v. 5, n. 16, 2025

International Journal of Health Science

Acceptance date: 08/04/2025

GASTROESOPHAGEAL REFLUX DISEASE: CLINICAL MANAGEMENT AND IMPACT ON QUALITY OF LIFE

Bruna Maria Freitas
UNIRIO, Rio de Janeiro, Brazil
https://orcid.org/0009-0007-9137-6538

Giovanna da Costa Sabaini
Educational Foundation of the Municipality of Assis, Assis, Brazil
https://orcid.org/0009-0008-6569-0256

Jorge Kenji Andrade Hirahata
Anhembi Morumbi, Piracicaba, Brazil
https://orcid.org/0009-0004-5098-4578

Rômulo Alexandre Gonçalves Gomes
FAMEJIPA, Ji-Paraná, Brazil
https://orcid.org/0009-0008-8687-0109

Rafaela Barbosa de Lima
Barbacena School of Medicine
Barbacena, Brazil
https://orcid.org/0009-0003-8409-7267

Diogo Zanotto Pereira
Educational Foundation of the Municipality of Assis , Assis, Brazil
https://orcid.org/0009-0001-4093-3441

Victor de Albuquerque Orsolin
Estácio University Center
Ribeirão Preto, Brazil
https://orcid.org/0009-0008-1531-181X

Mariana Betteti Munhoz
Educational Foundation of the Municipality of Assis , Assis, Brazil
https://orcid.org/0000-0002-1235-2201

José Elias de Araújo
AFYA, Itacoatiara, Brazil
https://orcid.org/0009-0002-6732-1522

Maria Júlia Vianna da Silva Marçal
Regional University of Blumenau
Blumenau, Brazil
https://orcid.org/0009-0002-7071-0342

Talita Domingues Caldeirão
Educational Foundation of the Municipality of Assis, Assis, Brazil
https://orcid.org/0000-0002-8608-5417

Ana Beatriz Carvalho de Oliveira Guilherme
Educational Foundation of the Municipality of Assis, Assis, Brazil
https://orcid.org/0009-0004-5116-3878

Abstract: Gastroesophageal Reflux Disease (GERD) has a high prevalence in various populations, especially in Western countries, where it affects between 10% and 20% of the adult population. Epidemiological studies show that factors such as obesity, a high-fat diet, smoking, alcohol consumption and genetic predisposition are strongly associated with the development of the disease. Early identification of these risk factors is fundamental for implementing preventive strategies that can reduce the incidence of GERD and minimize its long-term complications. The symptoms of GERD vary from typical manifestations, such as heartburn, regurgitation and chest pain, to atypical symptoms, such as chronic cough, laryngitis and dental erosion. Studies indicate that GERD can progress to more serious complications, including erosive esophagitis, esophageal stenosis and Barrett's esophagus, a precursor condition to esophageal adenocarcinoma. The clinical impact of the disease is significant, compromising patients' quality of life, especially when symptoms become persistent or severe. Therapeutic strategies for GERD include lifestyle changes, drug treatment and surgical interventions. Clinical studies show that weight loss, elevating the head of the bed and adopting a balanced diet significantly reduce symptoms. Among the drugs, proton pump inhibitors (PPIs) have the highest efficacy rate in reducing gastric acidity, outperforming H2 antagonists and antacids. For cases refractory to clinical treatment, laparoscopic fundoplication has been shown to be an effective alternative, with high success rates in reducing symptoms and improving esophageal function. The impact of GERD on quality of life goes beyond physical symptoms, affecting patients' sleep, emotional well-being and professional performance. Studies indicate a strong correlation between GERD and disorders such as anxiety and depression, which reinforces the need for a

multidisciplinary approach to managing the disease. Appropriate treatment, whether clinical or surgical, has shown a significant improvement in patients' quality of life, highlighting the importance of early diagnosis and personalizing therapeutic strategies according to the severity of symptoms and the individual characteristics of each patient.

