

## **A Review Study on Effect of Yoga And Lifestyle Moderation on Gastrointestinal Diseases**

**Dayma R.<sup>1</sup>, Bhandari R. B.<sup>2</sup> & Gowda G.P.<sup>3</sup>**

1. PhD Scholar, Department of Yoga Science, University of Patanjali.
2. Assistant Professor, Department of Yoga Science, University of Patanjali.
3. Professor, Department of Yoga Science, University of Patanjali

### **Abstract**

Unnatural lifestyle and dietary habits have caused life threatening gastrointestinal disease (GIDs) such as Acid Peptic Disease (APDs). About 7 lakh people died in 2002 due to stomach cancer (Parkin, Bray, Ferlay & Pisani, 2005) and 60 to 70 million people are suffering from various GIDs in US (Peery et al., 2012).

The aim of the study is to analyze the yoga therapy and lifestyle moderation on GIDs specially on APDs like Gastro Esophageal Reflux Disease (GERD), hyperacidity, gastric and duodenal ulcer, by accessing the databases-Google Scholar, PubMed, Medline, Elsevier and Willey, and other noted research journals, books, and online sources.

Lastly the paper will stress significance of yoga and natural lifestyle practices to prevent and moderate APDs as compared to pharmacological treatments.

**Key Words:** GIDs, APDs, yoga therapy, lifestyle moderation.

---

### **Introduction**

The digestive system plays an important role for the absorption of nutrients and the nourishment of overall body (Tortora & Derrickson, 2014). The factors such as stress, lack of sleep, use of antibiotics, improper water intake, and poor dietary habits impair digestive system and cause Gastro Intestinal Disorders (GIDs). The severity of GIDs varies as per disease types. Some GIDs like indigestion are mild while Acid Peptic Diseases (APDs) such as hyperacidity, Gastro Oesophageal Reflux Disease (GERD), gastric and duodenal ulcers are life threatening and may cause malignant conditions like adenocarcinoma and other stomach cancers (Malfertheiner, Chan, & Coll, 2009). APDs are most commonly associated with helicobacter pylori (H. pylori) infection, and non-steroidal anti-inflammatory drugs (NSAIDs) (Huang, Sridhar, & Hunt, 2002). Over the last decades it has been estimated that 50 percent of people in the world are infected by spiral shaped gram negative bacteria

called H. pylori (Chmiela, Karwowska, Gonciarz, Bujana, & Staczek, 2017). More than 1 million cases of ulcers due to H. pylori are found in India (Apollo Hospital, 2017). Most of the patients are consuming proton pump inhibitors (PPIs) such as Omeprazole, Lansoprazol, pantoprazole etcetera to control their symptoms related to APDs but these PPIs are known to cause neuropathy, ischemic heart disease, dementia and acute kidney injury (Desbuissons, Deray & Mercadal, 2017). Indigestion, drowsiness, constipation and reduce efficacy of some anti-fungal drugs (Farzaei, Abdollahi, & Rahimi, 2015). And over use of PPIs is not only the reason for adverse effect but also become a problem for concerned authorities due to its cost (Savarino, Dulbecco, Bortoli, Ottonello, & Savarino, 2016). H. pylori is the root cause of APDs and its prevalent therapies failed in 20% of cases due to antimicrobial resistance (Ayala, Escobedo-Hinojosa, & Romero, 2014) thereby warranting the need of further clinical researches on

complementary and alternative medicine to assess their efficacy to inhibit *H. pylori*. Healthy lifestyle and yoga therapy are found helpful in prevention and curing APDs without side effects (Kaswala et al., 2013). Balanced diet is very important as evidences say that consumption of excess salt, nitrites and fatty acids increase the risk of APDs while fruits and vegetable diet reduce the same (Kelley & Duggan, 2015). According to various studies moderate physical activity leads to reduction in bacterial infection and control duodenal ulcer (Cheng, Macera, Dair & Blair, 2000). Researches have suggested that intake of polyphenol in diet help in reduction of various chronic illness including APDs (Farzaei, Abdollahi, & Rahimi, 2015). The technique called *vatasara dhauti* mentioned in yogic classical text Gherand Samhita (GS) is helpful in curing all GIDs and stimulating digestive fire (GS 1:34). *H. pylori* is an anaerobic bacterium which dies in presence of oxygen (Malshe, 2010). Sucking the air through *kaki mudra* one should move the air in pyloric region by adopting inverted postures. Regular practice of the same can be helpful in inhibiting it (Malshe, 2016).

This paper will critically review the available evidences from published scientific literatures to see the efficacy of yoga and natural lifestyle treatment on APDs. If the hypothesis: *manoeuvring oxygen in pyloric region of the stomach by yogic technique inhibits H. pylori*, as proposed by Malshe (2016) comes to be true through clinical trials, this will be of great importance for the patients of APDs and concerned government to reduce the medical cost, untimely deaths and increase work performance and productivity.

