CLINICAL PRESENTATION AND ENDOSCOPIC RESPONSE TO TREATMENT OF EROSIVE ESOPHAGITIS

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Significance: Gastroesophageal reflux disease (GERD) is an increasingly common disorder that gastroenterologists and physicians encounter in daily practice. In the Philippines, there is an increasing trend from 2.9% to 6.3% in two time with the prevalence of erosive esophagitis between 1994-1997 and 2000-2003, respectively. Because most of the patients in this institution are elderly, it is the researcher's hope to identify the symptoms of erosive esophagitis and to determine the endoscopic response to treatment among these patients.

Methodology: All patients endoscopically diagnosed with erosive esophagitis, as classified according to Los Angeles (LA), were included in the study. Demographic profile and symptoms of GERD and the endoscopic treatment response recorded. Descriptive statistics was done on the data.

Results: Fifty-one patients were included in the study. Most of them were male (56.9%) with an average BMI of 22.6 and majority of them were classified as Grade A (88.2%). Most common symptom for patients with GERD was bloatednes (74.51%). Results showed that 50.98% of the patients were already healed at 4th week after treatment with proton pump inhibitor, while it took 8 weeks for 39.22% to be healed.

Conclusion: Elderly patients may have different clinical manifestation regardless of the severity of esophagitis and have higher risk for complications of GERD. Physicians should always be aware of atypical presentations of GERD and should have lower threshold of treating such conditions to prevent further complications

Keywords: GERD, Erosive Esophagitis, Elderly

Introduction

Gastroesophageal reflux disease (GERD) is an increasingly common disorder that gastroenterologists and physicians encounter in daily practice. The prevalence rate of GERD in Eastern Asia has risen from 2.5%-4.8% before 2005 to 5.2-8.5% from 2005 to 2010 [1].

In the Philippines, there is an increasing trend from 2.9% to 6.3% in two time with the prevalence of erosive esophagitis between 1994-1997 and 2000-2003, respectively [1].

As the incidence of GERD is increasing, asymptomatic erosive esophagitis is thought to be increasing as well. Several studies like in Swedish population from which 37% of patients with erosive esophagitis (EE) had no symptoms and in Koreans from which 42-45% of affected were asymptomatic [2].

Erosive esophagitis and other complications of GERD occur more frequently in elderly people. Elderly patients with severe esophagitis were least likely to have severe heartburn, however, when elderly patients had severe heartburn, it is a good clinical indicator of the presence of severe esophagitis. Studies have shown that the perception of visceral pain decreases in the elderly and some demonstrated a reduced or absent sensitivity to acid perfusion of the esophagus in elderly patients but not in younger patients with Barrett's esophagus. The mean age of patients with reflux-associated Barrett's esophagus and esophageal adenocarcinoma is greater than that of patients with GERD alone [3].

Objectives

a. General
To identify the presenting clinical symptoms and endoscopic response to treatment of erosive esophagitis among patients in Veterans Memorial Medical Center

b. Specific
(1) To determine the symptoms and co-morbid illnesses associated with erosive esophagitis among patient in Veterans Memorial Medical Center

(2) To determine the endoscopic response after 4 and 8 weeks of treatment with proton pump inhibitor

Review of Related Literature

Gastroesophageal reflux disease is a chronic and recurrent disease. It is common in Western countries, with 20% of the Western population experiencing typical reflux symptoms, such as heartburn, more than once a week of western population [4]. However, the increase in prevalence in Asia is comparable to western countries [1].

The prevalence of symptomatic gastroesophageal reflux disease in people aged 55 to 74 years is also approximately 20%, mirroring that of the general adult population. Approximately 40-60% of patients with symptoms of gastroesophageal reflux disease have esophageal erosions when evaluated endoscopically [2].

Heartburn is the most common symptom of GERD among western countries, while regurgitation among Asian countries. However, acid regurgitation, respiratory symptoms and dysphagia maybe more common than heartburn in some elderly patients with gastroesophageal reflux disease [5]. Polypharmacy is also common in elderly population resulting to decrease in treatment compliance. Concomitant disease is more common in the elderly may lead to decreased complaints regarding severity of heartburn relative to the severity of symptoms of other disorders [3].

It has been reported that atypical manifestations are slightly greater in patients with ERD than NERD in a European patients [6]. Among patients with Barrett's esophagus, elderly patients are less symptomatic than younger patients. Moreover, symptoms of reflux may not precede the development of esophageal adenocarcinoma. Also, 28% of patients with adenocarcinoma arising in a Barrett's esophagus experienced minimal or no symptoms of antecedent reflux [7].

