

The Prevalence of Reflux Esophagitis in the Elderly and Its Associated Risk Factors

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ABSTRACT

Background: Reflux esophagitis is a common problem in the elderly. Compare to the Western countries, esophageal cancer where reflux esophagitis is the most predominant risk factor is considered rare in Asia. Many other risk factors have not been well studied especially in most Asian countries. The objective of this study is to evaluate the presence of reflux esophagitis in elderly patients and its associated risk factors.

Method: This was a cross-sectional study in elderly patients who underwent upper gastrointestinal endoscopy. Patients who received long-term proton pump inhibitor (PPI) therapy, suffered from gastrointestinal malignancies, recently receiving chemotherapy agents, diagnosed with cerebrovascular disease or *Helicobacter pylori* infection were excluded. Statistical analyses were performed using the SPSS software version 17 (Chicago, Illinois, USA).

Results: A total of 238 elderly patients were enrolled. Patients' mean age was 69.8 ± 6.8 years old. Reflux esophagitis was found in 22 (9.2%) patients. Several comorbidities were found in these patients, such as diabetes, hypertension, coronary artery disease, chronic kidney disease, and liver cirrhosis. The only factor that associated with reflux esophagitis was the presence of hiatus hernia esophagus ($p = 0.038$). However, reflux esophagitis seemed to be more found in the elderly patients who have history of reflux inducing drugs consumption without any proton pump inhibitor (PPI) protection.

Conclusion: Reflux esophagitis is still a major problem in the elderly. The presence of hiatus hernia might give an important consideration of upper gastrointestinal endoscopy screening. However, it would be a debate matter with regards to the cost burden and the low risk of esophageal cancer in Asian countries.

Keywords: reflux esophagitis, elderly, hiatus hernia, proton pump inhibitor

ABSTRAK

Latar belakang: Esofagitis refluks merupakan kondisi yang cukup sering ditemukan pada pasien usia lanjut. Kejadian kanker esofagus, dimana esofagitis merupakan faktor risiko penting masih dianggap jarang di kebanyakan negara Asia. Banyak faktor risiko lain penyebab kejadian kanker esofagus masih banyak belum diketahui. Studi ini ditujukan untuk mencari prevalensi esofagitis refluks pada pasien usia lanjut dan faktor-faktor yang berhubungan.

Metode: Studi ini adalah studi potong lintang pada kelompok usia lanjut yang menjalani prosedur pemeriksaan endoskopi saluran cerna atas. Pasien yang sudah mendapatkan terapi penghambat pompa proton jangka panjang, pasien dengan keganasan saluran cerna, pasien yang baru saja mendapatkan obat kemoterapi, pasien dengan kelainan otak dan pembuluh darah dan juga pasien yang terbukti terdapat infeksi kuman *H. pylori* dieksklusi.

Analisa statistik dilakukan dengan menggunakan program SPSS versi 17 (Chicago, Illinois, USA).

Hasil: Dari 238 pasien usia lanjut didapatkan esophagitis refluks sebanyak 22 (9.2%) pasien. Rerata usia pasien adalah 69.8 ± 6.8 tahun. Beberapa komorbiditas yang ditemukan seperti, diabetes, hipertensi, penyakit jantung koroner, penyakit ginjal kronik, dan sirosis hati. Satu-satunya faktor yang berhubungan dengan kejadian esofagitis refluks adalah adanya hernia hiatus esofagus ($p = 0,038$). Tetapi, esofagitis refluks cenderung ditemukan lebih banyak pada pasien usia lanjut yang memiliki riwayat konsumsi obat yang bisa mencetuskan kondisi refluks tanpa adanya perlindungan obat anti asam.

Simpulan: Esofagitis refluks masih merupakan masalah besar pada pasien usia lanjut. Terdapatnya hernia hiatus bisa memberikan pertimbangan penting untuk dilakukannya pemeriksaan penyaring endoskopi saluran cerna atas. Tetapi hal ini masih menjadi perdebatan dengan mempertimbangkan beban biaya dan rendahnya kejadian kanker esofagus di sebagian besar negara Asia.