### Method

Researches using non pharmacological treatments- yoga therapy, lifestyle, and diet modification, for managing APDs were reviewed. And researches on rats and non-humans were excluded. To identify

available studies on APDs and its Complementary and Alternative Management (CAM) modalities like diet, lifestyle and yoga therapy with least side effects were accessed by using the key terms: *effect of diet, lifestyle, alternative management and yoga on APDs, cost & side effects of PPIs, cost effective treatments* from the databases- Google Scholar, PubMed, Medline, Elsevier and Willey. Firstly, the aims of the downloaded research papers were read to understand their appropriateness for inclusion in this study. To find the intensity and magnitude of the APDs and their widely used CAMs worldwide, we reviewed 4 books (2 yogic classical texts, 1 to understand physiology of APDs and 1 book to understand yoga therapy from medical point of view) and 19 research papers (1 cohort study, 2 randomised trials, 1 case study, 3 exploratory researches, 5 review papers, 1 meta-analysis, 1 research paper on diet therapy, 1 paper on exercise therapy, 3 papers showing pharmacological approach and 1 hypothesis based papers on the yogic management of APDs) published from 2000 to 2017. These papers were contained with CAM interventions to manage APD having lesser side effects compared to usual pharmacological treatment. Out of 50 relevant abstracts, 32 were excluded because 1 was unpublished trial, 20 were not targeting specifically APDs, 1 was poorly designed, and 10 were related to other GIDs.

### Results

#### Pharmacological Approach

The result for the treatment of APDs by PPIs are not reducing the risk factors for ulcer patient taking NSAIDs and the paradigms have shown the need of new medicines after looking at the speed and duration by PPIs' treatment (Mejia & Kraft, 2009). APDs induced stomach cancer is quite common and around 700,000 were died because of it in 2002 (Parkin, Bray, Ferlay & Pisani, 2005).

### **Stress, Gastric Ulcers and Yoga**

A registered based cohort study showed stress as a risk for further progression of disease in patients with peptic ulcer even after receiving triple treatment (PPI or H<sub>2</sub>-receptor antagonistic with 2 antibiotics)(Dedling, Eisklov, Grabas, Nielsen, Torp-Pedersen, & Boggild, 2016). Secretion of GIT hormones is regulated by Autonomic Nervous System (ANS) and Central Nervous System (CNS) disorders of CNS and ANS are said to be responsible for causing GIDs (Lenchin & Disj, 2009). According to these 3 studies, yoga and meditation can be helpful in reducing stress caused sympathetic dominance, the level of stress hormones and severity of GIDs. Regular practice of yoga was found beneficial to overcome symptoms of GIDs (Narasingarao, Pradhan, & Navaneetham, 2017).

### **Other Alternative Treatments**

A randomised trial on APD's management program in a managed care environment has shown reduction in use of PPI therapy (Ofman et al., 2003). Dietary intake of polyphenol in management of peptic ulcer showed no side effects and oral consumption of polyphenol caused a very few side effects as compared to PPI and showed pharmacological effects in the treatment of APDs (Farzaei, Abdollahi, & Rahimi, 2015). Review on alternative treatments for H. pylori showed that treatment through plants, probiotics, and nutraceuticals lessened side effects of PPIs and promoted health but found ineffective to eradicate H. pylori (Ayala, Hinojosa, Herrera & Romero, 2014). Moderate physical activities and regular exercise reduce infections but excess of the same can adverse the condition (Cheng, Macera, Dair, & Blair 2000).

### **Yoga Therapy for GIDs**

Yoga practice like Kapalbhathi (Digamberji & Jha, 2001, p.51) and Agnisar kriya

(Saraswasti, 1997, pp.44-48) are beneficial for GERD (Baragi & Baragi, 2017). Use of PPIs with Kapalbhathi and Agnisar kriya helped control GERD symptoms in patients of hiatus hernia which were resistant to the use PPIs alone (Kaswala et al., 2013). Indigestion, acidity and gastric troubles depends on way of feeling and thinking patterns. Paschimottan asana (Digamberji & Jha, 2001, p.15) and Mayur asana (peacock pose) (Digamberji & Jha, 2001, p.16). Stimulate digestive fire; Dhauti (Saraswasti, 1997, pp.28-79) and Basti (Saraswasti, 1997, pp.80-87) cleanses GIT, pranayamas like Shitali (Digamberji & Jha, 2001, pp.60-61) and Ujjayi (Digamberji & Jha, 2001, pp.57-58) help overcome APDs. H. pylori - the root cause of APDs dies in presence of oxygen and Vatasar (Saraswasti, 1997) is the technique through which one ingests the air using kaki mudra and move it down to the pyloric region. And oxygen ingested with air is helpful to inhibit the H. pylori. Practice of inverted postures immediately after drinking air through kaki mudra can be helpful in inhibiting H. pylori (Malshe, 2018, pp.149-156).

