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Five common errors to avoid in clinical practice: the Italian Association of Hospital Gastroenterologists and Endoscopists (AIGO) Choosing Wisely Campaign

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Abstract

Modern medicine provides almost infinite diagnostic and therapeutic possibilities if compared to the past. As a result, patients undergo a multiplication of tests and therapies, which in turn may trigger further tests, often based on physicians' attitudes or beliefs, which are not always evidence-based. The Italian Association of Hospital Gastroenterologists and Endoscopists (AIGO) adhered to the Choosing Wisely Campaign to promote an informed, evidence-based approach to gastroenterological problems. The aim of this article is to report the five recommendations of the AIGO Choosing Wisely Campaign, and the process used to develop them. The AIGO members' suggestions regarding inappropriate practices/interventions were collected. One hundred and twenty-one items were identified. Among these, five items were selected and five recommendations were developed. The five recommendations developed were: (1) Do not request a fecal occult blood test outside the colorectal cancer screening programme; (2) Do not repeat surveillance colonoscopy for polyps, after a quality colonoscopy, before the interval suggested by the gastroenterologist on the colonoscopy report, or based on the polyp histology report; (3) Do not repeat esophagogastroduodenoscopy in patients with reflux symptoms, with or without hiatal hernia, in the absence of different symptoms or alarm symptoms; (4) Do not repeat abdominal ultrasound in asymptomatic patients with small hepatic haemangiomas (diameter < 3 cm) once the diagnosis has been established conclusively; (5) Do not routinely prescribe proton pump inhibitors within the context of steroid use or long-term in patients with functional dyspepsia. AIGO adhered to the Choosing Wisely Campaign and developed five recommendations. Further studies are needed to assess the impact of these recommendations in clinical practice with regards to clinical outcome and cost-effectiveness.

Keywords Appropriateness · Choosing wisely · Overdiagnosis · Overtreatment · Recommendations

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Introduction

The technical development of medicine over the last decades has led to a massive increase of the medical procedures available to physicians to investigate and treat their patients. On the one hand this has led to a definite improvement of the care we can provide for many diseases if compared to the past (e.g., cancer care, chronic diseases). On the other hand, however, the almost infinite possibilities modern medicine provides, has led to a multiplication of diagnostic tests ordered, and therapies prescribed.

But are we really sure that, by doing more, we are providing a better care to our patients?

A typical example is the many adjunctive diagnostic tests ordered for incidentalomas, which are often useless, not having an impact on patients' outcomes [1, 2].

Another change occurring red over the last past few decades has been a deep modification in the doctor–patient relationship, which has turned from a paternalistic relationship, to an informed conversation among equals. In fact, nowadays physicians deal with well informed patients, who use multiple modalities such as the internet, the social media and the press to get information about their disease, and the tests and therapies available. As a result, the clinical pathway is discussed and agreed upon between the doctor and his/her patients. In this shared doctor-patient conversation, the debate on appropriateness plays a key role.

In 2013, the British Medical Journal targeted this issue with a campaign called "too much medicine", which raised the problem of "overdiagnosis" and "overtreatment". The campaign aimed at increasing awareness among healthcare professionals and the general public over the increasing risk of pursuing unnecessary cares and its economic implications (https://www.bmj.com/too-much-medicine). In the following years, initiatives aimed at targeting the topics of appropriateness and the doctor-patient relationship have become increasingly widespread among the scientific community, the most famous being the Choosing Wisely Campaign. This Campaign, first launched by the American Board of Internal Medicine Foundation in 2012, is aimed at promoting a discussion between physicians and patients on the grounds of evidence-based clinical practices, to ensure the avoidance of unnecessary tests, treatments and procedures, and to promote high-quality care, avoiding overuse, waste and potential harm to patients [3]. Many national and international medical associations have joined the Choosing Wisely Campaign over the years, producing recommendations aimed at changing inappropriate, but still consolidated, care patterns and providing high-quality, cost-effective and evidence-based care [4–13].

