Prevalence of Gastroesophageal Reflux Symptoms in Asthma Patients at Srinagarind Hospital

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Objective: *To determine the prevalence of gastroesophageal reflux symptoms in asthma patients at Srinagarind Hospital and compare them with a non-asthmatic control group.*
Material and Method: *A prospective study consisted of 151 asthma patients at the outpatient asthma clinic Srinagarind Hospital and 147 non-asthmatic patients as the control group. The study group and the control group were interviewed with questionnaire.*
Results: *Among the asthmatics, 26.5%, 30.5% and 12.6% experienced heartburn, regurgitation and both symptoms, respectively. While in the control group, 15.6%, 26.5% and 10.2% experienced heartburn, regurgitation and both symptoms.*
Conclusion: *The present study showed the prevalence of gastroesophageal reflux symptoms in asthmatic Thai patients and the control group to be 57% and 42.1%. Asthmatic patients had a greater prevalence than the control group but there was no statistically significant difference.*

Keywords: *Asthma patients, Heartburn, Regurgitation*

J Med Assoc Thai 2005; 88(5): 668-71
Full text. e-Journal: *http://www.medassocthai.org/journal*

The association between gastroesophageal reflux disease (GERD) and asthma was first described during the 19th century by Sir William Osler[1]. Subsequently, the incidence of GERD in adult asthmatics has been reported to range between 34% and 89%[2]. Approximately one half of asthmatics attending an asthma clinic experienced gastroesophageal reflux symptoms on a regular basis[3]. A physiologic study confirmed the high rates of asthma patients who had gastroesophageal reflux[4,5]. Sontag et al found that 40% of asthmatics had erosive esophagitis, 58% had hiatal hernias and more than 80% had abnormal gastroesophageal reflux based on ambulatory pH monitoring criteria[4,5]. Ambulatory pH monitoring has proved to be more sensitive and specific and has become the diagnostic standard for GERD[6] but is not practical for general practice. It can demonstrate abnormal ambulatory pH monitoring even in asymptomatic patients[7]. Field et al reported that 75%, 55% and 24% of asthmatic patients experienced heartburn, regurgitation and swallowing difficulties, respectively[3]. However, the prevalence of gastroesophageal reflux symptoms in asthmatic patients at Srinagarind Hospital is unknown.

The purpose of the present study was to estimate the prevalence of gastroesophageal reflux symptoms in asthmatic patients at Srinagarind Hospital and compare them with a non-asthmatic control group.

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Material and Method

Patient and controlled selection

Asthmatic patients: Both newly visited and follow-up patients, attending the outpatient asthma clinic from June 2002 to May 2003 were surveyed. All patients who fulfilled the following criteria for the definition of asthma were included in the present study. Patients had at least one of the following: an increase in FEV_1 of at least 15% after bronchodilator or a positive methacholine challenge test.

Control group: Control subjects were healthy people, not pregnant, and not asthmatics. Those aged

more than 15 years old were included in the study.

Prior to being surveyed both study and control group were asked whether they would be willing to participate in a research study. They were surveyed by a research nurse with the same questionnaire. The use of a questionnaire was approved by the institutional ethics committee.

Questionnaire

The questionnaire was designed to assess the gastroesophageal reflux symptoms, both heartburn and regurgitation modified from an asthma and GER questionnaire[3].

Statistical analysis

Descriptive measures for quantitative variables are reported as mean ± SD. Symptom prevalence between the asthma and control groups was compared using Pearson's X^2 test.

Results

One hundred fifty one asthmatic patients and one hundred and forty seven of the control group were included in the present study. Their clinical data are presented in Table 1. The mean age, height and body weight were similar in both groups. The ratio between male: female, smoker: non-smoker and alcohol: non-alcohol were similar in both groups.

The prevalence of gastroesophageal reflux symptoms in the asthmatic patients and control group was 57% and 42.1%, respectively. The prevalence of heartburn, regurgitation and both symptoms in the asthmatic patients was 26.5%, 30.5% and 12.6% while the prevalence of these symptoms in the control group was 15.6%, 26.5% and 10.2%, respectively (Table 2).

Discussion

The present study demonstrated that the prevalence of gastroesophageal reflux symptoms was common in asthmatic patients at Srinagarind Hospital and the control group but in the asthmatic patients there was greater prevalence than in the control group, however, there was no statistically significant difference between the two groups (p = 0.713). The symptoms of gastroesophageal reflux are heartburn, regurgitation or both symptoms. The most common symptom in both groups was regurgitation. Experience with heartburn and regurgitation was less common in both groups. The prevalence of heartburn and regurgitation symptoms in the asthmatic patients in the present study were less than previously reported[3] may be due to various factors. There are many conditions associated with gastroesophageal reflux disease such as obesity, cigarette smoking and alcohol consumption[1]. The clinical data in the present study showed that BMI, cigarette smoking and alcohol consumption in asthmatic patients were less than reported by Field et al.

