Dyspepsia Challenge in Primary Care Gastroenterology

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Keywords

Dyspepsia · Primary care · Alarm symptoms

Abstract

Background: The purpose of this review is to take a deep dive into general problems and challenges of diagnosis and treatment of patients with symptoms of dyspepsia in primary care practice. **Summary:** Primary care physicians become acquainted with a broad range of clinical problems and therefore require a wide span of knowledge in taking care of patients from their first medical examination within the health care system. Dyspepsia and *Helicobacter pylori* infection are two of the most frequent reasons of digestive-related health care issues, despite that in primary care practice, current recommendations for diagnosis and differential therapy are often not implemented. The “test-and-treat” strategy is the initial management of the condition, reserving gastroscopy for patients refractory to symptomatic treatment and for patients presenting with any of the following alarm signs: age of above 55, dysphagia, anemia, weight loss, frequent vomiting, family history of GI malignancy, or a physical examination with key pathological findings. **Key Messages:** Examination and treatment of dyspepsia symp-

toms is the diagnostic and therapeutic challenge dictated by organizational and economic potentials of the health system, professional resources, and primary health care capabilities to accept and treat patients with dyspepsia and to properly refer those with alarm symptoms and findings indicative of organic disease to a gastroenterologist.

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Introduction

The purpose of this review is to take a deep dive into general problems and challenges of diagnosis and treatment of patients with symptoms of dyspepsia in primary care practice and evaluate their further transfer to gastroenterology with the aim to make adequate diagnosis of potential serious disease.

Role of the Primary Care

Primary care physicians become acquainted with a broad range of clinical problems and therefore require a wide span of knowledge to take care of patients from their first medical contact within the health care system. That contact is very important and should provide unrestricted-

ed access to health care service, dealing with all health problems despite age, sex, or any other personal differences [1]. Patients in primary care present with nonspecific symptoms and low incidence of serious illness. On that level, it is important to make adequate triage between harmless symptoms and rare, but serious organic diseases. That kind of differentiating constitutes a major challenge for the primary care physicians. Unessential recommendations and diagnostic procedures need to be balanced against the risk of misdiagnosis [2]. Scientific suggestions reveal that noncommunicable disease burden can be significantly reduced if cost-effective preventive and therapeutic actions, alongside preventive procedures and monitoring of noncommunicable diseases which is already available, were to be conducted in an operative and balanced way. Health care service has to elaborate on simple methods for preselection of patients at high risk to allow their implementation in strategies and respect the demand of cost-effectiveness and prevention of false diagnosis and mistakes [3]. General practice has restricted approach to bring out medical examination in determining serious illness [4], but for any symptom, the primary care physician can search for red flags which are warnings of potentially severe underlying disease which requires further medical monitoring and examination [5].

Digestive Diseases and Dyspepsia in General Practice

Digestive diseases such as digestive cancers, liver diseases, inflammatory bowel disease, celiac disease, and functional gastrointestinal disorders (FGIDs), like dyspepsia and irritable bowel syndrome, make a range of widespread health problems in primary care settings [6]. According to the Rome IV criteria, dyspepsia is a condition that significantly influences routine activities of patients and is distinguished by one or more symptoms related to the upper part of the abdomen that stays unexplained after a usual clinical workup [7]. Gastrointestinal (GI) disorders which are in relation to motility changes, visceral hypersensitivity, altered mucosal and immune function, gut-brain axis, and altered central nervous system processing represent the spectrum of FGIDs or disorders of gut-brain interaction. FGIDs correspond to the economic burden of health care systems and significantly reduce quality of life [8, 9]. Dyspepsia in general practice encompasses patients with recurrent epigastric pain, with or without bloating, nausea, or vomiting. In patients with uninvestigated dyspepsia, it is mandatory to manage patients with “reflux-like” symptoms, also [10]. Despite functional dyspepsia being frequent in primary care prac-

tice, current recommendations for diagnosis and differential therapy are often not implemented [11]. Family doctors are often confronted with the clinical picture of dyspepsia in everyday clinical practice. Earlier investigations yielded that approximately 5–7% of patients in a primary care practice have symptoms that are related to dyspepsia [12]. In recent studies in the United Kingdom, Canada, and the USA, approximately 10% of the adult population have dyspepsia according to the Rome IV definition [13–15]. About 20–45% of the world’s population suffers from dyspepsia and accounts for one-quarter of primary care referrals to the gastroenterologist [16]. Main organic causes of dyspepsia are peptic ulcer, gastroesophageal reflux disease, gastric or esophageal cancer, pancreatic or biliary disorders, intolerance to food or drugs, and other infectious or systemic diseases [17].

