MEDICINE & PUBLIC HEALTH
e-ISSN 2956-9443

2024, Vol. 2, No. 2
DOI: 10.48269/MandPH-AFMKU-24-2-003
Received: 2024-10-14
Accepted: 2025-06-03

REVIEW PAPER

Diagnosing GERD: A Toolkit for the Modern Clinician

Mateusz Rzucidlo[1,A–F], *Michał Wiktor Kluz*[1,B,D], *Tomasz Kluz*[1,2,E]

[1] Department of Gastroenterology and Hepatology with Internal Medicine Unit, Fryderyk Chopin University Clinical Hospital in Rzeszów

[2] Department of Gynecology, Gynecology Oncology and Obstetrics, Institute of Medical Sciences, Medical College of Rzeszów University

A – Research concept and design, B – Collection and/or assembly of data, C – Data analysis and interpretation, D – Writing the article, E – Critical revision of the article, F – Final approval of the article

Abstract

Background: Gastroesophageal reflux disease (GERD) is a prevalent chronic gastrointestinal disorder causing significant symptoms and complications, with varying prevalence worldwide. It leads to substantial healthcare costs, particularly in the USA. Effective management relies on clear diagnostic evidence from endoscopy or reflux monitoring.
Material and methods: The Montreal Consensus defines GERD based on symptoms and complications. Diagnosis can be complex, requiring various tools. GERD is categorized into esophageal and extra-esophageal syndromes, influencing diagnostic and therapeutic strategies. The Polish Society of Gastroenterology emphasizes history, clinical symptoms, and empirical PPI tests, supported by endoscopy, manometry, and pH monitoring.
Results: Endoscopy is indicated for alarm symptoms or multiple risk factors, identifying hiatal hernias and esophageal inflammation. Manometry evaluates esophageal motor function before anti-reflux surgery, measuring LES pressure to exclude motility disorders. 24-hour pH monitoring with impedance is considered the gold standard in diagnosing GERD.
Conclusions: GERD diagnosis and management need symptom assessment, empirical testing, and specific diagnostics like endoscopy, manometry, and pH monitoring for accurate diagnosis and effective treatment. These approaches ensure tailored management and improved patient outcomes.
Keywords: GERD, reflux disease

Introduction

Gastroesophageal reflux disease (GERD) is a common, chronic condition of the digestive system, characterized by the reflux of the stomach contents into the oesophagus, leading to troublesome symptoms and/or complications. It is estimated that the prevalence of GERD in Europe ranges from 9% to 26%, in the USA it is around 18–28%, while in Asia about 5% of the adult population is affected. The prevalence varies depending on the region and

✉ Mateusz Rzucidlo, email: rzumat@gmail.com

the diagnostic definitions used [1]. GERD and oesophagitis are the second most common cause of outpatient visits after abdominal pain. Annual costs related to GERD in the United States are estimated at 15–20 billion dollars, with more than half of these costs spent on treatment. In the past five years, expenses on acid-suppressing drugs, used for various indications, have been estimated at approximately 60 billion dollars [2]. At the same time, it has been shown that about 30% of individuals using proton pump inhibitors (PPIs) do not have documented indications for their use [3].

Troublesome, typical symptoms of GERD may be sufficient to attempt treatment with acid-suppressing medications, but initial oesophageal examination is recommended for all other categories of symptoms (so-called atypical symptoms) and for patients who do not respond to PPIs, before using invasive GERD treatment methods or long-term pharmacological therapy. The modern approach to GERD management requires clear evidence of reflux-related pathology through endoscopy and/or abnormal reflux monitoring (using values specified by the Lyon Consensus) [4].

Diagnosis

According to the Montreal Consensus, GERD can be diagnosed on the basis of bothersome symptoms that negatively affect the quality of life, such as heartburn or regurgitation, or the presence of GERD complications. In the absence of these symptoms or typical complications, diagnosing GERD becomes complex and involves various diagnostic tools, each with its advantages and disadvantages. The Montreal Consensus distinguishes between oesophageal and extra-oesophageal syndromes of GERD. Oesophageal syndromes are further divided into symptomatic syndromes (where typical GERD symptoms occur) and syndromes associated with oesophageal injury (oesophagitis, Barrett's oesophagus [BE)]and oesophageal adenocarcinoma). Extra-oesophageal syndromes are categorized into those with a documented association with GERD (cough, laryngitis, bronchial asthma and dental erosions) and those with an unclear association (pharyngitis, recurrent otitis media, sinusitis and idiopathic pulmonary fibrosis) [5]. This classification determines the subsequent diagnostic and therapeutic approach for the patient.

According to the guidelines of the Polish Society of Gastroenterology (PTG-E), the diagnosis of GERD includes several key steps. A detailed medical history and clinical symptoms are fundamental: the presence of the aforementioned typical GERD symptoms is often sufficient for diagnosis, which is confirmed through empirical tests, i.e. PPI tests. Improvement of symptoms after PPI treatment can confirm the diagnosis of GERD. This

approach applies to oesophageal symptomatic syndromes without the presence of alarm symptoms (dysphagia, weight loss, bleeding, anemia) [5].

Diagnostic Tools

For other clinical scenarios, modern medicine offers a range of tests that support GERD diagnosis, especially in cases where there is no clear response to pharmacotherapy. The existence of a "gold standard" for GERD diagnosis had not been clearly defined until the Lyon Consensus [4].