INTRODUCTION

Gastroesophageal Reflux Disease (GERD) is a chronic digestive condition characterized by the abnormal return of gastric contents into the esophagus, resulting in uncomfortable symptoms and possible complications [1,2]. This condition affects a large proportion of the population, especially in Western countries, where its prevalence varies between 10% and 20% [1,2]. Factors such as obesity, a high-fat diet, smoking and excessive alcohol consumption are strongly associated with the development of GERD [1,2]. The disease can have a significant impact on patients' quality of life, making an accurate diagnosis and appropriate treatment essential [1,2].

The symptoms of GERD can be quite varied and include heartburn, regurgitation, chest pain, chronic cough, hoarseness, dysphagia and nausea [1,2]. In some cases, the symptoms can be confused with other diseases, such as angina or respiratory infections, which can delay the correct diagnosis [1,2]. In addition to the classic symptoms, GERD can lead to more serious complications, such as erosive esophagitis, esophageal stenosis and Barrett's esophagus, a precursor condition to esophageal cancer [1,2]. For this reason, early recognition and appropriate management are essential to prevent the progression of the disease [1,2].

The diagnosis of GERD is often based on the patient's clinical symptoms, but can be complemented by specific tests to confirm the presence of acid reflux and assess possible lesions in the esophagus [1,2]. Upper digestive endoscopy is one of the main tests used, allowing direct visualization of the esophageal mucosa and identifying signs of inflammation or complications [1,2]. In addition, 24-hour esophageal pH monitoring measures acidity in the esophagus and helps diagnose doubtful cases [1,2]. Esophageal manometry, in turn, assesses the function of the esophageal muscles and is useful in patients with symptoms suggestive of motor disorders [1,2].

Treatment of GERD aims to relieve symptoms, prevent complications and improve the patient's quality of life [1,2]. Lifestyle changes are fundamental and include losing weight, elevating the head of the bed, reducing the consumption of trigger foods (such as fatty, citrus and spicy foods) and stopping smoking and drinking alcohol [1-3]. In terms of drug treatment, proton pump inhibitors (PPIs) are the most effective class for reducing gastric acidity, followed by H2 receptor antagonists and antacids, which offer immediate symptomatic relief [1-3]. In the most severe cases or those refractory to clinical treatment, surgical procedures can be used, such as laparoscopic fundoplication, or minimally invasive endoscopic techniques to reinforce the anti-reflux barrier [1-3].

Despite the therapeutic options available, there are still controversies in the approach to GERD, especially in relation to the diagnosis of atypical cases and the ideal duration of drug treatment [1-3]. Furthermore, the indication of surgery for patients with mild to moderate symptoms continues to be debated [1-3]. Ongoing studies seek to define more effective strategies for managing the disease, taking into account individual factors and technological advances in diagnosis and treatment [1-3]. Thus, GERD continues to be a clinical challenge, requiring a multidisciplinary approach to ensure better outcomes for patients [1-3].

DOI https://doi.org/10.22533/at.ed.1595162524032

OBJECTIVES

The aim of this integrative review is to synthesize and critically analyze the findings in the literature on the prevalence, risk factors, clinical impact and therapeutic strategies of Gastroesophageal Reflux Disease (GERD) [4]. The review seeks to gather epidemiological data that shows the variation in the prevalence of GERD among different populations, considering geographical, ethnic and demographic aspects [4]. It also aims to explore the main predisposing factors, such as obesity, diet, smoking, alcohol consumption, genetic predisposition and physiological conditions that contribute to the development of the disease [4]. In this way, the review provides a comprehensive understanding of the determinants of GERD, making it possible to target more effective prevention and management strategies [4].

Another key objective is to evaluate the effectiveness of different therapeutic approaches, including lifestyle changes, drug treatment and surgical options [4]. The review will analyze the results of clinical studies on the use of proton pump inhibitors (PPIs), H2 antagonists and prokinetics, comparing their response rates and impact on patients' quality of life [4]. In addition, the effectiveness of laparoscopic fundoplication in cases refractory to clinical treatment will be discussed [4]. The impact of GERD on emotional well-being, sleep quality and productivity will also be addressed, highlighting the need for multidisciplinary and personalized management to minimize the limitations imposed by the disease and improve long-term outcomes [4].