An 8-week course of proton-pump inhibitors (PPI) is the therapy of choice for symptom relief and healing of erosive esophagitis [8, 13, 14]. There are no major differences in efficacy between the different PPIs (omeprazole, lansoprazole and omeprazole-sodium bicarbonate). Maintenance therapy should be administered for GERD patients who continue to have symptoms after PPI is discontinued and in patients with complications including erosive esophagitis and Barrett's esophagus [8, 13]. Approximately, 70 – 80 % of patients with erosive reflux disease (ERD) would demonstrate complete relief on PPI therapy and 60 % of patients with non-erosive reflux disease (NERD) [8,9].

Doubling the PPI dose has become a common practice in patients with GERD who failed PPI once daily. In a report of patients with erosive esophagitis, doubling the PPI dose increased the healing rate by 6 percent but had no impact on symptoms [15]. In other reports of patients with symptomatic GERD who failed PPI once a day, doubling the PPI dose increased the rate of overall symptom improvement by 22 to 26 percent [16].

Significance of the Study

Major goal of treatment for erosive esophagitis is to prevent the development of Barrett's esophagus, esophageal adenocarcinoma and to achieve sustained healing of esophagitis and free of symptoms. Because most of the patients in this institution are elderly, it is the researcher's hope to identify the symptoms of erosive esophagitis and to determine the endoscopic response to treatment among these patients.

Definition of terms:

1. Barrett's Esophagus – is a consequence of chronic GERD by exposure to pepsin, bile, and other stomach contents which damages the esophageal squamous epithelium and causes it to heal through metaplastic process in which columnar cells replace reflux-damaged squamous cells.

2. Body Mass Index – a measurement of the relative percentages of fat and muscle mass in the human body, in which weight in kilograms is divided by height in meters squared and the result used as a in index of obesity.

3. Erosive Esophagitis - is a condition in which areas of the esophageal lining are inflamed and ulcerated. The most common cause of erosive esophagitis is chronic acid reflux.

4. Gastroesophageal Reflux Disease (GERD) - is a condition resulting from the recurrent backflow of gastric contents into the esophagus and adjacent structures causing troublesome symptoms and/or tissue injury. Heartburn and acid regurgitation are considered typical symptoms. Chronic backflow can later on result to Barrett's esophagus and even worse, esophageal adenocarcinoma.

5. Los Angeles Classification for Esophagitis - focuses on the description of the extent of visible mucosal breaks in the belief that this is of greatest diagnostic and prognostic value. It has four classifications, from Grade A with <5mm mucosal break to the most severe type, Grade D which is mucosal breaks that occupy >75% of the mucosal lumen.

6. Non-Erosive Reflux Disease – defined as the presence of typical symptoms of gastroesophageal reflux disease caused by intraesophageal reflux (acidic or weakly acidic), in the absence of visible esophageal mucosal injury at endoscopy.

7. Proton Pump Inhibitors (PPI) – most potent suppressor of gastric acid that work by reducing the amount of stomach acid made by glands in the lining of your stomach. They act by binding with the enzyme H+, K(+)-ATPase, hydrogen/potassium adenosine triphosphatase.

Methodology

Study Area

The study will be conducted at the out-patient department (OPD), wards and endoscopy unit of Veterans Memorial Medical Center.

