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A Prospective Observational Study of Prescription and Quality of Life: Gastroesophageal Reflux Disease in Territory Care Hospital

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Abstract

Aims and objective: The main aim of the study is to know the quality of life in GERD patients and the management of GERD with the help of prescription patterns and patient counseling. Methodology: After receiving approval from Departmental Research Committee AIPBS with the reference no AIPBS/2021/4586/11 on dated 30 September 2021 and also approved from the Ethics Committee of Biomedical and Health Research, Adesh University with the reference no AU/EC/PH/2K22/87, the study was performed at Adesh Hospital, Bathinda. The study was a prospective observational study with a total number of 100 GERD patients and a study duration of 6 months. The data were recorded in the self-structured questionnaire. Result: A total number of 100 GERD patients were studied along with their prescription pattern and quality of life. It was determined that particular classes of drugs were prescribed to the patients with their dose details, and age, health condition, gender, and smoking are the factors that affect the quality of life. Gastroesophageal reflux disease is a chronic condition characterized by the backflow of stomach acid or bile into the oesophagus, causing irritation of the lining. GERD is a condition characterized by the occurrence of uncomfortable symptoms and discomfort caused by the backflow of stomach contents. GERD, or gastroesophageal reflux disease, is a common condition affecting the upper gastrointestinal tract. It is estimated that one-third of the population suffers from GERD, with around 10 million cases occurring annually in India. In Western countries, a weekly occurrence of GERD symptoms is reported by 10% to 20% of the population. The diagnosis of GERD is established by evaluating the patient's clinical history and anamnesis, which involves identifying the specific symptoms, their duration, intensity, frequency, triggers, and factors that provide relief. It is also important to assess the progression of symptoms over time and their impact on the patient's quality of life. Commonly reported symptoms include heartburn and acid regurgitation.

Keywords: Gastroesophageal, acid reflux, heartburn, esophageal syndrome, extra esophageal syndrome

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INTRODUCTION

The persistent medical condition known as GERD (gastroesophageal reflux disease) is caused by stomach acid or entry of bile in the food pipe and straining the lining. The term GERD is used to describe conditions that lead to the discomfort and severe side effects that caused the acid reflux in the stomach. The two distinctive manifestations of GERD, i.e., esophageal condition and extra esophageal indication (Yao-Kuang Wang et al. (2013) [1].

Some of the disorders that relate to reflux include cough and asthma, and the other conditions that are including the other problems outside of the esophagus are heartburn, esophageal

cancer, and regurgitating the stomach content. Heartburn and the feeling that the food gets refluxing – both two are the prominent signs of the GERD. The stomach acid is rushing backward to the mouth or upper neck that causes the acid reflex, which is commonly characterized during the burning sensation behind the top of the breast. This disorder, which can be distressing due to the acid reflex, is a common health problem in other countries also.

Medication that initiates this disorder and worsens the gastroesophageal disorder (GERD) are like NSAIDs, Ca^{+} channel blockers, benzodiazepines, and antidepressants [2].

One's weight poses on the progressive components of GERD linked with some complications, like esophageal cancer or Barrett's neck erosive esophagitis. This was the portion of the disorder that impacted socially and financially, and 30% of the population suffers from this acid reflux disorder, i.e., GERD commonly. In India, every year, more than 10 million cases occur. Although gastroesophageal reflex disorder also affects the day-to-day life, which is the most frequently assembled adenocarcinoma of the esophageal, which is caused by over reflux of bile and burning sensations [3].

GERD refers to out as a major stomach-related medical problem because of its severity and frequent recurrences as well as the length of time that its unpleasant symptoms last. Barrett's esophagus, esophagitis, and esophageal injury are disorders that are caused by a variety of reasons. GERD affects almost 40% of the population in the US, making it the fourth most common gastrointestinal condition (Tutuian R, & Castell DO et al. (2003) [4].

Being a chronic illness, GERD needs constant care. Endoscopic anti-reflux operations are now confined to select individuals, and patients receiving endoscopic treatments should be part of a complete follow-up program due to their very limited experience with these procedures' effects on physical and mental health, every day and social functioning, and general health. Even though GERD symptoms are common, it's still unknown what specifically causes the illness [5–6]. The threat of emerging GERD is thought to be influenced by both genetic and environmental factors. Research from Korea and Pakistan has shown a connection between GERD symptoms and spicy food intake. Though GERD is more frequent in Western than in Asian communities, it is particularly widespread in Indian people, where it is linked to bad lifestyle choices and toxic ingredients in everyday diets (Butt AK, & Hashemy et al., 2014) [7].