METHODOLOGY

This integrative review was conducted with the aim of gathering and analyzing the best available evidence on Gastroesophageal Reflux Disease (GERD), with a focus on prevalence, risk factors, clinical manifestations, the effectiveness of therapeutic strategies and the impact on quality of life [5]. To this end, the PUBMED, VHL and MEDLINE databases were consulted, covering publications between 2015 and 2024 [5]. The search was carried out using keywords such as "Gastroesophageal Reflux Disease", "GERD", "Risk Factors", "Diagnosis", "Treatment", "Quality of Life", combined by Boolean operators (AND, OR) to optimize the relevance of the results [5].

Additional filters were applied to limit the selection of studies to English and Portuguese, excluding narrative reviews and non-peer-reviewed studies [5]. The inclusion criteria prioritized articles that addressed the epidemiology of GERD, risk factors, typical and atypical symptoms, complications, the efficacy of clinical and surgical treatments, and the impact on quality of life [5]. Studies that did not detail specific therapeutic interventions for GERD or that focused exclusively on pediatric populations were excluded [5].

The selection process was carried out in two phases [5]. In the first phase, 250 titles and abstracts were analyzed to identify relevant studies. In the second phase, 23 full articles were evaluated in detail, extracting data on prevalence, risk factors, diagnosis, treatments and impact on quality of life [5]. The analysis was conducted systematically, comparing the different therapeutic approaches and evaluating their effectiveness based on the clinical outcomes reported [5,6].

Finally, the extracted data was organized and critically interpreted, highlighting the main evidence on the management of GERD [5,6]. The clinical implications of the findings were discussed in relation to best practices for the early diagnosis and treatment of the disease, also considering challenges and future directions for further research [5,6].

RESULTS

PREVALENCE AND RISK FACTORS OF GERD

Gastroesophageal reflux disease (GERD) is a highly prevalent condition in various populations around the world [7,8]. Epidemiological studies indicate that its incidence has increased in recent decades, especially in Western countries, where the prevalence can reach 20% of the adult population [7,8]. This high frequency is directly related to factors such as changes in eating habits, an increase in obesity and an ageing population [7,8]. On the other hand, in some regions of Asia, the prevalence is relatively lower, possibly due to genetic and dietary differences [7,8].

In addition to geographical variation, GERD also shows significant differences between different ethnic groups [7,8]. Populations of Western origin tend to have higher rates of the disease compared to Asian and African populations [7,8]. Studies suggest that genetic, environmental and behavioral factors influence this disparity [7,8]. For example, some Asian populations have a lower incidence of hiatus hernia, an important risk factor for GERD [7-10]. Among people of African descent, the lower prevalence may be associated with differences in the composition of the esophageal mucosa and the production of gastric acid [7-10].

The impact of urbanization has also been pointed out as one of the main factors for the increase in the prevalence of GERD [7-10]. Individuals living in urban areas are more likely to develop the disease due to unhealthy eating habits, increased consumption of fast food, irregular meal times and high levels of stress [7-10]. In addition, frequent exposure to irritating substances, such as environmental pollutants and tobacco, can contribute to worsening symptoms [7-10]. This scenario reinforces the importance of public health strategies aimed at promoting healthy habits in urban populations [7-10].

Another relevant factor in the prevalence of GERD is age [7-10]. The condition becomes more common in older individuals due to natural physiological changes, such as reduced lower esophageal sphincter pressure, decreased saliva production and slower gastric emptying [7-10]. In addition, elderly people often take medications that can predispose them to reflux, such as calcium channel blockers and tricyclic antidepressants [7-10]. Studies indicate that GERD in the elderly may be underdiagnosed, since the classic symptoms, such as heartburn and regurgitation, may be less prominent in this age group [7-10].

Finally, epidemiological studies have been key to better understanding the evolution of GERD and its impact on public health [7-10]. Longitudinal studies make it possible to monitor trends over time, identifying possible changes in prevalence patterns and the main associated factors [12,13]. This information is essential to guide policies for the prevention and treatment of GERD, ensuring a better quality of life for patients and reducing the economic impact of the disease on health systems [12,13].