Helicobacter pylori and Dyspepsia

Dyspepsia and *Helicobacter pylori* infection are two of the most frequent reasons of digestive-related health care problems. The infection with *H. pylori* represents chronic burden of about one-half of the world population [18, 19]. The management of *H. pylori* transferred from gastroenterology to general practice in the last 10 years. In 2017, *H. pylori* infection was classified as a high-priority infectious disease, which needs to be treated [20–22]. In the last 2 decades, there has been more substantial content of references, expert’s literature, guidelines, and consensus conferences on *H. pylori* and dyspepsia diagnosis and treatment that ensure correct recommendations to be applied in general medicine [20, 23–27]. Also the “European Registry on *H. pylori* management” that includes over 21,000 patients from 27 countries supports these efforts and, in this moment, concluded that management of *H. pylori* infection by European gastroenterologists is heterogeneous, suboptimal, and discordant with current recommendations. Only some regimes allow satisfactory eradication rates. Tendency of the European guideline is to slowly and heterogeneously start being incorporated into routine clinical practice, which will be associated with an increase in effectiveness and eradication rate [28].

Dyspeptic Symptoms without Red Flags

It is especially important to make optimal treatment of dyspepsia because of its high prevalence [29]. According to cost benefit analysis, upper endoscopy in younger population without alarm symptoms due to limited budget is unlikely to be an economically adoptable approach in most health care systems. Reliable strategies in patients without red flags for the initial management of uninvestigated dyspepsia are not clear [30].

Table 1. Warning signs in gastroenterology

Dysphagia	Anemia
Persistent vomiting	Weight loss
Age >55 years	Palpable abdominal mass
GI bleeding	Family history of GI malignancy

GI, gastrointestinal.

tigated dyspepsia include (1) testing for *H. pylori* noninvasively and performing upper GI endoscopy in those who test positive, referred to as a “test-and-scope” strategy, (2) testing for *H. pylori* and treating the infection with eradication therapy if present, the so-called “test-and-treat” strategy, and (3) empirical acid-suppression therapy if *H. pylori* testing is negative [30]. Unexamined dyspepsia in young patients requires the “test-and-treat” strategy with noninvasive tests before decision of starting proton pump inhibitor (PPI) therapy or upper endoscopy (OGD), to make cost savings and reduce unpleasantness. The test-and-treat strategy will cure most cases of underlying peptic ulcer disease and prevent most potential cases of gastroduodenal disease, and numerous studies support the increasingly accepted idea that “the only good *H. pylori* is a dead *H. pylori*” [31, 32]. The “test-and-treat” strategy is not advised in regions when risk of stomach cancer is high [33], and then upper endoscopy is required, according to MAPS guidelines which focus on endoscopic surveillance of precancerous lesions including atrophy, IM, and dysplasia, but do not address general population screening. The age of subjects with gastric cancer dictates regional variations [34–36].

Red Flags

Treatment of dyspepsia may be managed in primary care; if red flag signs are present that represent clinical indicators of a possible serious underlying condition, further examination is performed on the next health care level. According to Maastricht V recommendation, the “test-and-treat” strategy is the initial management of the condition, reserving gastroscopy for patients refractory to symptomatic treatment and for patients who present any of the following alarm signs: over the age of 55 years, dysphagia, anemia, weight loss, frequent vomiting, family history of GI malignancy, or a physical examination with key pathological findings [20] (Table 1).

Examination of red flags is of the highest priority to ensure precise and adequate decision-making and is subordinate to medical history and clinical presentation de-

pending on the availability of limited investigatory parameters at primary care level. All the red flags do not have an equal diagnostic power [37]. Some alarm symptoms like loss of weight and loss of appetite are general and could be due to many conditions, while hematemesis and melena are specific red flags which indicate gastrointestinal bleeding [38]. All red flags, whether highly diagnostic or not, general or specific, warn us of the possibility for serious conditions. The availability of an early upper endoscopy program in primary care for patients with dyspepsia and red flag signs decreases the number of visits to a gastroenterologist [29]. Some European countries lack this approach to early gastroscopy in general practice, which may lead physicians to send these patients directly to gastroenterologists to be sure to avoid potentially severe condition [39]. Western Europe and North America have age limit from 50 to 55 years which recommends prompt upper endoscopy for uninvestigated dyspepsia [40–43]. Some Eastern European and Asian countries suggest a lower age limit due to higher prevalence of stomach cancer [44].