### **Discussion**

APDs are common cause for stomach cancers due to which around 700,000 people died in 2002 and stress can aggravate APDs. Pharmacological treatments for the same are not only costly but leave the patient with various side effects and after the long term use of these treatments, patient develop resistant towards the medicines. And among CAMs, some therapies were useful with medication while some showed minor side effects. Yogic techniques with medication were also enabled to reduce PPIs' intake according to some of the reviewed articles. But if any technique which challenges to cure APDs without using PPIs would be a boon for the APDs' patients and the concerned care providers. And the yogic technique medically hypothesized and described by Malshe (2016) have

potential to treat patients without side effects and medicines. This warrants the need of further clinical trials to justify Malshe's medical hypothesis regarding yogic style for inhibiting H. pylori and moderating APDs.

### Conclusion

The intensity and magnitude of APDs among the Indian population is notable and employed pharmacological treatments like Antacids, PPIs and Antibiotics are insufficient for their cure and met with side effects. The CAM modalities like yoga, meditation, diet and exercise with medications were found supportive to moderate them. Interestingly, Malshe's (2016) yoga style as published in Medical Hypotheses for alternative treatment of

APDs by inhibiting H. pylori seems really captivating and needs to be tested in further RCTs. If its efficacy will be evidenced as advocated by him in RCTs, that will be of great value and hope for the APDs' patients and all care providers.

### Limitation

The research papers included in this review are lacking comparative experimental research designs to conclude superiority of CAM modalities over usual pharmacological treatment. RCTs on CAM modalities to manage APDs were unavailable which shows the need of the same in future. Researches made till the now on yoga for APDs could not show efficacy of yoga therapy to treat them without PPIs. This review lacks meta-analysis to be more informative.

### References

- 1) Apollo Hospital, (2017). Retrieved from <http://www.apollohospitals.com/pateint-care/health-and-conditions/stomach-ulcers>. Accessed on 31/01/2018.
- 2) Ayala, G., Escobedo-Hinojosa, W. I., & Romero, I. (2014). Exploring alternative treatments for helicobacter pylori infections. *World journal of gastroenterology*, 20 (6), 1450-1469.
- 3) Baragi, P. C., & Baragi, U. C. (2017) A critical review of disease amlapitta (gastritis), *Journal of Ayurveda and integrated medical sciences*, 2 (1), 167-179.
- 4) Cheng, Y., Macera, C. A., Davis, D. R., & Blair, S. N. (2000). Does physical activity reduce the risk of developing peptic ulcers? *British journal of sports medicine*, 34 (2), 116-121.
- 5) Chmiela, M., Karwowska, Z., Gonciarz, W., Bujana, A., & Staccek, P. (2017). Host pathogen interaction in helicobacter pylori related gastric cancer. *World journal of gastroenterol*, 23 (9), 1521-1540.
- 6) Digamberji, S., & Jha, P. (2001). Hathapradipika: *Second Hindi Commentary*. Pune, India: Kaivalayadham Srimanmadhav Yoga Mandir Samiti.
- 7) Farzaei, M. F., Abdollahi, M., & Rahimi, R. (2015). Role of dietary polyphenol in the management of peptic ulcer. *World Journal of Gastroenterology*, 21 (21), 6499-6517.
- 8) Huang, Q.C., Sridhar, S., & Hunt, R.H. (2002). Role of Helicobacter pylori infection and non-steroidal anti-inflammatory drugs in peptic – ulcer disease: a meta-analysis. *THE LANCET*, 359 (9300), 14-22.
- 9) Kaswala, D., Shah, S., Mishra, A., Patel, H., Patel, N., Sangwan, P., ... Brelvi, Z. (2013). Can yoga be used to treat Gastro Oesophageal Reflux Disease. *International journal of yoga*, 6 (2), 131-133.
- 10) Lenchin, F., & DIjs, V.D. (2009). Central nervous system plus autonomic nervous system disorders responsible for gastrointestinal and pancreatobiliary diseases. *Digestive disease and science*, 54 (3), 458-470.
- 11) Malfertheiner, P., Chan, F. K. L., & Coll, K. E. L. (2009). Peptic ulcer disease. *THE LANCET*, 374 (9699), 1449-1461.
- 12) Malshe, P. C. (2010). Drinking air and manoeuvring it to the pyloric region of the stomach for the treatment for helicobacter pylori infection, *Medical Hypotheses*, 75 (2), 155-161.
- 13) Malshe, P.C. (2016). Physical health through yoga – unexplored areas. *Annals of yoga and physical therapy*, 1 (1), 1005.
- 14) Savarino, V., Dulbecco, P., de Bortoli, N., Ottonello, A., & Savarino E. (2017). The appropriate use of proton pump inhibitors PPIs: Need for a reappraisal. *European journal of Internal Medicine*, 37, 19-24
- 15) Tortora & Derrickson. (2014). Principles of Anatomy and physiology: 14<sup>th</sup> edition, Hoboken, NJ: John Wiley & Sons.

\*\*\* \*\*