



# Indications and findings of upper gastrointestinal endoscopy in patients presenting to

## Thukha Gabar Hospital, Yangon, Myanmar

---

**Dr. Khin Thiri Thant Zin, Prof. Dr. Lan Liu, Prof. Dr Qiu Zhao**

### Author Details

Dr.Khin Thiri Thant Zin, the Co-1 st author of this article, is currently pursuing master's degree program in Department of Gastroenterology ZhongNan Hospital of Wuhan University, Wuhan 430071, China. E-mail: khinthiri29@icloud.com

Prof.Dr. Lan Liu, is the Co-1 st author, is currently an attending professor in Department of Gastroenterology ZhongNan Hospital of Wuhan university, Wuhan 430071, China. E-mail: hiliul@yahoo.com

Prof.Dr. Qiu, is the Corresponding author, is currently The Dean of Department of Gastroenterology ZhongNan Hospital of Wuhan University, Wuhan 430071, China. E-mail: zhaoqiuwhugi@gmail.com

**KeyWords:** Upper gastrointestinal, epigastric pain, heartburn, dyspepsia, dysphagia, H.pylori, Endoscopy, CLO test, Urease test.

### ABSTRACT

Upper gastrointestinal (UGI) symptoms are among the commonest complaint for which patients seek medical attention in Asia. Mainly UGI symptoms occupied with Epigastric pain or discomfort, heartburn, dyspepsia, dysphagia, anemia, melena, bloating and constipations are common in the community. Helicobacter pylorus (H. pylori) colonizes over 50% of world population and is also commonest H.pylori associated gastritis and diseases in developing countries and also in Myanmar. This aim was to focus on the characteristics democratically, indications, endoscopic findings of patients undergoing upper gastrointestinal endoscopy (UGIE) and of H.pylori infection incidence at the Thukha Gabar hospital in Yangon, Myanmar.

## Introduction

**Upper Gastrointestinal (UGI) pain** is among the commonest complaints in Myanmar, accounting for 50% of all complaints related to the annual prevalence of dyspepsia in Myanmar. The other 50% of the reasons for UGIE include anemia, epigastric pain, dysphagia, vomiting, loss of appetite and weight loss. Melena and hematemesis are also sometimes the reason for UGIE to examine a certain onset reason.

**Dyspepsia** is a common symptom with an extensive diagnosis and a pathophysiology. Its meaning refers to a variety of unpleasant symptoms such as nausea, vomiting, epigastric pain or discomfort, heartburn, feelings of gastric fullness, and early satiety [1]. Diseases associated with dyspepsia are the leading causes of gastrointestinal morbidity and mortality globally. Undiagnosed dyspepsia affects approximately 20% of the world's population, with women, smokers, and people taking nonsteroidal anti-inflammatory drugs being the most affected.

**H.pylori infection** is one of the important treatable causes of dyspepsia. Its prevalence varies among different countries and regions, including Asian countries, as a result of different social habits, geographical conditions, races and ethnicity. In 2001, the prevalence of infection with this microorganism was 25-50% in developed countries and 70-90 percent in developing countries [2]. Globally, the overall prevalence of infection is roughly 50%. The histopathological effect of H. pylori varies from just dyspepsia with normal endoscopic findings to chronic superficial gastritis in which inflammation is limited to the antral gastritis, pan-gastritis, chronic atrophic gastritis with varying degrees of glandular atrophy, peptic ulcer, gastric carcinoma, and even lymphoma. So, it is a serious organism that if it is given suitable attention and proper treatments are required. Many previous studies have been conducted on the prevalence of H. pylori and found that there is no representative sex inclination. The age inclination for infection varies between studies, with several referring to what happens most at older ages (> 60). However, it is common for this bacterial infection to be acquired during childhood and may seem to continue when older. To inspect the H.pylori infection, the most common precise tests that are mainly used in Myanmar are the CLO test (Campylobacter-Like Organism Test) and the Urease test.