DEFINITION

There are currently a lot of different definitions for GERD, and it's challenging to come up with one that everyone agrees upon because there isn't a clear diagnostic criteria. Based on reliable sources, the first definition was published globally in 2006. The recurrent reflux of stomach acid or bile into the esophagus, which irritates its lining, is the hallmark of the common medical condition known as gastroesophageal reflux disease. The symptoms of GERD are recognizable as those that arise when stomach contents reflux and cause severe pain and suffering. These classifications divide GERD patients into two sorts of syndromes: esophageal syndrome and reflux disease (GERD).

A condition effecting the esophagus, the tube that helps to passage food from mouth to stomach, is referred to as esophageal syndrome. Reflux symptoms that are abnormal in nature, such as heartburn and regurgitation, are what distinguish the second form of reflux, known as extra esophageal syndrome (Abrahão-Junior LJ et al., 2012) [8].

EPIDEMIOLOGY

One-third of the population suffers from GERD, a prevalent illness of the upper gastrointestinal tract. Approximately 10 million new cases are reported in India each year. Ten to twenty percent of individuals in Western nations suffer from GERD symptoms on a weekly basis. In the US, over 40%

of individuals report having acid reflux once a month, 20% once a week, and 7% once a day, citing 2019 research by AlZahrani SA, and Mohamed et al. According to EGD, the prevalence of erosive esophagitis is rather low, ranging from 2% to 7%. In the US, Barrett's Esophagus (BE) is a GERD problem that affects around 0.25% of adult Americans (Butt AK, & Hashemy I, et al., 2014) [7].

SYMPTOMS

As a burning sensation in the chest that usually moves to the mouth, heartburn is the most common GERD symptom. Stomach juices refluxing back into the esophagus cause this feeling [8–12]. In addition to causing acid reflux, heartburn is frequently accompanied by a bitter aftertaste in the mouth. As the seriousness of chest pain associated with cardiac issues dictates different diagnostic and treatment approaches based on the reason, it is imperative to identify the underlying cause of the discomfort (Velanovich V, et al., 1998) [13].

Most usual symptoms of GERD

1. Indigestion (emotion unwell after eating)
2. Heartburn (a burning sensation in the chest emanating toward the mouth). Feeling of diet being fixed gastric content into the mouth or hypopharynx.
3. Regurgitation: refluxed gastric contents into the mouth or hypopharynx.
4. Inadequate saliva in the mouth
5. Breathless
6. Acidic taste in the mouth area.

Management

All patients with GERD should be urged to implement lifestyle changes that seek to lessen their reflux symptoms, since these therapies are usually suggested upon diagnosis. The clinical history of the patient, the assessment of risk, and the appraisal of symptoms all influence the choice to order diagnostic tests. Certain foods such as citrus, spicy meals, coffee, chocolate, and fatty foods may be noticed by some patients to be the cause of their GERD symptoms. However, the effectiveness of general dietary limitations in reducing symptoms associated with reflux disease is limited. There is no concrete evidence that eating later reduces the amount of esophageal acid exposure, despite the association that has been seen between GERD symptoms and meals after meals. Reducing esophageal acid exposure and relieving GERD symptoms have not been reliably demonstrated by stopping smoking, despite the fact that smokers have higher reflux symptoms. It is decided that empirical therapy is appropriate for common GERD symptoms. On the other hand, unusual symptoms, a history of treatments, or warning indicators like dysphagia (difficulty swallowing), bleeding, vomiting, or inexplicable weight loss call for an endoscopic evaluation to determine the exact reason [4, 5].

PATHOPHYSIOLOGY

Represented pathophysiology of GERD in Figure 1.

Diagnosis

The previous clinical history and medical records of the patient are crucial in making the diagnosis of GERD. They should reveal notable symptoms and information on their occurrence, severity, duration, triggers, aggravating factors, evolution over time, and quality of life effect. Heartburn and regurgitation of acid are two major symptoms that patients often complain about. Though some patients with disorders like Barrett's esophagus or esophageal adenocarcinoma may not mention any symptoms of acid reflux, it's crucial to remember that GERD might be missed in those who are just suffering heartburn. Various tests are employed to aid in the diagnosis of GERD, including upper endoscopy, ambulatory acid (pH) monitoring, esophageal manometry, barium swallow X-rays, high-resolution esophageal manometry, Bernstein test, esophageal impedance monitoring, prolonged esophageal pH monitoring, and advanced radiological evaluations of the esophagus (Table 1) (El-Serag, HB, et al., 2007) [11].