The Italian Association of Hospital Gastroenterologists and Endoscopists (AIGO) decided to join the Choosing Wisely Campaign.

The aim of this study is to report the five recommendations of the Italian Association of Hospital Gastroenterologists and Endoscopists (AIGO) Choosing Wisely Campaign, and the process used to develop them.

Methods

The Italian Association of Hospital Gastroenterologists and Endoscopists (AIGO) is a professional association for gastroenterologists. Founded in 1869, AIGO has grown to include over 1100 members from all around over Italy who work as gastroenterologists and/or endoscopists in a hospital setting. AIGO promotes up-to-date practice, research, and educational programs, and provides grants and several educational activities (e.g., meetings, courses, and master's degrees) for its members.

When adhering to the Choosing Wisely Campaign, AIGO created a working group, including eight members with an interest in the topic of appropriateness and evidence-based practice.

In September 2016, the working group sent an email to 500 randomly selected AIGO members, asking for their priority list of the top 5 inappropriate practices/interventions routinely used in clinical practice. The items collected were grouped into nine thematic areas, which were subsequently assigned to members of the working group for review of the evidence. A systematic review of the literature was performed for each topic searching PubMed, EMBASE and Cochrane databases, with a special focus on randomized controlled trials and international guidelines. The items were then discussed in a round table, which included the eight working group members and three senior AIGO members. The eleven members of the round table were requested to rank the items on a 0–10 scale for their perceived priority and clinical relevance (0 = no relevance, 10 = maximum relevance). The twenty items receiving the highest score were then discussed singularly during the round table.

As a result, five items were selected on the basis of a combination of frequency (number of members reporting the same item), strength of scientific evidence supporting the item and diffusion in medical practice (common inappropriate procedures were preferred to rare or less common ones). The weight assigned to each of the abovementioned parameters in the selection process was 30% for frequency, 40% for strength of evidence behind the item and 30% for diffusion in medical practice. The working group then reviewed the evidence behind each item again, selecting and comparing strength of evidence among the different items using the following levels: I evidence from meta-analysis or

randomized controlled trials; II evidence from controlled studies without randomization; III evidence from descriptive studies (comparative, correlation and case–control studies); IV evidence from expert committee or other authorities. Following review of evidence the working group confirmed the choice of the items. On the basis of the five selected items 5 recommendations were developed.

Due to the nature of the campaign no Ethics al Committee was involved required in the study.

Results

Twenty-four percent (124) of the 500 invited AIGO members answered the survey within the requested time range (September–October 2016). All these members are physicians working in clinical, hospital-based settings, with a mean age of 51 years. One hundred and twenty-one items were collected. Subsequently, the items collected were grouped into 9 thematic areas, which are shown in Table 1.

On the basis of round table discussion and following review of the literature of the selected items, the working group developed the following five recommendations: (1) Do not request a fecal occult blood test outside the colorectal cancer screening programme; (2) Do not repeat surveillance colonoscopy for polyps, after a quality colonoscopy, before the interval suggested by the gastroenterologist on the colonoscopy report, or based on polyp histology report; (3) Do not repeat esophagogastroduodenoscopy in patients with reflux symptoms, with or without hiatal hernia, in the absence of different symptoms or alarms symptoms; (4) Do not repeat abdominal ultrasound in asymptomatic patients with small hepatic haemangiomas (diameter < 3 cm) once the diagnosis has been established conclusively; (5) Do not routinely prescribe proton pump inhibitors within the context of steroid use or long-term in patients with functional dyspepsia. Table 2 shows the five recommendations developed based on the identified items.