SYMPTOMATOLOGY AND CLINICAL IMPACT

The typical symptoms of Gastroesophageal Reflux Disease (GERD) are fundamental for diagnosing the condition and can vary in frequency and intensity [12-14]. Heartburn, the main symptom of GERD, is characterized by a burning sensation in the chest that can radiate to the throat [12-14]. Its frequency can vary from occasional episodes to daily manifestations, and it is exacerbated by factors such as diet, body position and meal times [12-14]. Regurgitation, another common symptom, refers to the return of gastric contents to the mouth and can be accompanied by a bitter or acidic taste [12-14]. In addition, GERD-related chest pain can be intense to the point of

being mistaken for heart pain, leading patients to seek emergency care to rule out cardiovascular events [12-14].

In addition to the typical symptoms, GERD can be manifested by atypical symptoms that affect different systems, making it difficult to immediately recognize the disease [12-14]. Chronic cough, for example, can result from irritation of the airways by acid reflux, and is persistent and resistant to conventional treatments [12-14]. Laryngitis, in turn, can lead to hoarseness and vocal alterations, impacting communication and quality of life [12-14]. Another atypical manifestation is dental erosion, caused by repeated exposure of tooth enamel to gastric acid, resulting in tooth sensitivity, cavities and progressive tooth wear [13-16]. These symptoms can occur alone or in combination, requiring a careful diagnostic approach [13-16].

Chronic GERD can develop into more serious complications when not treated properly [13-16]. One of the main complications is erosive esophagitis, characterized by inflammation and damage to the esophageal mucosa due to prolonged exposure to acid [13-16]. Patients with erosive esophagitis often present with odynophagia (pain when swallowing) and dysphagia (difficulty swallowing) and may, in more advanced cases, develop bleeding [13-16]. The diagnosis is made by upper digestive endoscopy, which allows direct visualization of the lesions and the collection of biopsies for histological evaluation [13-16].

Another relevant complication is esophageal stenosis, a progressive narrowing of the esophagus resulting from the healing of chronic esophagitis [13-16]. This narrowing can lead to difficulty swallowing solid food, impacting the patient's diet and nutrition [13-16]. Diagnosis is made by endoscopy, and treatment can include esophageal dilation procedures to restore the organ's normal diameter [13-16]. Without intervention, stenosis can significantly compromise the patient's quality of life, making swallowing increasingly difficult [13-16].

Finally, Barrett's esophagus represents one of the most worrying complications of GERD, as it is associated with an increased risk of esophageal adenocarcinoma [13-16]. This condition occurs when the normal esophageal mucosa is replaced by epithelium with intestinal characteristics, as an adaptation to chronic acid aggression [13-16]. Diagnosis is made by endoscopy with biopsy, and periodic surveillance is essential to monitor the progression of the condition and detect any malignant transformation early [13-16]. Early identification and management of GERD are fundamental to reducing the risk of complications and improving patients' quality of life [13-16].

EFFECTIVENESS OF THERAPEUTIC STRATEGIES

Gastroesophageal reflux disease (GERD) is a prevalent condition that requires a graded therapeutic approach, ranging from lifestyle changes to surgical interventions [13-16]. The choice of treatment depends on the severity of symptoms, the response to initial treatment and the presence of complications [13-16]. The effectiveness of therapeutic strategies has been widely studied, allowing for evidence--based recommendations for the management of the disease [13-16].

Lifestyle changes are the first line of treatment, especially for mild to moderate cases [13-16]. Measures such as elevating the head of the bed, weight loss, smoking cessation and avoiding trigger foods have been shown to be effective in reducing symptoms [13-16]. Studies indicate that adherence to these modifications can improve patients' quality of life and reduce the need for drug treatment, especially in individuals with less frequent symptoms [13-16].

Proton pump inhibitors (PPIs) are considered the most effective drug therapy for GERD, promoting symptom relief and healing of erosive esophagitis in up to 80% of cases [13-16].

DOI https://doi.org/10.22533/at.ed.1595162524032

Although they are widely used, their prolonged use can be associated with adverse effects, such as vitamin B12 deficiency and an increased risk of bone fractures [13-16]. It is therefore recommended to use the lowest effective dose for the shortest possible time, adjusting therapy according to the patient's response [13-16].

H2 receptor antagonists represent a therapeutic alternative for patients with milder symptoms or as a complementary treatment to PPIs [13-16]. Although they are less powerful in reducing gastric acidity, they are effective in some cases, especially in controlling nocturnal symptoms [13-16]. Comparative studies show that PPIs are more effective in healing esophagitis and controlling the disease, making them the preferred choice in most cases [13-16].