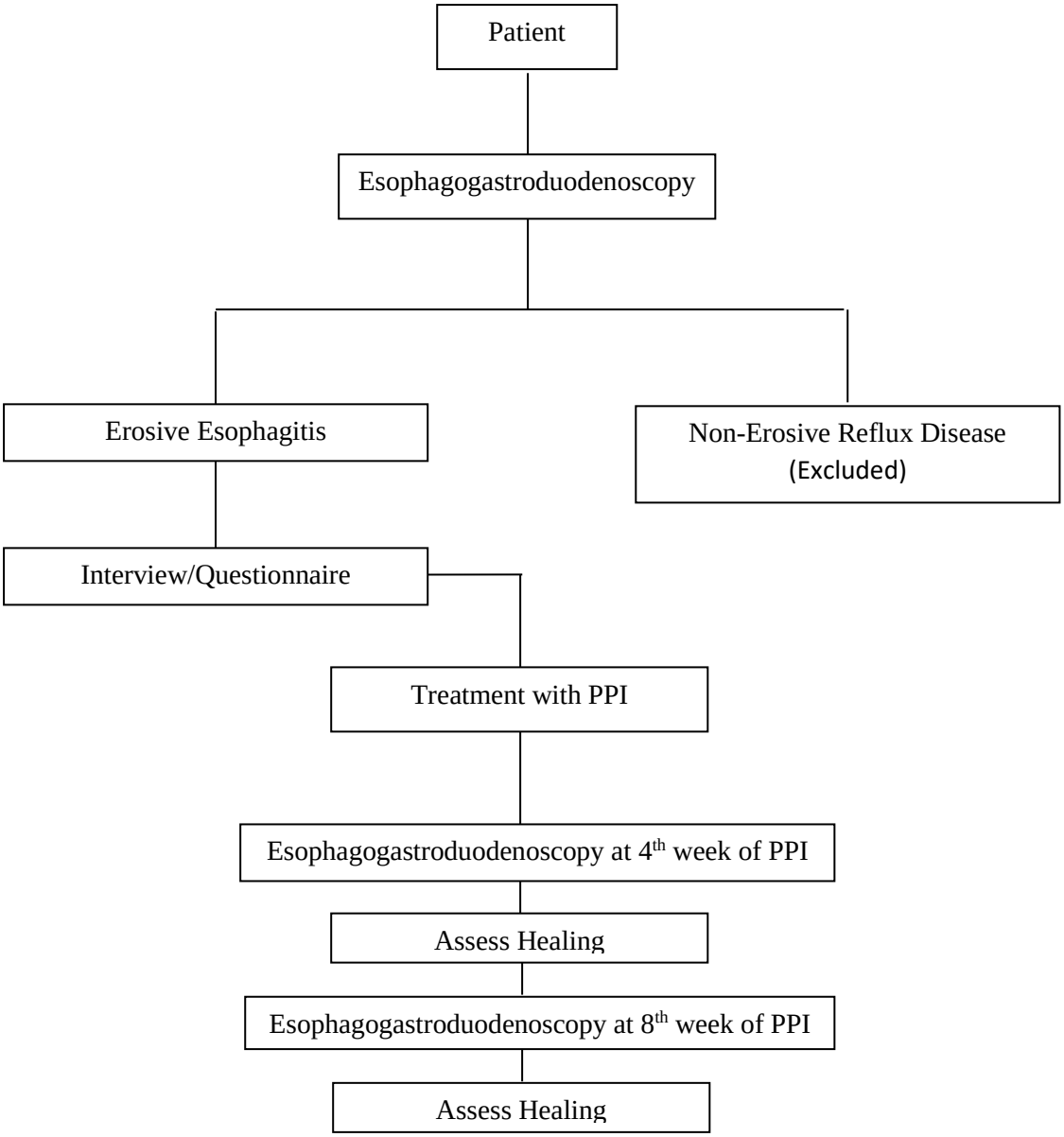
All the consenting patients seen at the OPD and referrals from the wards who are candidates for EGD due to abdominal pain intractable to PPI, GERD like symptoms (heartburn and regurgitation), dyspeptic symptoms (early satiety, post-prandial fullness, epigastric pain and epigastric burning) will be recruited for the study. There are no benefits or compensations that will be provided for the patients in this study.

As majority of the patients in this institution belong to the geriatric population, medical risk evaluation will be done by the senior residents in the ward and OPD, if necessary. The need for procedure will be emphasized and the risks and complications such as throat discomfort, abdominal pain, perforation, bleeding will be highly explained. Outmost care and safety will be assured to the patients as this will all be done with the assistance of service consultants.

All the procedures will be done by the fellow in-training with the assistance of service consultant for the day (see Appendix A for the list of service consultants per day). All patients who are endoscopically diagnosed by the fellow in-training and as agreed upon by the service consultant of the day with erosive esophagitis, as classified according to Los Angeles (LA), will be included in the study. They will be asked if symptom like heartburn, acid regurgitation, epigastric pain, bloatedness and dysphagia are present and this will be put into record.

The medical records, including age, sex, height, weight, body mass index, smoking, alcohol use and co-morbid illnesses (diabetes mellitus, hypertension, coronary artery disease, etc) will be put into record.

All patients will be started on empiric proton pump inhibitor using Omeprazole 40mg/cap, 1 capsule once a day for 8 weeks. On the 4^{th} week of treatment, all patients will undergo repeat esophago-gastroduodenoscopy to assess for esophageal mucosal healing as per assistance and review of the service consultant of the day. Only patients who had minimal or without signs of mucosal healing and who claimed to have less than 50% decrease of symptoms, the Omeprazole will be increased to 40mg/cap, 1 capsule twice a day. Repeat esophagogastroduodenoscopy with the assistance of service consultant of the day will be done to all patients after 8 weeks again to assess the esophageal mucosa.