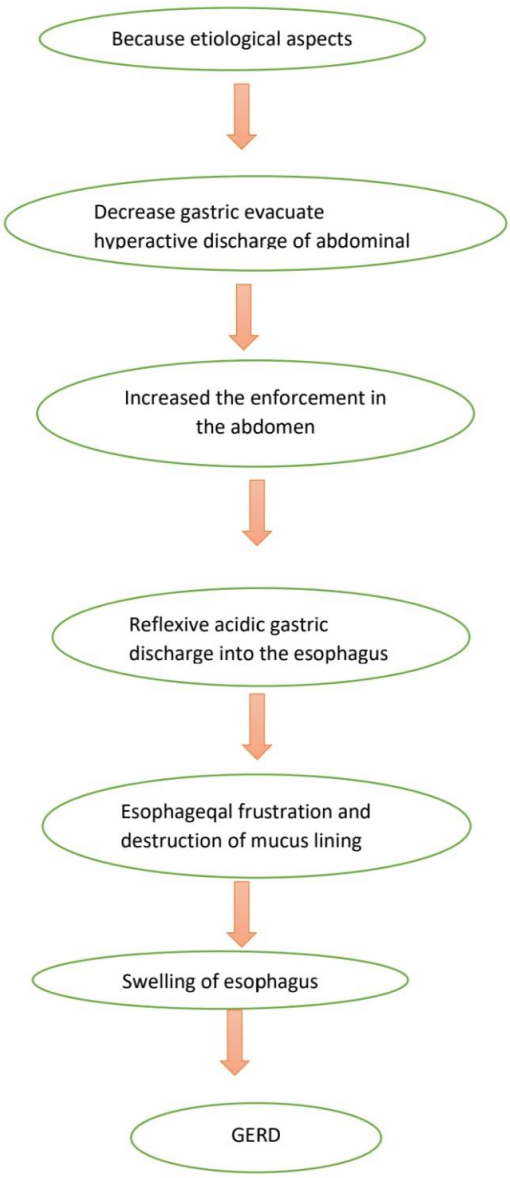

Figure 1. Pathophysiology of GERD.

Table 1. Indicating different types of diagnostic tests with indication.

Diagnostic Test	**Indications**
Proton pump inhibitors trial	Exquisite quality of GERD without worrying indications.
Oesophageal pH monitoring	Definitive quality is allocated to the assessment of GERD, preceded by a pre-employment assessment for non-erosive evidence.
Upper-endoscopy	Referral of patients treated with proton pump inhibitors and notice of adverse effects, including dysphagia, to the following: Traumatized, particularly sleepy patients, are subjected to an enhanced threat of developing Barrett's phenom.
Barium-esophagram	Evaluation of dysphagia is typically not recommended for the assessment of gastroesophageal reflux disease (GERD).
Oesophageal-manometry	Prior to anti-reflux surgical interventions aimed at excluding oesophageal dysmotility conditions such as achalasia or scleroderma, it is generally not recommended for the assessment of GERD.

UPPER ENDOSCOPY

This test determines if a patient has gastroesophageal reflux disease. The doctor administers an IV sedative, paralyzing medication, and a flexible tube with a camera and light attached to the throat to examine the esophageal surface.

Esophageal Ph Monitoring

One diagnostic tool for identifying the presence of gastroesophageal reflux disease is esophageal pH monitoring. This test measures the acid in the oesophagus directly through physiological measurement. It is a standard objective method for documenting reflux disease and tracking how the condition responds to medication or surgery. The diagnosis of laryngopharyngeal reflux is also made with it [14–16].

X Ray of Upper Digestive System

Upper gastrointestinal parcel radiography, often known as upper GI, is an x-ray examination of the stomach, throat, and a crucial portion of the small intestine (duodenum). Images are created using a different x-ray technique known as fluoroscopy.

MEDICAL TREATMENT

Relief of symptoms, therapeutic repair of the damaged esophageal mucosa, and prevention of further problems are the goals of medical care. This metric is both pharmacological and non-pharmacological. The therapy for GERD is based on an understanding of the different lifestyle choices, medications, endoscopic procedures, and surgical methods. Antacids, which are mostly composed of calcium, magnesium, and aluminum compounds, are used to relieve symptoms of acid reflux, such as burning in the right side of the chest.