Table 1 Thematic areas of inappropriate practices/interventions routinely used in clinical practice reported by AIGO members, in order of frequency (number of items)

1—Indication to colonoscopy (35)
2—Indication to esophagogastroduodenoscopy (35)
3—Proton pump inhibitors (13)
4—Use of fecal occult blood test (8)
5—Indication to abdominal ultrasound (8)
6—Screening and surveillance of celiac disease (6)
7—Management of diverticular Disease (6)
8—Monitoring of chronic C hepatitis (4)
9—Miscellanea (management of percutaneous endoscopic gastrostomy, indication to endoscopic retrograde cholangio-pancreatography and endoscopic ultrasonography, use of video capsule endoscopy, irritable bowel syndrome, use of beta-blockers in cirrhosis) (6)

1. Do not request a fecal occult blood test (FOBT) outside the colorectal cancer screening programme

The screening of individuals aged 50 years or older at average risk can reduce death from colorectal cancer (CRC) by 20–30% [14]. Stool-based tests, i.e., fecal occult blood test (FOBT) and fecal immunochemical testing (FIT), are appropriate for screening purposes thanks to their diagnostic accuracy and their non-invasiveness [15].

Up to 26–35% of screening FOBTs are ordered inappropriately, mainly for three reasons: individuals not due for testing (outside the age criteria); subjects with life-limiting comorbidities (that are unlikely to benefit from CRC screening as the life expectancy is less than 10 years); people with a family history of CRC (who should undergo direct colonoscopy) [16, 17]. Inappropriate FOBTs increase the rate of inappropriate colonoscopies with a subsequent increase in healthcare costs and exposure to the risk of endoscopic complications.

It is noteworthy that FOBT is not a diagnostic test, and should, therefore, not be performed in symptomatic subjects. Nevertheless, FOBT is often misused in multiple contexts such as anemia (13–36%), iron deficiency with or without anemia (8–30%), overt gastrointestinal bleeding (5–26%), non-bloody diarrhea (5–10%), abdominal pain (14%) and change in bowel habits (10%) [18–22]. In these symptomatic

Table 2 Choosing Wisely Campaign—the five recommendations of the Italian Association of Hospital Gastroenterologists and Endoscopists (AIGO)

1—Do not request a fecal occult blood test outside the colorectal cancer screening programme
2—Do not repeat surveillance colonoscopy for polyps, after a quality colonoscopy, before the interval suggested by the gastroenterologist on the colonoscopy report, or based on the polyp histology report
3—Do not repeat esophagogastroduodenoscopy in patients with reflux symptoms, with or without hiatal hernia, in the absence of different symptoms or alarm symptoms
4—Do not repeat abdominal ultrasound in asymptomatic patients with small hepatic haemangiomas (diameter < 3 cm) once the diagnosis has been established conclusively
5—Do not routinely prescribe proton pump inhibitors within the context of steroid use or long-term in patients with functional dyspepsia

individuals, FOBT postpones the necessary endoscopic investigations, leading to diagnostic delays and increasing costs due to inappropriate tests [18, 21].

In conclusion, FOBT is a screening tool, and should be reserved for asymptomatic subjects within the average risk cohort identified by the national or regional colorectal screening programmes.

2. Do not repeat surveillance colonoscopy for polyps, after a quality colonoscopy, before the interval suggested by the gastroenterologist on the colonoscopy report, or based on the polyp histology report

CRC through colonoscopy has demonstrated a reduction in the incidence and mortality of CRC [23]. Epidemiological series indicate that patients who are not entered in a post-polypectomy colonoscopy surveillance programme have a three- to fourfold increased risk of developing CRC [24, 25].

The indication for surveillance colonoscopy depends on the results of the index colonoscopy referring to current evidence-based guidelines [26–28]. These guidelines provide detailed and motivated interval recommendations by dividing patients into different risk classes based on the relative risk of developing colorectal cancer or subsequent adenomas. The exact timing of surveillance within the interval indicated by the guidelines is established by the gastroenterologist in charge of the procedure based on previous findings, the quality of the index colonoscopy, family history and their own clinical judgement.

In a prospective, multicentre study including 29 Italian endoscopic units, among the determinants of a correct post-polypectomy surveillance timing there was the practice of providing a written recommendation on surveillance intervals (OR 1.70; 1.18–2.58 95% CI) [29]. The routine adoption of the simple practice of stating in written form and signing the recommended timing of surveillance could very well encourage a correct and cost-efficient use of health resources, and should, therefore, be implemented.