Study Population

Inclusion Criteria:

1) Age > 50 years old
2) Male and non-pregnant women
3) Endoscopic finding of erosive esophagitis of any classification (LA Grade A to D)

Exclusion Criteria:

1) History of previous esophageal or gastric surgery
2) Esophageal stricture or Upper Gastrointestinal Tract Malignancy
3) Psychiatric disorder
4) Significant illness that may limit the ability to complete the questionnaire

Withdrawal Criteria

1) Patients who are not able to follow up at 4th week of the study.
2) Patients who are not able to take the medication (Omeprazole) as explained while in the study.
3) Patients who had medical condition, such as myocardial infarction, stroke, malignancies and operations while enrolled in the study.

Sample Size

In identifying the clinical symptoms, co-morbid illness and endoscopic response to treatment of erosive esophagitis, a 95% confidence level and 10% confidence interval will require a minimum sample size of 62. The computation is based on the assumption of a 20% proportion for symptoms/co-morbidities.

Manual Computation

$$n = \frac{Z^2 * p * (1 - p)}{e^2}$$

$$n = \frac{1.96^2 * 0.20 * (1 - 0.20)}{0.10^2} = 62$$

Z – z value at 95% confidence level

p- anticipated proportion of patients who will experience relief after the treatment.

E – Margin of Error (confidence interval)

Statistical Test

Descriptive statistics will be used to present the results. Specifically, proportions will be computed, thus most common clinical symptoms and co-morbid illness associated with erosive esophagitis will be identified. Lastly, proportion of patients who experienced relief will also be presented.

Results and Discussions

Fifty-four patients were included in the study and three of them were lost to follow up. Results show that the average age of patients included in the study is around 68 years old, which deviates from a standard deviation of 67.8. Results also show that patients with erosive esophagitis are mostly male (56.9%) with an average BMI of 22.6. Moreover, in terms of EGD Findings, none of the patients are of grade C nor grade D, but most of them are classified as Grade A (88.2%) while 11.8% are Grade B. In terms of Medical History, results show that only 5.9% of the patients have history of CAD, while 76.9% have history of hypertension and 52.9% have DM. Lastly, results also show that 52.9% of the patients are smoker while 56.9% drinks alcoholic beverages.

Table 1. Patient Baseline Characteristics

Patient Baseline Characteristics (n=51)	
Age (years), mean±sd	67.8 ± 10.0
Sex, n, %	
Male	29 (56.9)
Female	23 (45.1)
Body Mass Index, mean±sd	22.6 ± 2.4
EGD Findings	
Los Angeles Classification Grade A	45 (88.2)
Los Angeles Classification Grade B	6 (11.8)
Los Angeles Classification Grade C	0 (0.0)
Los Angeles Classification Grade D	0 (0.0)
Medical History, n, %	
Coronary Artery Disease	3 (5.9)
History of Hypertension	39 (76.9)
Diabetes Mellitus	27 (52.9)
Smoker	27 (52.9)
Alcoholic Beverage	29 (56.9)

Table 2. Symptoms of Gastroesophageal Reflux Disease

Table below shows that the most common symptom for patients with Gastroesophageal Reflux Disease is bloatednes (74.51%) followed by epigastric pain (68.63%) and heart burn (64.71%). On the other hand, table below shows that hoarseness is only experienced by 9.8% of the patients while globus is experienced by only 23.53% of the patients.

Symptoms	**n**	**%**
Heartburn	33	64.71
Acid Regurgitation	27	52.94
Epigastric Pain	35	68.63
Hoarseness	5	9.80
Globus	12	23.53
Bloatedness	38	74.51
Dysphagia	9	17.65

Table 3. Endoscopic response after 4 and 8 weeks of treatment with proton pump inhibitor

Results show that 50.98% of the patients are already healed at 4th week after treatment with proton pump inhibitor, while it took 8 weeks for 39.22% to be healed. Moreover, in total, 90% of the patients are while the 10% are not.

	n	**%**
Healed at 4 Weeks	26	50.98
Healed at 8 weeks	20	39.22
Total Healed up to 8 weeks	46	90.20
Not Healed	5	9.80

Conclusion

This prospective cohort study provides further information with regards to the different presenting manifestations of GERD related symptoms among elderly and their response to treatment. Although this is not a randomized trial, this carefully analyzed and designed study provides improvement in our knowledge of treatment of efficacy.

Elderly patients may have different clinical manifestation regardless of the severity of esophagitis and have higher risk for complications of GERD. Some may have multiple co-morbidities requiring anti-platelet and NSAIDs, and they are often on different medications raising concerns of

different drug interactions. Physicians should always be aware of atypical presentations of GERD and should have lower threshold of treating such conditions to prevent further complications.

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