NON-PHARMACOLOGICAL TREATMENT

With the help of a doctor and clinical pharmacologist, we are a patients counseling service for some change in patient quality of life and modified according to their complaints.

- Low intake of oily or spicy food.
- Avoiding regular consumption of alcohol and carbohydrate drinks.
- Low intake of caffeine, chocolate.
- Maintain a proper sleep cycle and daily exercise.

Antacid

Heartburn is typically treated with antacids. It is used for brief periods of time only to neutralize gastric acid. Several over-the-counter antacids are effective in treating GERD symptoms.

- Mylanta
- Rolaid
- Tums
- Gaviscon

Proton Pump Inhibitors (PPIS)

PPIs are utilized in the treatment of GERD. By preventing the creation of stomach acid, it helps to relieve the symptoms.

An example of PPI medication used to treat GERD

- Prilosec (OTC) (omeprazole)
- Prevacid (lansoprazole)
- Nexium (esomeprazole)

Some PPIs drugs are also available over the counter. Like Protonix (pantoprazole), Nexium (esomeprazole), Dexilant (dexlansoprazole), Aciphex (rabeprazole).

Histamin Blockers

Another family of medications that aid in the treatment of GERD includes histamine and H2 receptor antagonists. PPIs frequently inhibit signals coming from certain stomach acid cells. Lessen the GERD symptoms in the process. For the treatment of GERD, two H2 blockers are currently authorized. [10, 9]

- Axid (nizatidine)
- Zantac (ranitidine)

FUTURE DIRECTION

- Many other clinical researchers are required to work on other variables such as mealtime and calories intake. Intake of minerals on daily basis.
- There are very few studies on GERD and type of water consumption in this study; it was not clearly defined due to the smaller sample size.
- Very few studies on non-pharmacological and pharmacological management methods; further more researcher is required.

DRUG PRESCRIBED BY DOCTOR

- *Cimetidine:* Work on t/t of short-term duodenal gastric ulcers and also work on preventing gastric hypersecretion and reflux esophagitis disease and prevention of stress-related gastric ulcers.
- *Acotamide:* Work for the t/t of dyspepsia; help to decrease indications like abdominal pain, discomfort in the abdominal parts, and bloating; also work for highly secretion of acetylcholine.
- *Metoclopramide:* Work for the abdominal and esophagus problem and is sometimes used to treat nausea and vomiting.
- *Rifaximin:* Work for the growth of the bacteria that cause diarrhea, and stopping the growth, bacteria produce toxins that may cause liver disease.
- *Proton pump inhibitors:* Proton pump inhibitors (PPIs), in which various types of medicines are used that decrease stomach acid production. They can help relieve indications of chronic acid reflux (GERD) and stomach ulcers (Table 2).

Table.2. Prescribed drugs from the hospital by a physician.

Classes	Drugs Name	Yes	No
PPI's	Pantoprazole	15	85
	Omeprazole	34	66
	Esomeprazole	31	79
Gastroprokinetic	Acotamide	38	62
Antiemetic's	Metoclopramide	75	25
H2blockers	Cimetidine	46	54
	Ranitidine		
	Famotidine	21	79
	Phementadine	4	96
Antibiotics	Oxatacine	2	98
	Rifaxamine	7	93
	Rifaxigress	5	95
Saline laxative	Magnesium hydroxide	36	64
	Methylcobolamin	42	58

QUALITY OF LIFE

Most of the participants are male, and out of all 100 participants, 53% were smokers, while the remaining 47% were non-smokers. 75% of patients eat quicker than usual, and 66% of patients skip breakfast regularly and have a complaint of heartburn. Heartburn is so severe that 22% of people

wake regularly from sleep due to heartburn, while 29% have daily difficulty in swallowing, and 24% have regurgitations after eating meals [Table 3].

Table 3. Data evaluated with the help of questionnaire.