A shorter colonoscopy surveillance interval for patients with low-risk colorectal adenomas places a considerable burden on available resources, and has implications on health assistance quality measures such as waiting lists [30].

Anderson and colleagues addressed the factors associated with shorter colonoscopy surveillance intervals for patients with low-risk adenomas and their effects on patient outcomes in a study on 1560 patients with at least one adenoma at index colonoscopy [31]. The authors found find no significant differences between a shorter interval and the recommended interval groups in proportions of subjects found to have one or more adenomas (38.8% vs 41.7%, respectively; $P = 0.27$), advanced adenomas (7.7% vs 8.2%; $P = 0.73$) or clinically significant serrated polyps (10.0% vs 10.3%; $P = 0.82$) at the follow-up colonoscopy. Their findings support the current guideline recommendation of performing surveillance colonoscopy following low risk adenomas at least 5 years after the index colonoscopy [31]. A modeling study investigates d, the appropriateness of more intensive colonoscopy screening than that recommended by guidelines [32]. The Authors concluded that shorter colonoscopy intervals resulted in only small increases in colorectal cancer deaths prevented and life-years gained. In comparison, colonoscopy-related complications experienced were greater, resulting in a loss of quality-adjusted life-years (QALYs) gained (measure of net health benefit) [32]. Moreover, a diagnostic colonoscopy carries a 2.8 per 1000 risk of procedure-related complications [33], the most common being bowel perforation, bleeding and infection, and a mortality rate of 0.03%, which are relevant rates when dealing with a non-appropriate examination [34].

In conclusion, the recommended interval for surveillance colonoscopy should be indicated by the gastroenterologist, written in full and signed. This should be done either on the endoscopy report or subsequently, after polyp histology results, so that the indication is clear for present or future reference both to the patient and to the patient's general practitioner. The practice of performing surveillance colonoscopy before the indicated interval should be strongly discouraged.

3. Do not repeat esophagogastroduodenoscopy (EGDS) in patients with reflux symptoms, with or without hiatal hernia, in the absence of different symptoms or alarm symptoms

Gastroesophageal reflux disease (GERD) is a clinical condition resulting from the reflux of gastric contents into the esophagus or beyond, into the oral cavity (including larynx) or lungs. Symptoms typically include heartburn and regurgitation, but can also involve the respiratory tract (dry cough, hoarseness) and the cardiovascular system (extrasystoles or other dysrhythmias). A minority of patients develop reflux-related complications such as erosive esophagitis and Barrett's esophagus (BE) [35]. The prevalence of GERD in the United States is estimated to be 18–28% [36], and 10–20% in the Western world, with a lower prevalence in Asia [37]. The diagnosis of GERD can be based on symptoms, and confirmed by a favourable response to antisecretory medical therapy [38]. Upper endoscopy is not required in the presence of typical GERD symptoms without alarm symptoms such as anemia, family history of upper gastrointestinal cancer, age over 45 years, unintentional weight loss, abdominal mass or bleeding, and dysphagia [39]. Endoscopy at presentation should be considered in patients with alarm symptoms, and patients with multiple risk factors for BE, including age over 45, male sex, gender, white race, a family history of BE or esophageal adenocarcinoma, prolonged

reflux symptoms, smoking, and obesity [40, 41]. Patients with GERD who fail to respond to appropriate antisecretory medical therapy should be evaluated with EGDS and possible diagnostic integration with other diagnostic modalities, including esophageal manometry, pH monitoring and/or multichannel impedance testing [42]. The routine use of EGDS in patients with uncomplicated GERD who are responsive to medical therapy is not recommended as it does not affect the management of patients [39, 43]. Follow-up EGDS for patients with GERD and esophagitis should be reserved for patients whose symptoms fail to respond to medical therapy, those with severe esophagitis or esophageal ulcer, or for those who need to be screened for BE due to erosive esophagitis at index EGDS possibly impairing the accurate histopathologic detection of BE and dysplasia [44]. In conclusion, repeat endoscopy is not indicated in patients with GERD in the absence of different symptoms or alarm symptoms.