Upper gastrointestinal endoscopy is not routinely recommended in the absence of alarm symptoms. Indications for the test include the presence of three or more risk factors, such as GERD duration >5 years, age ≥50 years, white race, male gender, obesity, Barrett's oesophagus, or a first-degree relative with oesophageal adenocarcinoma. Lack of response to pharmacological treatment is also an indication for the examination. During the procedure, features of hiatal hernia and inflammatory changes in the distal oesophagus, classified according to the Los Angeles classification, can be observed. Currently, grade B or higher confirms a GERD diagnosis. Routine biopsy of the distal oesophagus is not recommended due to method limitations. Patients should fast for at least six hours before the procedure [6].

Oesophageal manometry: This test evaluates oesophageal motor function, especially before planned anti-reflux surgery. It diagnoses motor disorders that may affect treatment and outcomes. In GERD diagnosis, it is mainly used to measure the lower oesophageal sphincter (LES) and exclude significant motor disorders. It is important to note that prior gastroscopy can affect the manometric results, complicating the diagnosis. Patients should fast for at least six hours or longer if achalasia is suspected [7].

24-hour multichannel intraluminal impedance-pH monitoring is the current standard for differentiating GERD from functional heartburn and reflux hypersensitivity, diagnosing GERD resistance to PPI treatment, and confirming or excluding extra-oesophageal syndromes, where it is considered the gold standard. It is also a predictor of the success of surgical anti-reflux treatment, which should be performed before such a procedure [8]. After identifying the LES, the catheter tip is placed 5 cm above the upper LES margin during the test. The standard probe has six to eight metal rings at various heights and one or two pH sensors. This structure allows the recording of electrical resistance between the rings, tracking the movement, direction, and nature of the bolus. It provides information on the type of reflux (acidic, weakly acidic, or non-acidic) and its form (liquid, mixed, or gaseous).

The test gives data on acid exposure time (AET), the number of reflux episodes, and various parameters like MNBI (mean nocturnal baseline impedance – values below 2292 Ω suggest significant mucosal damage supporting GERD diagnosis) or bolus exposure time. Furthermore, using mathematical algorithms, such as the symptom index (SI) and symptom association probability (SAP), it is possible to determine whether the patient's symptoms can be linked to reflux.

During diagnostics, laryngoscopy should not be overlooked, as it is increasingly used as an initial test for atypical extra-oesophageal symptoms, such as throat dryness, burning, foreign body sensation, chronic throat clearing, coughing, drooling, spasms, choking, frequent swallowing, belching, halitosis, otalgia, and nonspecific neck pain [9]. However, the presence of these symptoms alone should not form the basis for diagnosing GERD. The appearance of reflux laryngitis depends largely on the examiner's experience, and in many cases, GERD is overdiagnosed. Several interpretation scales have been developed, the most popular being the Reflux Finding Score (RFS) by Belafsky [10].

Conclusion

The high prevalence of GERD and its projected increase in the coming years necessitate improvement and wider access to diagnostic tools. Currently, no perfect test exists that can diagnose GERD with 100% sensitivity and specificity. Diagnosis should be based on medical history, risk factors, empirical treatment, endoscopic examination, and especially 24-hour pH monitoring with impedance to identify the largest possible group of patients with a high likelihood of developing GERD complications. GERD can significantly reduce the quality of life and lead to upper gastrointestinal bleeding, dysphagia from post-inflammatory strictures, and the development of adenocarcinoma based on Barrett's oesophagus.

Awareness of GERD and its complications in society is crucial, as is the need for basic diagnostic protocols in primary care and access to more advanced diagnostic tools.

References

1. El-Serag HB, Sweet S, Winchester CC, Dent J. Update on the epidemiology of gastro-oesophageal reflux disease: a systematic review. *Gut*. 2014;63(6):871–880, https://doi.org/10.1136/gutjnl-2012-304269.
2. Petryszyn P, Staniak A, Grzegrzolka J. Is the use of esomeprazole in gastro-esophageal reflux disease a cost-effective option in Poland?. *J Comp Eff Res*. 2016;5(2):169–178.

3. Heidelbaugh JJ, Goldberg KL, Inadomi JM. Magnitude and economic effect of overuse of antisecretory therapy in the ambulatory care setting. *Am J Manag Care*. 2010;16(9):e228–234.
4. Gyawali CP, Yadlapati R, Fass R, Katzka D, Pandolfino J, et al. Updates to the modern diagnosis of GERD: Lyon consensus 2.0. *Gut*. 2024;73(2):361–371, https://doi.org/10.1136/gutjnl-2023-330616.
5. Vakil N, van Zanten SV, Kahrilas P, Dent J, Jones R et al. The Montreal definition and classification of gastroesophageal reflux disease: a global evidence-based consensus. *Am J Gastroenterol*. 2006;101(8):1900–1920.
6. Świdnicka-Siergiejko A, Marek T, Waśko-Czopnik D, Gąsiorowska A, Skrzydło-Radomańska B, et al. Postępowanie diagnostyczno-terapeutyczne w chorobie refluksowej przełyku. Konsensus Polskiego Towarzystwa Gastroenterologii 2022. *Med Prakt*. 2022;6:38–74.
7. Trudgill NJ, Sifrim D, Sweis R, Fullard M, Basu K, et al. British Society of Gastroenterology guidelines for oesophageal manometry and oesophageal reflux monitoring. *Gut*. 2019;68(10):1731–1750, https://doi.org/10.1136/gutjnl-2018-318115.
8. Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. *Am J Gastroenterol*. 2013;108(3):308–328.
9. Maniecka-Aleksandrowicz B, Domeracka-Kołodziej A. Zmiany w krtani i krtaniowej części gardła w chorobach górnego odcinka przewodu pokarmowego. *Otolaryngologia*. 2004;3(3):109–116.
10. Belafsky PC, Postma GN, Koufman JA. The validity and reliability of the reflux finding score (RFS). *Laryngoscope*. 2001;111(8):1313–1317.