Limitations of Red Flags

The current recommendation of the American College of Gastroenterology (ACG) and the Canadian Association of Gastroenterology (CAG) is to limit upper GI endoscopy to patients with dyspepsia when aged 60 years or older. In those aged below 60 years, these guidelines suggest to withhold endoscopy even if patients present with alarm symptoms due to the limited predictive value of alarm symptoms for upper GI malignancy [41]. Some studies revealed that even with inclusion of these “high-risk” patients with red flags and performing upper endoscopy, only a total of 0.8% was found to have a (upper) GI cancer diagnosed [45].

Diagnostic and Treatment Approach of Dyspepsia

Ultrasound diagnostics in primary care can significantly contribute to diagnostic evaluation and early treatment of patients with hepatobiliary and pancreatic diseases presenting with symptoms of dyspepsia. The first step after ultrasound and laboratory tests can be in-depth review of medications as a possible cause of dyspepsia (calcium antagonists, nitrates, theophyllines, bisphosphonates, corticosteroids, and nonsteroidal anti-inflammatory drugs) [10]. Treatment of patients who do not respond to the recommended treatment strategies is a challenge for family physicians. Regular visits and psychotherapeutic support in these patients can reduce the level of anxiety and encourage the patient for treatment

Fig. 1. Potential approach to diagnosis and therapy of dyspepsia in primary care and gastroenterology.

of psychological morbidity, as well as his efforts in healthier behavior [46]. Treatment of concurrent mental disorders can improve the symptoms of dyspepsia. Recent research studies suggest improvement in understanding of the complex interaction in biopsychosocial processes that constitute the pathophysiology of FGID which can proceed to designing useful clinical tools for health care practitioners utilizing them in improving assessment and treatment of these disorders [47]. The main aim is to ensure effective physician-patient relationship which can increase patient satisfaction, treatment compliance, reduction of symptoms, and other health benefits [48]. Endoscopic workup in dyspeptic patients without alarm

symptoms which fail symptomatic treatment is plausible, but not generally indicated according to recent guidelines, and treatment is carried out by acid suppression [49]. In patients failing to achieve success in treatment, further endoscopic diagnosis is indicated. Nowadays, we have clear evidence that PPIs are often overused in ambulatory patients. The main reasons for inadequate utilization of PPIs are the prophylaxis of gastroduodenal ulcers in low-risk patients and stress ulcer control in non-intensive care units, steroid and anticoagulant treatment without risk factors, and overtreatment of functional dyspepsia [50]. Potential adverse events of inappropriate use of PPIs may also lead to enteric infections (particularly

Clostridium difficile diarrhea), nutritional deficiencies, community-acquired pneumonia, hip fractures, gastric carcinoids, and also ischemic heart disease, chronic kidney disease, and dementia [51] (Fig. 1).

It is important in the context of functional dyspepsia treatment to give proper lifestyle advice, including advice on healthy eating, reduction of weight, and stopping smoking. Suggesting patients to refrain from precipitant factors such as alcohol, coffee, chocolate, and fatty foods and being overweight is pivotal [10]. Endoscopic diagnostics is in the domain of gastroenterologists, and recent studies report an integrated gastroenterological service and direct referral to endoscopy by a family physician as a form of improving early diagnosis and treatment with additional economic justification. Such organization includes a greater degree of integration and coordination of health services at the primary and secondary health care levels with cost-effectiveness [52].

Conclusion

Examination and treatment of dyspepsia symptoms is an important diagnostic and therapeutic challenge dictated by the organizational and economic potentials of the entire health system, professional resources, and pri-

mary health care capabilities to accept and treat patients with dyspepsia. After successful initial examinations, the important step is referring those with alarm symptoms and findings thus indicating an organic disease to a gastroenterologist. We should also look at the current trends in the settings of COVID-19 pandemic or realize potentially new and similar global health care problems and consider adjustments for optimal and timely diagnosis and adequate treatment of patients with symptoms of dyspepsia that may have serious underlying conditions.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

V. Milivojevic wrote the manuscript; M. N. Krstic reviewed and corrected the manuscript; I. Rankovic and T. Milosavljevic wrote the manuscript section, reviewed, and corrected the manuscript.

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