Prokinetics, which increase gastrointestinal motility, can be useful for selected patients with delayed gastric emptying [13-16]. However, their effectiveness in treating GERD is limited and side effects restrict their use [13-16]. Thus, prokinetics are considered a secondary option and are only used in specific cases and under strict medical supervision [13-16].

For patients with GERD refractory to clinical treatment or who have severe complications, laparoscopic fundoplication is an effective alternative [13-16]. This procedure strengthens the lower esophageal sphincter, significantly reducing acid reflux [13-16]. Studies indicate that the long-term success rate varies between 70% and 90%, although complications such as dysphagia and abdominal swelling can occur [13-16]. Thus, the decision for surgery must be individualized, considering the risks and benefits for each patient [13-16].

IMPACT OF GERD ON QUALITY OF LIFE

Gastroesophageal Reflux Disease (GERD) is a chronic condition that affects not only the physical health but also the quality of life of individuals [17-21]. Symptoms such as heartburn and regurgitation can interfere with sleep, emotional well-being and work performance, negatively impacting various areas of daily life [17-21]. The recurrence of symptoms and the need to adjust routine can lead to significant limitations, making GERD a problem that goes beyond physical discomfort [17-21].

One of the main impacts of GERD is interference with sleep [17-21]. Many patients report difficulty sleeping due to nocturnal heartburn and regurgitation, which can lead to insomnia and fragmented sleep [18-21]. Studies indicate that up to 75% of patients with GERD have sleep disorders, resulting in daytime fatigue, lower productivity and an increased risk of developing cardiovascular diseases, depression and anxiety [18-21]. Thus, sleep deprivation caused by GERD can trigger a cascading effect on the patient's general health [18-21].

Emotional well-being is also affected by GERD [18-21]. Chronic symptoms can lead to irritability, frustration and stress, making it difficult to participate in social activities [18-23]. Many people avoid going out to dinner, traveling or attending events for fear of triggering their symptoms in public, which can lead to social isolation and lower self-esteem [18-23]. Qualitative studies show that patients with GERD often report feelings of shame and embarrassment, which reinforces the negative impact on mental health [18-23].

In addition, professional performance can be compromised by GERD [18-23]. The condition can lead to absenteeism, when the patient needs to be absent from work, and presenteeism, when the patient is present but has reduced productivity due to discomfort and

difficulty concentrating [18-23]. This can affect career progression and job satisfaction, especially in professions that require high cognitive and physical performance [18-23]. Economic studies show that GERD represents a significant cost for employers, due to lost productivity and increased healthcare costs [18-23].

Fortunately, proper treatment of GERD can significantly improve quality of life [18-23]. Lifestyle changes, such as adjustments to diet and sleeping position, combined with proton pump inhibitor medication, can reduce symptoms and improve sleep and emotional well-being [18-23]. For more severe cases, surgery, such as laparoscopic fundoplication, can be an effective solution, reducing the need for medication and providing lasting relief [18-23]. Studies show that patients who receive appropriate treatment report a significant improvement in various aspects of life, reinforcing the importance of continuous medical follow-up for the management of the disease [18-23].

DISCUSSION

RELEVANCE OF PREVENTION AND EARLY DIAGNOSIS

Gastroesophageal reflux disease (GERD) can significantly impact patients' quality of life, but prevention and early diagnosis play a crucial role in reducing its effects and complications [1-5]. Identifying risk factors and implementing lifestyle changes are fundamental measures to reduce the incidence of GERD and improve patients' prognosis [1-5]. In addition, early diagnosis can facilitate appropriate treatment, avoiding esophageal damage and compromising general well-being [1-5].

Identifying risk factors is essential for preventing GERD [1-5]. Among the main risk factors are obesity, smoking, excessive alcohol consumption, a diet rich in fats and irritating foods, as well as prolonged use of certain medications [1-5]. Risk stratification can help identify individuals who are more likely to develop the disease, allowing preventive measures to be implemented early [5-10]. Educating patients about these factors is essential to encourage them to adopt healthier habits and minimize the progression of GERD [5-10].