S.N.	Statement	N	Minimum	Maximum	Mean	Std. deviation
1.	HOW BAD WAS HEARTBURN	100	2	5	3.95	1.029
2.	HEARTBURN WHEN LYING DOWN	100	0	5	3.21	1.250
3.	HEARTBURN WHEN STANDING UP	100	1	5	3.26	1.383
4.	HEARTBURN WHEN AFTER MEALS	100	0	5	3.34	1.249
5.	DOSE HEARTBURN CHANGE YOUR DIET	100	0	6	3.29	1.499
6.	DO YOU HAVE DIFFICULTY SWALLOWING	100	0	5	2.63	1.727
7.	DOSE HEART BURN WAKE YOU FROM SLEEP	100	0	5	2.56	1.282
8.	DO YOU HAVE PAIN WITH SWALLOWING	100	0	5	2.64	1.411
9.	IF YOU TAKE MEDICATION DOSE THIS AFFECT YOUR DAILY LIFE	100	0	5	2.53	1.494
10.	HOW BAD GURGITATION	100	0	4	2.23	1.441
11.	REGURGITATION WHEN LYING DOWN	100	0	5	1.94	1.656
12.	REGURGITATION WHEN STANDING UP	100	1	5	2.62	1.144
13.	REGURGITATION AFTER MEALS	100	0	5	2.38	1.362
14.	DOSE REGURGITATION WAKE YOU FROM SLEEP	98	0	5	2.12	1.645
15.	DOSE REGURGITATION CHANGE YOUR DIET	100	0	5	1.99	1.283
16.	HOW SATISFIED ARE YOU WITH YOUR PRESENT CONDITION	100	1	3	1.95	.757

DISSCUSION

In this study, it was found that gender is not a significant factor for GERD. A similar result was found by Eusebi et al., Spantideas et al., and Wang H, et al.; they found there was no association between GERD and gender. The prevalence is equally distributed among both genders. Some researchers give disagreement results. Alrashed et al. and Awadalla, N, et al. found male gender is more prone to GERD. Obesity: in this study, it was found that obesity is a significant risk factor for disease with a p-value of 0.014 (< 0.05). GERD is more present in overweight (BMI 25–29.9) and obese (BMI greater than 30). A similar result was found by Ramachandran Arivan et al., Alrashed et al., Esubi et al., and Singh, S. et al. They found that obesity is significantly associated with disease [17–23].

CONCLUSION

The study was aimed to assessing the prescription pattern of gastroesophageal reflux disease patients with quality of life in them. A prospective study was done on 100 patients; the majority of patients were (21–30) and (31–40) and (41–50) of age group. The study determined that GERD is related to age. Males are more susceptible to GERD than females. The treatment of GERD is followed by proton pump inhibitors (esomeprazole, pantoprazole), H2blocker (famotidine, cimetidine, ranitidine), and prokinetics (metoclopramide, acotamide), and the quality of life is mostly effected by smoking cigarettes, alcohol consumption, quick eating, skipping breakfast, caffeinated beverages, fast food, spicy food, dinner eating pattern, drinking water, heartburn, difficulty in swallowing, profession, bad gurgitation, sleeping pattern, and satisfaction with health conditions that are associated with GERD.

Education is not associated with GERD, and family history of GERD is not associated with GERD.