**Gastrointestinal endoscopy (UGIE)**, also called esophagogastroduodenoscopy (OGD), is one of the most commonly performed endoscopic procedures and provides valuable information for patients with gastroduodenal disorders and for finding an accurate answer. It allows visualization of the esophagus, stomach, and proximal duodenum, with the option of biopsies or therapeutic interventions. It gives a better diagnostic yield than radiology, particularly in the investigation of upper gastrointestinal bleeding, inflammatory conditions of the UGI track like esophagitis, gastritis, and duodenitis, as well as the diagnosis of Mallory Weiss tears and vascular malformations [3]. Appropriate diagnostic indications for UGIE include: examining the exact cause of an upper abdominal symptom that persists despite an appropriate trial of therapy; examining upper abdominal symptoms associated with premonitory features that have been suggested as indicators of high risk for a serious disease. These features include recent onset of dyspepsia in older patients, dysphagia, epigastric pain or discomfort, chronic gastritis, persistent vomiting, hematemesis/melena stools, anemia, and/or weight loss. UGIE has been both effective and a relatively safe procedure for decades that can be performed at large medical centers, small hospitals, outpatient clinics or even private offices [4]. Establishing the causes of UGI diseases leads to more efficient treatment and, consequently, decreases morbidity and mortality rates. In Myanmar, UGIE service is offered in two teaching hospitals and a few other public or private centers, all in the cities. This study's aim was to focus on the characteristics, indications, and endoscopic findings of patients undergoing upper gastrointestinal endoscopy (UGIE) and different types of H. pylori-associated disease at the Thukha Gabar hospital in Yangon, Myanmar.

## Materials and methods

The study used a cross-sectional design to consecutively recruit clinic out-patients referred to the Endoscopy Unit of Thukha Gabar (TGKB) Hospital with UGI symptoms for endoscopy, from January, 2019 to December, 2019. Study participant recruitment and data collection were performed at the Endoscopy Unit, TGKB hospital, between January 2019 and December 2019. The Endoscopy Unit is manned by a medical gastroenterologist with the support of trained nurses and staff. It runs endoscopy sessions as gastroenterologists recommend and offers both upper and lower gastrointestinal (GI) endoscopy services. Each session performs approximately four upper endoscopies and two lower GI endoscopies. Procedures performed are both diagnostic and interventional. The latter includes injection sclerotherapy and variceal band ligation.

In total, 202 UGIE patients were investigated over ten months. 1. Patients with a known history of previous UGIE, as well as those who have recently completed an antibiotic course for eradication (within the last month). 2. Patients with positive stool antigen but negative serology are also excluded because of the possibility of recent infection and inadequate histological findings. 3. Patients with normal findings via UGIE are excluded. All patients were given explanatory statements of the project and consented prior to endoscopy. The complaints of the sample individuals vary, including nausea, epigastric pain, heartburn, flatulence, and bloating sensations. Patients with these symptoms for more than 3 months are included. Demographic information about the patients was collected, such as their age, gender, occupation, and so on. Indications for the UGIE were recorded. The methods that were used for diagnosis were both serology for IgG and IgM, stool for H. pylori antigen detection and histopathological examination of Giemsa stained sections of gastric biopsy. Patients who prepared for OGD attended the lab for routine investigations, and at that time, they asked for their permission for both blood and stool sample tests for Helicobacter pylori. Study participants were given the option of sedation with (intravenous dromicum 1mg) or 10% lidocaine (xylocaine) throat

spray. *H. pylori* infection was determined by the rapid-urease campylobacter like-organism (CLO) test on gastric antral and body biopsies at UGIE. Statistical analysis was performed using the Stata 15® statistical software package. Results were expressed as the median and interquartile range for continuous variables and proportions for nominal variables. The proportion of the major endoscopic findings was presented with a 95% confidence interval.

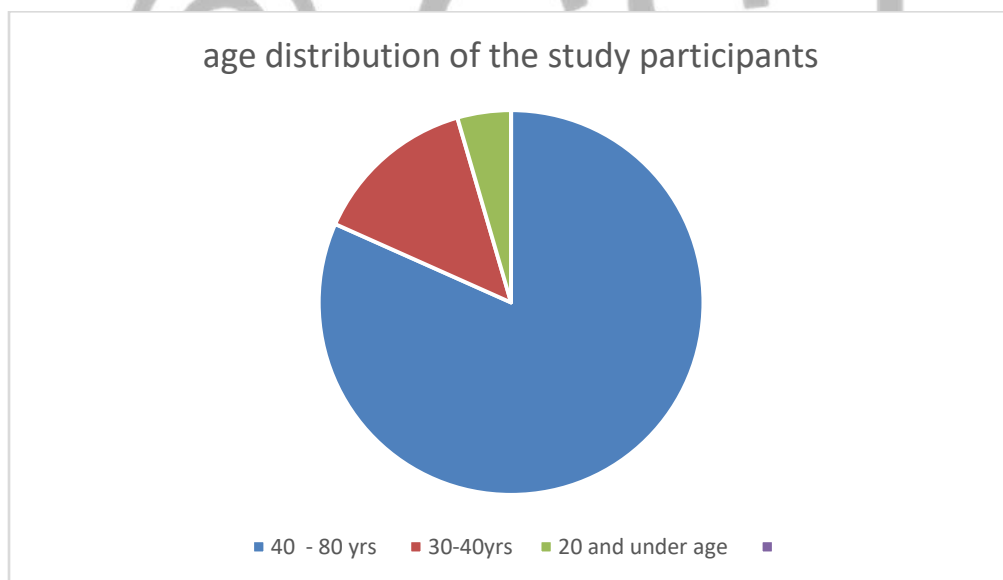
**Result**

There were 108 (53.4%) males out of the 202 patients. Their ages ranged from 4 to 94 years with a median age of 46 years (Table 1).

**Table 1:** Demographic characteristics and Campylobacter-like organism test (CLO test)

Age, Sex and CLO Test	Frequency %
<b>Sex (n=202)</b>	
Male	108 (53.4%)
Female	94(46.5%)
<b>Age (yrs) (n=202)</b>	
41- >80 yrs	81.6%
<30 – 41 yrs	18.3%
<b>CLO test (n=84)</b>	
Positive result	51%
Negative result	37%

The 41-80 year age group had the highest frequency of 165 (81.6%) patients, followed by the <20-40 year age group with 37 (18.3%) patients. Other details of the age distribution are shown in Figure 1.



**Figure 1:** details of the age distribution

Dyspepsia was the commonest indication, occurring in 155 (76.7%) patients, followed by upper GI bleeding symptoms (hematemesis and melena stools with anemia), presenting in 47 (23.2%) patients (Table 2).

**Table 2:** Indication (Reason) for UGIE

Main Indication for endoscopy	Patient No.	Percentage (Out of 202)
Dyspepsia	155	76.7%
H&M with Anaemia	49	24.2%
Epigastric Pain	18	8.9%
Dysphagia	11	5.4%
Chronic Gastritis	9	4.4%
Vomiting	6	2.9%

The major endoscopic diagnoses were antral gastritis, which occurred in 68 (33.3%) patients, followed by pangastritis in 57 (28.3%) patients, gastric ulcer (33/202, 16.3%), duodenal ulcer (25/202, 12.3%) and 9 cases with Atrophic Gastritis, 5 cases with GERD along with Diverticulitis, and 5 cases with a variety of carcinomas including esophagus and stomach (cardia) (Table 3).

**Table 3:** Primary UGIE Findings (Diagnosis)

Findings	Patients No.	Frequency
Antral Gastritis	68	33.3%
Pangastritis	57	28.3%
Gastric Ulcer	33	16.3%
Duodenal Ulcer	25	12.3%
Atrophic Gastritis	9	4.5%
GERD + Diverticulitis	5	2.4%
Carcinoma (Esophagus + Stomach cardia )	5	2.4%

The prevalence of H. pylori obtained by immediate CLO-testing of gastric antral and body biopsies for patients out 84 of 202 was 41.5% (Table 1). Among 84 patients, H.pylori negative was (37/44%) and H.pylori positive (51/60%) was ruled out and it is still ruled out as high incidence. Due to ongoing proton pump inhibitor and NSAID use, we were unable to perform on some of the patients. Among 155 dyspeptic patients, antral gastritis 68 (33.3%) was the commonest finding, followed by pangastritis 57 (28.3%).