Lifestyle changes are one of the most effective ways of preventing and controlling GERD [5-10]. Measures such as maintaining a healthy weight, reducing the consumption of fatty and acidic foods, and quitting smoking help to reduce reflux episodes [5-10]. In addition, avoiding heavy meals before bedtime and elevating the head of the bed can reduce the esophagus' exposure to gastric acid during the night [5-10]. These interventions, when implemented consistently, can relieve symptoms and improve patients' quality of life [5-10].

Diagnosing GERD can be challenging, especially in cases with atypical symptoms such as chronic cough, hoarseness or non-cardiac chest pain [5-10]. Complementary tests such as esophageal pH monitoring, upper digestive endoscopy and esophageal manometry may be necessary to confirm the diagnosis [5-10]. pH-metry, considered the gold standard for diagnosis, measures the acidity of the esophagus over 24 hours, while endoscopy makes it possible to assess the presence of lesions in the esophageal mucosa [5-10]. Performing these tests is essential for defining the best therapeutic approach and avoiding more serious complications, such as Barrett's esophagus [5-10].

Therefore, prevention and early diagnosis of GERD are essential to minimize its impact and prevent long-term complications [6-10]. Adopting healthy habits and identifying risk factors can reduce the incidence of the disease, while appropriate diagnostic tests allow for more effective treatment [6-10]. The approach must be individualized, taking into account the particularities of each patient to ensure proper management and a better quality of life [6-10].

LIMITATIONS OF PHARMACOLOGICAL TREATMENT

Proton Pump Inhibitors (PPIs) are widely used in the treatment of Gastroesophageal Reflux Disease (GERD) and other conditions related to acid hypersecretion [6-10]. Their prolonged use offers significant benefits, including relief from heartburn and regurgitation, improved quality of life and prevention of complications such as erosive esophagitis and Barrett's esophagus [6-10]. In addition, PPIs are effective in treating peptic ulcers and Zollinger-Ellison syndrome, demonstrating their importance in the management of gastric and duodenal diseases [6-10].

However, continuous use of these drugs can be associated with risks and adverse effects [6-10]. Hypochlorhydria induced by PPIs can compromise the digestion and absorption of essential nutrients such as iron, calcium, magnesium and vitamin B12, increasing the risk of anemia, osteoporosis and neurological disorders [6-10]. In addition, reduced gastric acidity can favor intestinal bacterial overgrowth (SIBO) and increase susceptibility to infections such as Clostridium difficile and community-acquired pneumonia [10-13].

Another significant risk of long-term PPI use is the possible association with kidney disease and dementia [10-13]. Studies suggest that chronic use of these drugs may be related to an increased risk of chronic kidney failure and cognitive decline, although this relationship still needs more research to be confirmed [10-13]. In addition, there is evidence that PPIs can interfere with bone metabolism, increasing the incidence of fractures, especially in the elderly [10-13].

Given these risks, therapeutic alternatives can be considered for patients who cannot or do not wish to continue with the prolonged use of PPIs [10-13]. H2-receptor antagonists (ARH2), prokinetics, sucralfate and alginic acid are options that can help control GERD symptoms without the same adverse effects as PPIs [10-13]. For more severe cases, endoscopic therapies and anti-reflux surgery, such as laparoscopic fundoplication, may be indicated [10-13].

The decision about long-term use of PPIs should be individualized, carefully weighing the benefits and risks for each patient [10-13]. Whenever possible, strategies to minimize dependence on these drugs should be implemented, including lifestyle changes such as weight loss, elevating the head of the bed and dietary adjustments [10-13]. Regular medical follow-up is essential to assess the need for maintenance or discontinuation of PPI therapy, ensuring safe and effective treatment [10-13].

CRITERIA FOR SURGICAL INDICATION

Surgical indication for the treatment of Gastroesophageal Reflux Disease (GERD) should be based on well-defined criteria, taking into account the failure of clinical treatment, the presence of associated complications and the patient's quality of life [13-18]. The persistence of symptoms, even with the optimized use of Proton Pump Inhibitors (PPIs) and lifestyle changes, is one of the main indications for surgery [13-18]. In addition, tests such as esophageal pH monitoring and impedanciometry help to prove therapeutic failure, reinforcing the need for a surgical approach [13-18].