There is controversy about the association between gastroesophageal reflux and asthma, but the exact nature of the relationship is unclear. Does asthma cause gastroesophageal reflux or gastroesophageal reflux make asthma worse? Moote et al demonstrated an increase in gastroesophageal reflux during methacholine induced bronchospasm in patients with mild asthma[8]. While there is high prevalence of asthma in

Table 1. Clinical data of the asthmatic patients and the control group

Clinical	Asthma (n = 151)	Control (n = 147)	p
Male:Female	50:101	60:87	0.17
Mean age (year) ± SD	45.63±11.70	40.10±10.98	0.25
Mean Height (cm) ± SD	157.36±8.28	158.78±8.48	0.15
Mean weight (kg) ± SD	60.83±10.56	59.92±11.18	0.48
BMI ± SD	24.41±3.41	23.82±3.53	0.15
Smoking:Non-smoking	16:135	20:127	0.74
Alcohol:Non-alcohol	26:125	25:122	0.99

Table 2. Prevalence of gastroesophageal reflux symptoms in asthmatic patients and the control group

	Gastroesophageal reflux symptoms (%)	Heartburn (%)	Regurgitation (%)	Heartburn and Regurgitation (%)	p
Asthma:Control	57:42.1	26.5:16.5	30.5:26.5	12.6:10.2	0.713

patients with gastroesophageal reflux and the beneficial effect of successful esophageal surgery on asthma has been reported[9,10]. But the results of controlled studies designed to demonstrated that gastroesophageal triggers asthma have been conflicting[11-15].

In summary the present study demonstrated that asthmatic patients attending the outpatient asthma clinic of Srinagarind Hospital had a high prevalence of gastroesophageal reflux symptoms but there was no statistically significant difference between the asthmatic patients and the control group. However, heartburn and regurgitation were less than previously by reported[3].

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ความซุกของอาการเจ็บ แสบ ร้อน บริเวณหน้าอก หรือขย้อนกรดจากกระเพาะอาหารเข้ามาในหลอดอาหารของผู้ป่วยหอบหืดโรงพยาบาลศรีนครินทร์

กิตติ จันทร์เลิศฤทธิ์, วัชรา บุญสวัสดิ์, อุไรวรรณ แซ่อุย

***วัตถุประสงค์**: เพื่อศึกษาความซุกของอาการเจ็บ แสบ ร้อนบริเวณหน้าอก หรือ ขย้อนกรดจากกระเพาะอาหารเข้ามาในหลอดอาหารของผู้ป่วยหอบหืด โรงพยาบาลศรีนครินทร์ และเปรียบเทียบกับคนปกติทั่วไป*

***วัสดุและวิธีการ**: ศึกษาจากผู้ป่วย โรงพยาบาลศรีนครินทร์ ที่ได้รับการวินิจฉัยตามเกณฑ์ว่าเป็นหอบหืด จำนวน 151 คน และคนทั่วไปที่ไม่มีประวัติของหอบหืด จำนวน 147 คน โดยการใช้แบบสอบถามชุดเดียวกันทั้ง 2 กลุ่ม*

***ผลการศึกษา**: ผู้ป่วยหอบหืด โรงพยาบาลศรีนครินทร์ เคยมีอาการเจ็บ แสบร้อนบริเวณหน้าอก หรือ อาการขย้อนกรดจากกระเพาะอาหารเข้ามาในหลอดอาหาร หรือมีอาการทั้ง 2 อาการร่วมด้วย 26.5% 30.5% และ 12.6% ตามลำดับ ในขณะที่กลุ่มคนทั่วไปที่ไม่มีประวัติของหอบหืด จะมีอาการดังกล่าว 15.6% 26.5% และ 10.2% ตามลำดับ*

***สรุป**: จากการศึกษาพบว่าผู้ป่วยหอบหืด โรงพยาบาลศรีนครินทร์ มีความซุกของอาการเจ็บ แสบ ร้อนบริเวณหน้าอก และ/หรือขย้อนกรดจากกระเพาะอาหารเข้ามาในหลอดอาหาร 57% ในขณะที่คนไทยทั่วไปที่ไม่มีประวัติหอบหืด จะมีความซุกดังกล่าว 42.1% และความซุกดังกล่าวในผู้ป่วยหอบหืด โรงพยาบาลศรีนครินทร์ สูงกว่ากลุ่มคนทั่วไปที่ไม่มีประวัติหอบหืด แต่ไม่มีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ*