-significant lesions or to have a normal endoscopy was significantly greater in the inappropriate group. When considering each lesion separately, a significant difference was found only for erosive esophagitis and esophageal varices which were more frequent in the appropriate group and for non-erosive gastritis more frequent in the inappropriate group.

Among the 369 patients in whom EPAGE criteria were applicable, indications for UGE was appropriate in 62% of cases. This percentage is very close to that obtained by Froehlich et al., one member of the EPAGE Panel [19]. Indeed in this study, among 536 in-patients, indications for UGE were reported as appropriate for 65% of patients from district hospitals and for 67% of patients from university hospitals [19].

In the appropriate group of indications according to ANAES criteria, the probability of finding clinically significant lesions was only slightly higher than in the inappropriate one without any significant difference between the two groups. There was neither any significant difference in the prevalence of clinically non-significant lesions between the appropriate and inappropriate groups although absolutely normal endoscopic examinations were significantly more frequent in patients with inappropriate indications for UGE.

Classification of indications for UGE into appropriate and inappropriate, thus, results in a relatively greater probability of discovering clinically significant lesions when applying EPAGE criteria than ANAES ones. It must be emphasized, however, that all cancers were detected in patients belonging to the appropriate category of indications for UGE whatever the referential used.

Both Froehlich’s [19] and our study reported that the diagnostic yield of UGE was significantly influenced by the appropriateness of indication for UGE, patient’s age, clinical setting and symptoms.

EPAGE panel and ANAES working group have elaborated their set of qualifying criteria to help the Practitioner to optimally prescribe UGE with a dual global objective: reduction of inappropriate prescriptions (overuse) and, on the contrary, no exclusion of patients susceptible to benefit from UGE (underuse).

Results of this prospective study in a single endoscopic centre indicate that in the setting of an university hospital, patients classified as appropriate indication for UGE according to both EPAGE and ANAES set of criteria, are those having the majority of the most severe lesions of the UGIT, especially all cancers. This findings must be emphasized.

It should be kept in mind, however, that whatever the set of qualifying criteria used, there remains a substantial proportion of patients who harbour clinically significant lesions in spite of being classified as having inappropriate indication for UGE. This clearly indicates that patient’s medical history and examination, clinical knowledge and experience of the practitioner caring for the patient remain essential for a proper indication selection as recalled in the welcome message of the EPAGE Panel website [25] and by Vallot from our group [26].

In conclusion, both EPAGE and ANAES criteria sets are interesting educative tools to improve patients’ selection for UGE. ANAES referential was significantly more often applicable than EPAGE one. There was a high consistency between EPAGE and ANAES assessments of appropriateness of UGE indications. Patients in the appropriate group according to both EPAGE and ANAES criteria sets were significantly older than those in the inappropriate group and were more often hospitalized. Only when applying EPAGE criteria were there significantly more clinically significant lesions in the appropriate group than in the inappropriate one. However, all cancers and the most severe lesions were found in the appropriate group whatever the referential used. Clinically significantly lesions are observed in a substantial proportion of patients with inappropriate and uncertain indications for UGE. Referral to qualifying criteria such as those proposed by the EPAGE panel and the ANAES working group, although helpful for patients’ selection for UGE does not preclude the recourse to an experienced specialist.

The choice between EPAGE or ANAES referentials will also depend upon the elected priority of the Practitioner: larger applicability (ANAES) or greater efficacy at disclosing clinically significant endoscopic lesions (EPAGE).

REFERENCES