Patients with complications of GERD, such as severe erosive esophagitis, esophageal stenosis and Barrett's esophagus, can benefit significantly from laparoscopic fundoplication [13-18]. Severe erosive esophagitis, when uncontrolled, can result in bleeding, ulcers and esophageal fibrosis [13-18]. Esophageal stenosis leads to swallowing difficulties, while Barrett's esophagus represents an increased risk of adenocarcinoma [13-18]. In cases of bulky hiatus hernia, surgery also becomes a viable alternative to restore normal anatomy and relieve symptoms such as regurgitation and chest discomfort [14-18].

The surgical decision can also be influenced by patient preference, especially when there is a desire to avoid the continuous use of medication [15-18]. Clinical treatment, despite being effective for many, can require prolonged use of PPIs, which is associated with possible adverse effects such as osteoporosis, vitamin B12 deficiency and increased risk of gastrointestinal infections [15-18]. Thus, for patients who are looking for a definitive solution and have realistic expectations about the results of surgery, laparoscopic fundoplication becomes an attractive option [15-18].

When comparing long-term clinical and surgical treatment, both have advantages and disadvantages [15-18]. Clinical treatment is non-invasive and generally well tolerated, but may require continuous use of medication and may not prevent the progression of the disease [15-18]. Laparoscopic fundoplication, on the other hand, offers long-lasting symptom relief, improved quality of life and reduces the need for medication, but involves surgical risks and possible post-operative complications, such as dysphagia and abdominal distension. Therefore, the choice of treatment should be individualized, taking into account the profile of each patient [15-18].

Laparoscopic fundoplication is most indicated for patients with GERD refractory to clinical treatment, severe complications of the disease and significant hiatus hernia [18-23]. Younger, healthier patients with good esophageal motility tend to have better post-surgical results [18-23]. Furthermore, it is essential that surgical candidates understand the risks involved and have realistic expectations about the possible benefits and limitations of the procedure [18-23].

In conclusion, the decision between clinical and surgical treatment for GERD should be based on a careful analysis of the symptoms, the response to drug treatment and the presence of complications [18-23]. Laparoscopic fundoplication has been shown to be an effective option for selected patients, providing prolonged symptom relief and preventing disease progression. However, the choice of treatment should always be individualized, taking into account the profile and needs of each patient [18-23].

REFERENCES

1. Katz, Philip O et al. "ACG Clinical Guideline for the Diagnosis and Management of Gastroesophageal Reflux Disease." *The American journal of gastroenterology* vol. 117,1 (2022): 27-56. doi:10.14309/ajg.0000000000001538

2. Sharma, Priya, and Rena Yadlapati. "Pathophysiology and treatment options for gastroesophageal reflux disease: looking beyond acid." *Annals of the New York Academy of Sciences* vol. 1486,1 (2021): 3-14. doi:10.1111/nyas.14501

3. Iwakiri, Katsuhiko et al. "Evidence-based clinical practice guidelines for gastroesophageal reflux disease 2021." *Journal of gastroenterology* vol. 57,4 (2022): 267-285. doi:10.1007/s00535-022-01861-z

4. Patel, Janaki et al. "Gastroesophageal Reflux Disease." *Primary care* vol. 50,3 (2023): 339-350. doi:10.1016/j.pop.2023.03.002

5. Katzka, David A, and Peter J Kahrilas. "Advances in the diagnosis and management of gastroesophageal reflux disease." *BMJ (Clinical research ed.)* vol. 371 m3786. 23 Nov. 2020, doi:10.1136/bmj.m3786

6. Mahajan, Roopali et al. "Gastroesophageal reflux disease and oral health: A narrative review." *Special care in dentistry : official publication of the American Association of Hospital Dentists, the Academy of Dentistry for the Handicapped, and the American Society for Geriatric Dentistry* vol. 42,6 (2022): 555-564. doi:10.1111/scd.12726

7. Rodríguez de Santiago, Enrique et al. "Endoscopic anti-reflux therapy for gastroesophageal reflux disease." *World journal of gastroenterology* vol. 27,39 (2021): 6601-6614. doi:10.3748/wjg.v27.i39.6601