Kata kunci: esofagitis refluks, pasien usia lanjut, hernia hiatus, penghambat pompa proton

INTRODUCTION

Reflux esophagitis is a common problem that might be under diagnosed in the elderly population. The symptom of heartburn might not be clear enough since elderly people usually don't have any specific signs and symptoms due to multiple conditions.^{1,2} Chest pain or chest discomfort is an important symptom for the elderly, however this symptoms is not easily distinguishable from cardiac problems.³

Looking back at this problem, Asian countries might have different perspective and horizon compared to the Westerns because of low prevalence of Barret's esophagus and esophageal cancer. External factors, such as oral medication, could become an important risk factor for esophagitis in elderly since multi-medication is a common habit in most Asian countries.^{4,5}

However, evidence is still lacking on what other important factors that may cause reflux esophagitis in elderly although knowledge on these factors is important in clinical practice. Therefore, this study was aimed to evaluate the presence of reflux esophagitis in elderly patients and to find its associated risk factors.

METHOD

This was a cross-sectional study of elderly patients in a private hospital in Jakarta between 2011 and 2013. Subjects were included if they underwent gastroduodenoscopy for upper gastrointestinal (GI) symptoms or medical check-up for a history of upper GI problems. Patients with esophageal and stomach cancers, patients with non-gastrointestinal cancer who just recently received chemotherapy, patients with history of long-term proton pump inhibitor (PPI) therapy (more than 3 months), patients with acute coronary syndrome, patients with recent

cerebrovascular disease, and patients who were diagnosed with *H. pylori* infection were excluded. This study has been approved by local hospital ethics committee.

Data obtained were patients' demography, clinical symptoms, co-morbidities, and gastroscopy findings. Data were presented descriptively. Associations between groups were analyzed using Chi-square or Fisher's exact test. A p value of less than 0.05 was considered significant. Statistical analyses were performed using the SPSS software version 17.00 for Windows PC (SPSS Inc., Chicago, Illinois, USA).

RESULTS

A total of 238 elderly patients were included based on endoscopy database with a mean age of 69.8 ± 6.8 years old. About more than half of the patient (50.4%) were men. Several comorbidities were found in these patients, such as diabetes, hypertension, coronary artery disease, chronic kidney disease, non-GI cancer, and liver cirrhosis (Table 1).

Table 1. Comorbidities found in elderly patients underwent upper gastroscopy (n = 238)

Comorbidity	n (%)
Diabetes mellitus	71 (29.8)
Hypertension	109 (45.8)
Coronary artery disease	67 (28.2)
Chronic kidney disease	30 (12.6)
Cancer	28 (11.8)
Liver Cirrhosis	60 (25.2)

Table 2. Reason for upper GI endoscopy examination (n = 238)

Comorbidity	n (%)
Diabetes mellitus	71 (29.8)
Hypertension	109 (45.8)
Coronary artery disease	67 (28.2)
Chronic kidney disease	30 (12.6)
Cancer	28 (11.8)
Liver Cirrhosis	60 (25.2)

Based on LA classification, esophagitis was found in 22 (9.2%) patients comprising of grade A in 16 (6.7%) patients, grade C in 2 (0.8%) patients, and grade D in 6 (2.5%) patients. The only factor that influenced esophagitis in the elderly was the presence of hiatal hernia of the esophagus (Table 3).

Table 3. Factors associated with esophagitis

Risk factor	Esophagitis n (%)	No esophagitis n (%)	p value (Chi-square test)
NSAID use			
yes	0	15 (100)	0.170
no	22 (11.2)	174 (88.8)	
Oral antiplatelet			
yes	3 (5.9%)	48 (94.1)	0.236
no	19 (12.3)	144 (87.7)	
Presence of hiatus hernia			
yes	9 (16.4)	46 (83.6)	0.038
no	13 (7.1)	170 (92.9)	
Others (anti-hypersensitive, anti-diabetics, anti-tuberculosis)			
yes	9 (11.5)	69 (88.5)	0.377
no	13 (8.0)	149 (92.0)	

NSAID: non-steroidal anti-inflammatory drugs

There was no significance difference between elderly patients with or without reflux-inducing drugs consumption who received recent PPI therapy in the prevalence of reflux esophagitis, however in reflux esophagitis patients who were taking reflux inducing drugs without any PPI protection seemed to be more found compared to those who received PPI therapy (Table 4).