REFERENCES

1. Wang YK, Hsu WH, Wang SSW, Lu CY, Kuo FC, Su YC, Yang SF, Chen CY, Wu DC, Kuo CH. Current pharmacological management of gastroesophageal reflux disease. Gastroenterol Res Pract. 2013;2013(1):983653. doi:10.1155/2013/983653.
2. Badillo R, Francis D. Diagnosis and treatment of gastroesophageal reflux disease. World J Gastrointest Pharmacol Ther. 2014;5(3):105–112. doi:10.4292/wjgpt.v5.i3.105.
3. Henry MA. Diagnosis and management of gastroesophageal reflux disease. ABCD. Arquivos Brasileiros de Cirurgia Digestiva (São Paulo). 2014;27(3):210–215. doi:10.1590/S0102-67202014000300013.
4. Tutuian R, Castell DO. Management of gastroesophageal reflux disease. Am J Med Sci. 2003;326(5):309–318. doi:10.1097/00000441-200311000-00007.
5. Al-Zahrani SA, Mohamed MZA, Mohammed A, Al-Harbi NM, Al-Qatari BM, Alatwi SA, Asiri AM. Gastroesophageal reflux disease and heartburn among the general population of Saudi Arabia. Int J Med Dev Ctries. 2019;3(11):933–940. doi:10.24911/IJMDC.51-1567426442.
6. Peery AF, Dellon ES, Lund J, Crockett SD, McGowan CE, Bulsiewicz WJ, Gangarosa LM, Thiny MT, Stizenberg K, Morgan DR, Ringel Y, et al. Burden of gastrointestinal disease in the United States: 2012 update. Gastroenterol. 2012;143(5):1179–1187. doi:10.1053/j.gastro.2012.08.002.
7. Butt AK, Hashemy I. Risk factors and prescription patterns of gastroesophageal reflux disease: HEAL study in Pakistan. J Pak Med Assoc. 2014;64(7):751–757.
8. Abrahão-Junior LJ, Lemme EMO. Manifestações extra-esofágicas da DRGE. J Bras Med. 2012; 100(5):17–21.
9. Gyawali CP, Fass R. Management of gastroesophageal reflux disease. Gastroenterol. 2018;154(2):302–318. doi:10.1053/j.gastro.2017.07.049.
10. Heidelbaugh JJ, Nostrant TT, Kim C, Van Harrison R. Management of gastroesophageal reflux disease. Am Fam Physician. 2003;68(7):1311–1319.
11. El-Serag HB. Time trends of gastroesophageal reflux disease: A systematic review. Clinical Gastroenterol Hepatol. 2007;5(1):17–26. doi:10.1016/j.cgh.2006.09.016.
12. Katzka DA, Kahrilas PJ. Advances in the diagnosis and management of gastroesophageal reflux disease. BMJ. 2020;371. doi:10.1136/bmj.m3786.
13. Velanovich V. Comparison of generic (SF-36) vs. disease-specific (GERDHRQL) quality-of-life scales for gastroesophageal reflux disease. J Gastrointest Surg. 1998;2(2):141–145. doi:10.1016/S1091-255X(98)80004-8.
14. El-Serag HB, Sweet S, Winchester CC, Dent J. Update on the epidemiology of gastro-oesophageal reflux disease: A systematic review. Gut. 2014;63:871–880. doi:10.1136/gutjnl-2012-304269.
15. Andrade FJC, et al. Qualidade de vida do paciente submetido à cirurgia videolaparoscópica para tratamento para doença do refluxo gastroesofagico. ABCD Arq Bras Cir Dig. 2012;25(3):154–160.
16. Chua YC, Aziz Q. Perception of gastro-oesophageal reflux. Best Pract Res Clin Gastroenterol. 2010;24(6):883–891. doi:10.1016/j.bpg.2010.10.003.
17. Esubi JU, Olojede SO, Lawal SK, Medubi LJ, Adekoya AJ, Dauda FF, Olusegun AP, Osinubi AA. Comparative studies on safety of glimepiride and glipizide on renal microarchitecture and oxidative stress markers of pregnant streptozotocin-induced diabetic wistar rats. J Pharm Pharmacol Res. 2019;3(1):3–18.
18. Arivan R, Deepanjali S. Prevalence and risk factors of gastro-esophageal reflux disease among undergraduate medical students from a southern Indian medical school: a cross-sectional study. BMC Res Notes. 2018;11:1–5. doi:10.1186/s13104-018-3569-1.
19. Alrashed AA, Aljammaz KI, Pathan A, Mandili AA, Almatrafi SA, Almotire MH, Bahkali SM. Prevalence and risk factors of gastroesophageal reflux disease among Shaqra University students, Saudi Arabia. J Family Med Prim Care. 2019;8(2):462–467. doi:10.4103/jfmpc.jfmpc_443_18.
20. Eusebi LH, Ratnakumaran R, Yuan Y, Solaymani-Dodaran M, Bazzoli F, Ford AC. Global

prevalence of, and risk factors for, gastro-oesophageal reflux symptoms: a meta-analysis. Gut. 2018;67(3):430–440. doi:10.1136/gutjnl-2016- 313589.
21. Singh S, Sharma AN, Murad MH, Buttar NS, El-Serag HB, Katzka DA, Iyer PG. Central adiposity is associated with increased risk of esophageal inflammation, metaplasia, and adenocarcinoma: a systematic review and meta-analysis. Clin Gastroenterol Hepatol. 2013;11(11):1399–1412.e7. doi:10.1016/j.cgh.2013.05.009.
22. Spantideas N, Drosou E, Bougea A, Assimakopoulos D. Gastroesophageal reflux disease symptoms in the Greek general population: prevalence and risk factors. Clin Exp Gastroenterol. 2016;9:143–149. doi:10.2147/CEG.S103485.
23. Awadalla NJ. Personal, academic and stress correlates of gastroesophageal reflux disease among college students in southwestern Saudi Arabia: A cross-section study. Annals Med Surg. 2019;47:61–65. doi:10.1016/j.amsu.2019.10.009.