4. Do not repeat abdominal ultrasound in asymptomatic patients with small hepatic haemangiomas (diameter < 3 cm) once the diagnosis has been established conclusively

Hepatic haemangiomas are the most common primary benign liver tumours. The prevalence is generally estimated to be around 5% in imaging series, but has been reported to be as high as 20% in autopsy series [45–47]. They are most often incidental findings, and are considered clinically silent entities that require no further intervention or follow-up [47–50]. Hepatic haemangiomas are frequently small and solitary, although they can reach 20 cm in diameter. Even in the case of large lesions, most patients are asymptomatic. Size may change during long term follow-up, but those less than 3 cm in diameter have an irrelevant annual growth rate compared with haemangiomas 5 cm or more in initial diameter [51]. The ultrasound appearance of typical haemangioma is that of a homogenous hyperechoic mass, measuring less than 3 cm in diameter with acoustic enhancement and sharp margins. Contrast enhancement imaging (CEUS, CT or MRI) is required when ultrasound appearance is atypical. In conclusion, due to its benign nature, imaging follow-up is not required for typical haemangioma [52, 53].

5. Do not routinely prescribe proton pump inhibitors within the context of steroid use or long-term in patients with functional dyspepsia

PPIs are among the most widely prescribed drugs. However, over one-third of PPI prescriptions are not associated with an appropriate or documented indication [54].

The role of corticosteroids in the development of GI toxicity in patients without additional risk factors such as non-steroidal anti-inflammatory drugs (NSAIDs) is controversial, and the benefits of acid suppression in this group have not been established [54, 55]. No published studies have ruled out whether or not PPI therapy has a protective effect among corticosteroid users, and a recent review failed to show any significant risk for peptic ulcers in patients receiving corticosteroid treatment compared to controls [56].

The administration of PPIs is appropriate in corticosteroid users with a history of peptic ulcers (PU), concomitant NSAID or anti-platelet therapy [54, 57]. In fact, these associations are known to increase the risk of upper GI complications such as gastroduodenal ulcerations/erosions, overt/occult bleeding, and, rarely, perforation. [55, 57].

Another common inappropriate practice is the long-term prescription of PPIs in functional dyspepsia (FD). According to Rome IV criteria, FD is a condition characterized by one or more symptoms related to the central upper part of the abdomen unexplained after a routine clinical evaluation and significantly impacting on daily activities [58]. PPIs are effective when overlapping reflux symptoms are present, such as in epigastric pain syndrome (EPS), while no significant benefit occurs in dyspeptic patients with postprandial distress syndrome (PDS) characterized by nausea, early satiety, postprandial fullness and bloating [59].

In young (< 50 years) dyspeptic patients without alarm symptoms, the research and eradication of *H. pylori* infection is the first line approach [54, 57, 60]. If symptoms persist despite successful eradication, or in *H. pylori* negative patients with EPS, a short-term 4–8 week PPI treatment should be attempted [54, 57]. Current guidelines recommend the use of a short, low-dose course avoiding a chronic and expensive treatment [43, 60]. After clinical response to PPIs, a tapering strategy is recommended to avoid rebound acid hypersecretion [54]. If rebound symptoms occur, antacids or alginate-containing formulations may be used or a short-term PPI re-treatment can be prescribed [54, 59].

PPIs are generally well tolerated and have few side effects, but their prolonged use has been associated with various problems due the extensive and persistent inhibition of gastric acid secretion and the competitive inhibition of hepatic cytochrome P450 [54, 56]. Therefore, patients with no clinical indications are unnecessarily exposed to the potential risks of long-term PPI only, as reported elsewhere [54].

In summary, PPI therapy is not routinely indicated in patients taking corticosteroids, unless they have a history of PU or are on NSAIDs, and for the long-term management of FD.