## Discussion

This study aimed to document the demographic characteristics, indications, and endoscopic findings of patients undergoing UGIE at a private hospital in Myanmar. This study represents the first ever report on UGIE indications and findings from a hospital in Yangon, Myanmar. From January 2019 to December 2019, the study has shown that due to sex abbreviation and age classification, the onset of complications of Gastritis and the suggested need for UGIE in males more than females, and also ages ranging from 41 to 80, basically above 60, are the most common. We have seen it in younger people under 40, but not in severe conditions, but mild. Dyspepsia was the commonest indication for upper GI endoscopy in the vast majority of our participants. Other than dyspepsia, the second reason is anemia. Other reasons for UGIE among our patients were symptoms of UGI bleeding, screening for esophageal varices in cirrhotic patients and recurrent vomiting. Only 4.4% of our patients had an upper GI endoscopy for dysphagia, which is a much less common cause of UGIE. Gastritis was the most frequent endoscopic finding in our patients, along with antral gastritis, pangastritis, and atrophic gastritis. Antral gastritis was diagnosed more frequently than pangastritis among our patient population. Although the gastric ulcer rating is low this year, it's still the disease that is more frequently diagnosed than the duodenal ulcer. There are 9 cases of several gastritis, mainly atrophic gastritis, and 5 cases of GERD, along with diverticulitis patients and a few newly diagnosed cancer patients.

Many of the patients in this study were in their middle age or older and probably on NSAIDs for degenerative joint and bone diseases, which predispose more to the development of gastritis. Antral gastritis (AG) is more common in this year's UGIE rather than pangastritis, and the main cause for both is dyspepsia. AG is mainly seen in older people with a long hospital history and H.pylori associated gastritis, but nowadays, it can be seen more commonly in the last 2 years. AG affects only the antral portion of the body, making it unlikely to cause Pangastritis. Pangastritis is mostly a chronic type of gastritis because it involves

the entire stomach. It can be caused by H.pylori infection, NSAIDs, excessive alcohol drinking, chronic stress, or autoimmune gastritis. These are the two most common causes of H. pylori bacteria in gastritis.

According to the findings of the study, the prevalence of Helicobacter pylori infection in Myanmar is 60% out of 84 patients, with the majority of them being males over the age of 60 who have been suffering from dyspepsia for months or weeks. The incidence of H.pylori is similar to that conducted by other studies in developing countries in Asia and the Middle East [5]. Two studies performed in India showed that about 80% of the population was infected with Helicobacter pylori [6, 7]. H. pylori colonization of the gut is one of the most common infections globally. Some researchers describe it as the most common chronic human bacterial infection [8, 9]. It is the main cause of chronic gastritis and the principal etiological agent of gastric cancer and peptic ulcer disease. Many countries have seen a decrease in the prevalence of H. pylori as a result of improved living conditions, H2 blockers, antacids, and improved potent antibiotics, as well as additional treatments such as probiotics, glutamine, antioxidants, and omega alpha - 3 fatty acids. H. pylori. Possible reasons for this difference may be the increasing effective eradication therapy of the infection with antibiotic combination and proton pump inhibitors (PPI) and also the widespread and indiscriminate use of antibiotics and PPI. This study did not exclude patients who were already on antibiotics and PPI or had taken these drugs prior to the study. It may also be associated with improved sanitation among the inhabitants [10]. Despite the decrease in prevalence of H. pylori among patients in this study, the current prevalence of 60% is still high compared to rates in developed countries [11]. The prevalence of H. Pylori infection is associated with lower socioeconomic status, sanitation, basic hygiene, poor diet; overcrowding, ethnicity, gender and age, low levels of education and geographic location also play a major role in the distribution of the infection [12, 13]. This may explain the higher prevalence of H. Pylori in developing countries.