Table 4. Association between esophagitis and the use of proton pump inhibitor (PPI)

Risk factor	Esophagitis n (%)	No esophagitis n (%)	p value (Chi-square test)
Reflux-inducing drugs			
With PPI	1 (10)	9 (90)	1.000*
No PPI	8 (8.3)	88 (97)	
No reflux-inducing drugs			
With PPI	0	8 (100)	1.000*
No PPI	13 (10.3)	113 (89.7)	

*Fisher's exact test; PPI: proton pump inhibitor

DISCUSSION

To our knowledge, this is the first study in Indonesia which represents the biggest country in Southeast Asia looking at the magnitude of the reflux esophagitis problem in the elderly population with history of multi-medication use and other associated factors. Gastroesophageal reflux disease (GERD), which is a well-known risk factor for Barrett's esophagus and esophageal cancer, has given a different perspective

for Asian countries when compared to the Western countries. GERD and reflux esophagitis are often overlooked because of lower incidence of Barrett's esophagus and esophageal adenocarcinoma in most Asian countries.^{6,7,8}

GERD, which can further lead to a pre-cancerous condition or Barrett's esophagus, is almost always being connected to the transient lower esophageal sphincter (LES) pressure problem although GERD could also occur in people with normal LES pressure. Decreased LES pressure is a complex problem since there are many factors can be involved, such as medications, food, and advancing age. Multi-medication use in elderly population is the most common situation in daily practice. The most common medications used in clinical practice for elderly patients are oral anti-platelet agents, oral anti hypertensive agents, oral anticoagulant agents, and non-steroidal anti-inflammatory drugs (NSAID).

Co-morbidity in elderly patients such as chronic kidney disease (CKD), cardiomyopathy, liver cirrhosis, and diabetes mellitus could also lead to gastrointestinal or duodenal hypomotility condition and burden the acid reflux condition.^{5,6} Body mass index (BMI) might not become an issue since most of our elderly patients have normal BMI based on WHO criteria for Asian population. Our study showed that most of elderly patients who underwent upper GI endoscopy also had several chronic diseases. This is typical for referral hospitals because of patients can be referred with many medical conditions requiring a multidisciplinary approach. It is also a reason why these patients had multiple medications. However, this clinical situation can be a very good example for real life cases in daily practice, not only for gastroenterologists but also for general internal medicine specialists who work in a primary health care institute.

The prevalence of reflux esophagitis in our study population was quite high, showing that this condition should become one of our priorities in dealing with elderly patients since it may cause bigger problem as it might increase the risk of esophageal cancer. Our study also showed that most of elderly patients with reflux esophagitis had less heartburn symptom; this condition have also been reported by other studies.^{2,9} We know that heartburn symptom is one of the keys to diagnose GERD; however, in most elderly patients it might not be an important indicator for clinician's awareness of the reflux esophagitis condition.⁹

Based on our study results, hiatal hernia is significantly associated with reflux esophagitis.

Interestingly, the multi-medication usage did not give any impact to the reflux esophagitis severity in the elderly especially the use of high risk medication for gastrointestinal problem such as NSAID and anti-platelet. Some important habits, such as smoking and alcohol drinking, might be difficult to evaluate in elderly patients. However, alcohol drinking is not a culture for most Indonesians. The difficulty to find out the clear history of intermittent, short term or long term usage of proton pump inhibitor (PPI) can be one of the reasons since these patients are mostly referred from other hospital and sometimes they could not recognized the anti-acid drugs, but our data analysis showed that there was no significance difference between patients who received PPI therapy or not. But, PPI therapy is seemed to be a protective agent in elderly patients who received reflux inducing drugs and this mean that reflux inducing agents still should be considered as a risk factor for reflux esophagitis in the elderly.

The complex clinical problems in the elderly population can also become another reason for these findings as this was only a cross-sectional study. However, this study has given an important insight about the impact of the disease in elderly population. Despite the effectiveness of PPI therapy to reduce GERD symptoms, the management of reflux esophagitis would become a challenging condition as there has been evidence about the risk of long-term PPI therapy.^{10,11} On the other perspective, multi-medication or long-term use of high-risk medicine for reflux esophagitis condition are difficult to be controlled because of the needs itself. The cost burden also would interfere the clinical management in the elderly.¹² Treatment of GERD in the elderly would still become a debate in the near future considering the low prevalence of Barrett's esophagus and low incidence of adenocarcinoma of the esophagus in Asia.

CONCLUSION

Reflux esophagitis is still a major problem in the elderly. The multi-medication use is not associated with the incidence of reflux esophagitis. The presence of hiatal hernia might give an important consideration for upper gastrointestinal endoscopy screening recommendation.

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