Discussion

In a world where the paternalistic role of doctors has been substituted for by an informed dialogue between physicians and patients, public education campaigns play a fundamental role in making informed choices. To avoid the risk that such campaigns become unpopular, and are seen as purely cost-cutting initiatives, patients' expectations should be taken into account, and obtaining patients' engagement is imperative [61]. The attitude of reducing inappropriate interventions, avoiding the repetition of tests or procedures already done, and the recommendation of only what is really necessary should be promoted among healthcare professionals, to avoid the risk of losing sight of patients' best interests on the wave of the rapidly developing technology. Having the possibility of performing a procedure or requesting an examination does not necessarily mean that it is right to perform of or request it in the view of patients' final outcome. Doing more does not correspond to doing better in a wide number of clinical contexts.

Modern gastroenterological practice should, therefore, be aimed at optimizing patient care with a rational use of the available resources and involving patients in a shared, evidence-based approach to health problems [62]. In this regard, the Italian Association of Hospital Gastroenterologists and Endoscopists (AIGO) joined the Choosing Wisely Campaign, selecting five items and developing five recommendations aimed at reducing inappropriateness in gastroenterological practice. Two of these were similar to recommendations published by another scientific association, while the remaining three were not included in other campaigns. In particular, the American Gastroenterological Association Choosing Wisely Campaign included a recommendation concerning colonoscopy surveillance for polyps and one regarding long-term PPI treatment (http://www.choosingwisely.org/wp-content/uploads/2015/02/AGA-Choosing-Wisely-List.pdf). Most recommendations developed through the Choosing Wisely Campaign, including the AIGO recommendations, are based on published guidelines, but should not be intended as substitutes for guidelines. In addition, the recommendations are not intended to overrule justified individual decisions.

The document with the five recommendations was published on the AIGO website (http://www.webaigo.it/download/AIGO_170330_CS_choosing_Fismad17.pdf) as well as on the Choosing Wisely Campaign for Italy website (https://www.choosingwiselyitaly.org/PDF/ITAracc/Sched a%20AIGO.pdf). Moreover, AIGO is carrying out a campaign encouraging family doctors to implement the recommendations in their clinical practice.

Moreover, as evidence shows that practice patterns acquired during training strongly influence physicians' ordering behaviour and resource use [63, 64], AIGO is diffusing the document by means of its Young Committee among doctors in specialty training as a key strategic priority, to raise a culture of delivering high-value, cost-conscious care.

Another implication of AIGO commitment in the Choosing Wisely Campaign is the discouragement of a defensive attitude among its members. In fact, the impact of defensive medicine on medical practices has steadily increased in recent years as a result of the dramatic increase in malpractice claims. At times, physicians may find themselves in the situation of ordering tests and procedures not according to their patients' best interest, but primarily to reduce the probability of negligence claims, with a consequent dramatic increase in healthcare costs and in unnecessary medical investigations [65].

A study from one of the largest Italian regions aimed at evaluating the impact of defensive medicine on gastroenterological practices concludes d that defensive medicine has d a major effect on clinical practice and costs, accounting for 11% of all procedure costs. Among the reasons for this there was the increase in medical lawsuits, and, consequently, in insurance premiums [65]. Also in other countries of the developed world, such as Japan, Australia and the USA, there is a global tendency towards a greater use of defensive medicine among specialists, with an explosion in healthcare costs [66, 67]. A report from the US Institute of Medicine states that 30% of healthcare spending is wasteful, and does not have an impact on patients' care [68].

Moreover, the increasing risk of litigation and the consequent implementation of defensive medicine practices are closely associated with the alarmingly high rates of burn-out syndrome, which are a major thereat for the medical class practitioners [69].

In conclusion, AIGO joined the Choosing Wisely Campaign and developed five recommendations, with the aim of reducing unnecessary care and promoting an evidence-based, conscious attitude to resource use. Further studies are needed to assess whether these recommendations are embraced in clinical practice, and whether they have an impact on patients' clinical outcomes and cost-effectiveness of care.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Statement of human and animal rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent None.

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