8. Otaki, Fouad, and Prasad G Iyer. "Gastroesophageal Reflux Disease and Barrett Esophagus in the Elderly." *Clinics in geriatric medicine* vol. 37,1 (2021): 17-29. doi:10.1016/j.cger.2020.08.003

9. Dong, Rui et al. "Gastroesophageal reflux disease and the risk of respiratory diseases: a Mendelian randomization study." *Journal of translational medicine* vol. 22,1 60. 16 Jan. 2024, doi:10.1186/s12967-023-04786-0

10. Xiao, Ying Lian. "Gastroesophageal reflux disease: When East meets West." *Journal of digestive diseases* vol. 23,4 (2022): 192-195. doi:10.1111/1751-2980.13090

11. Herbella, Fernando A M, and Marco G Patti. "Gastroesophageal Reflux Disease and Idiopathic Lung Fibrosis. From Heartburn to Lung Transplant, and Beyond." The American surgeon vol. 88,2 (2022): 297-302. doi:10.1177/0003134821998686

12. Cui, Na et al. "Laryngopharyngeal reflux disease: Updated examination of mechanisms, pathophysiology, treatment, and association with gastroesophageal reflux disease." *World journal of gastroenterology* vol. 30,16 (2024): 2209-2219. doi:10.3748/wjg.v30.i16.2209

13. Zhang, Linda Yun, and Marcia Irene Canto. "Endoscopic approaches to gastroesophageal reflux disease." *Current opinion in gastroenterology* vol. 37,5 (2021): 441-448. doi:10.1097/MOG.0000000000000759

14. Vandenplas, Y, and K Huysentruyt. "Gastroesophageal reflux disease in preterm infants: unmet needs." *Expert review of gastroenterology & hepatology* vol. 18,9 (2024): 485-491. doi:10.1080/17474124.2024.2407116

15. Griffiths, Tricia L et al. "Pulmonary manifestations of gastroesophageal reflux disease." *Expert review of respiratory medicine* vol. 14,8 (2020): 767-775. doi:10.1080/17476348.2020.1758068

16. Lee, Way Seah, and Kee Seang Chew. "Gastroesophageal reflux disease in Asian infants: Similar condition, different perceptions." *Annals of the Academy of Medicine, Singapore* vol. 51,5 (2022): 259-260. doi:10.47102/annals-acadmedsg.2022128

17. Nedelcu, Marius et al. "Bariatric Surgery and the Mechanisms of Gastroesophageal Reflux Disease." *Journal of laparoendoscopic & advanced surgical techniques. Part A* vol. 30,8 (2020): 907-911. doi:10.1089/lap.2020.0323

18. Hoshikawa, Yoshimasa, and Katsuhiko Iwakiri. *No shinkei geka. Neurological surgery* vol. 52,6 (2024): 1271-1276. doi:10.11477/mf.1436205044

19. Raijman, Isaac. "Endoscopic treatment of gastroesophageal reflux disease." "Tratamiento endoscópico de la enfermedad por reflujo gastroesofágico." *Cirugia y cirujanos* vol. 92,2 (2024): 276-282. doi:10.24875/CIRU.24000101

20. Mehta, Raaj S et al. "Association of Diet and Lifestyle With the Risk of Gastroesophageal Reflux Disease Symptoms in US Women." JAMA internal medicine vol. 181,4 (2021): 552-554. doi:10.1001/jamainternmed.2020.7238

21. Kendrick, Katherine, and Shanu N Kothari. "Updates on Surgical Treatment for Gastroesophageal Reflux Disease." *The American surgeon* vol. 89,6 (2023): 2730-2737. doi:10.1177/00031348231157414

22. Zhu, Xian, and Jianwei Shen. "Anti-reflux mucosectomy (ARMS) for refractory gastroesophageal reflux disease." *European journal of medical research* vol. 29,1 185. 18 Mar. 2024, doi:10.1186/s40001-024-01789-5

23. Khallouf, Joe et al. "Reflux gastro-œsophagien chez le patient obèse ; prise en charge actuelle" [Gastroesophageal reflux disease in obese patients ; current management]. *Revue medicale suisse* vol. 16,699 (2020): 1287-1291.