## Conclusion

UGI diseases remain one of the main health problems in Myanmar. They are currently found in most endoscopy patients and are the fifth major cause of death nationwide. In this year of 2019, most endoscopy-related diseases are AG and Pangastritis in Yangon, along with common symptoms such as dyspepsia. These diseases can be treatable with suitable treatment and excessive care, but we shouldn't be so careless about them as they can also be fatal. Patients with AG and pangastritis were mostly older (over 60 without sex verification) and had H.pylori infection. H.pylori infection was significantly associated with the presence of gastric mucosal atrophy and is most common among the population. The high prevalence of H. pylori (60%) in this study indicates that the infection is still a common problem among the Myanmar population, mainly at adult age (> 60). As H. pylori positivity can lead to serious gastrointestinal problems throughout an individual's life, it can be emphasized that it is essential for screening and timely treatment leading to eradication.

## Competing interests

The authors declare no competing interests.

## Acknowledge

I would like to acknowledge Dr. Qui Zhou , the head of Gastroenterology, Zhongnan Hospital of Wuhan University and my supervisor , Dr. Lan Liu for their warmly help towards me to help me finish this article My thanks for all doctors, nurses and Lab stuffs in ThuKha GaBar hospital , Yangon for their help.

## References

- [1] Ramin Niknam, Mehrdad Seddigh, Mohammad Reza Fattahi, Amirreza Dehghanian, Laleh Mahmoudi. *Prevalence of Helicobacter pylori in Patients With Dyspepsia. Jundishapur J Microbiol.* 2014; 7(10):e12676. <https://doi.org/10.5812/jjm.12676> PMID: 25632327 PMCID: PMC4295317
- [2] Kabir S. *Detection of Helicobacter pylori in faeces by culture, PCR and enzyme immunoassay. J Med Microbiol.* 2001; 50:10211029. <https://doi.org/10.1099/0022-1317-50-12-1021> PMID: 11761185
- [3] Aduful H, Naaeder S, Darko R, Baako B, Clegg-Lampsey J, Nkrumah K et al . *Upper gastrointestinal endoscopy at the Korle Bu Teaching Hospital, Accra, Ghana. Ghana Med J.* 2007; 41(1): 12-6. PubMed | Google Scholar
- [4] Coleman WH. *Gastrosocopy: a primary diagnostic procedure. Prim Care.* 1988;15(1):1-11. Google Scholar
- [5] Malekzadeh R, Sotoudeh M, Derakhshan MH, Mikaeli J, Yazdanbod A, Merat S, et al. *Prevalence of gastric precancerous lesions in Ardabil, a high incidence province for gastric adenocarcinoma in the northwest of Iran. J Clin Pathol.* 2004; 57(1):37-42. <https://doi.org/10.1136/jcp.57.1.37> PMID: 14693833 PMCID: PMC1770167
- [6] Poddar U, Yachha SK. *Helicobacter pylori in children: an Indian perspective. Indian Pediatr.* 2007; 44(10):761-70.
- [7] Ahmed KS, Khan AA, Ahmed I, Tiwari SK, Habeeb A, Ahi JD, et al. *Impact of household hygiene and water source on the prevalence and transmission of Helicobacter pylori: a South Indian perspective. Singapore Med J.* 2007; 48(6):543-9.

- [8] Coleman WH. *Gastroscopy: a primary diagnostic procedure*. Prim Care. 1988;15(1):1-11. Google Scholar
- [9] Dakubo JC, Clegg-Lamprey JN, Sowah P. *Appropriateness of referrals for upper gastrointestinal endoscopy*. West Afr J Med. 2011; 30(5): 342-7. PubMed | Google Scholar
- [10] Ghana Health Service (GHS) Annual Report, 2012. *Report Published by Ghana Health Service* in 2013.
- [11] Paul B, Adimoolam S, Quereshi MJ, Eva JJ. *Current Status of H pylori Infection Treatment 2017*. *Journal of Applied Pharmaceutical Science*. 2017; 7(10): 190-195. Google Scholar
- [12] Sally C, Hsiu-Ju C, Rachel M, Karen Goodman J, Can Help Working Group. *Helicobacter pylori incidence and re-infection in the Aklavik H. pylori Project*. *Int J Circumpolar Health*. 2013; 72(1): 1-7. Google Scholar
- [13] David YG, Lee YC, Wu MS. *Rational Helicobacter pylori Therapy: Evidence-Based Hep*. 2014; 12(2): 177-186. Google Scholar

