

Anti-reflux surgery

**Korean Perspective and
Nation-wide Data**

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Korean Anti-Reflux Surgery Study Group

Prevalence of GERD in Korea

Telephone interview in 2008 (GERD Sx at least once a week) : 7.1%

Endoscopy-based prevalence in 2006; 7.91%

Doctor-diagnosed GERD ; 4.6% in 2005, 7.3% in 2008

Relatively low but rapidly increasing

SY Yang et al. Dig Dis Sci (2008)53:188-193

KN Shim et al. J Clin Gastroenterol 43 (2009);632-638

KM Kim, et al. Journal of Gastroenterology and Hepatology 27 (2012) 741-745

Prevalence of GERD in Korea

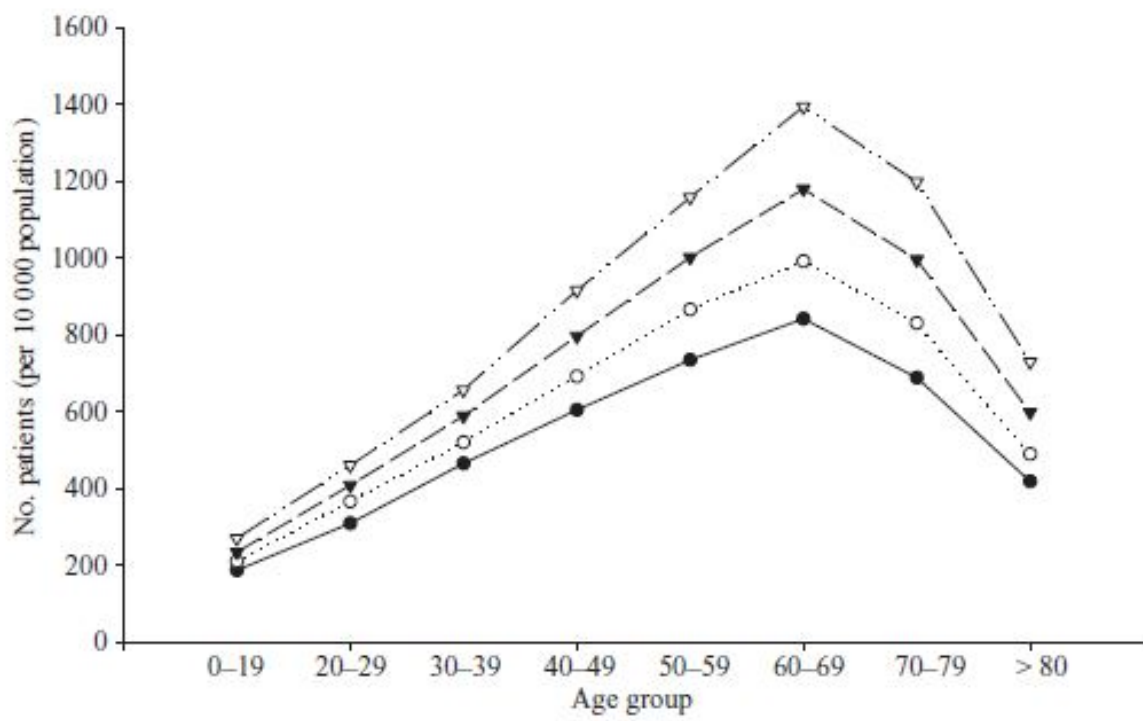


Figure 1 Age-specific prevalence rates (per 10 000 population) of patients with gastroesophageal reflux disease in Korea. ●, 2005; ○, 2006; ▼, 2007; ▽, 2008.

Characteristics of GERD in Korea

PPI is the mainstay of GERD treatment

Surgical options for GERD is not well known, even for surgeons.

Published Antireflux surgery in Korea

Yonsei Med J 50(1):89 - 94, 2009
DOI 10.3349/ymj.2009.50.1.89

Laparoscopic Nissen Fundoplication in Korean Patients with Gastroesophageal Reflux Disease

Sang Kuon Lee and Eung Kook Kim

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J Korean Surg Soc 2013;84:330-337
<http://dx.doi.org/10.4174/jkss.2013.84.6.330>

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Early experiences of minimally invasive surgery to treat gastroesophageal reflux disease

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Departments of Surgery and ¹Internal Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Published Antireflux surgery in Korea

	YMJ 2009	JKSS 2013
Institution	Catholic Univ.	Asan Medical Center
Period	2003 - 2008	2009 - 2012
No of cases	31	15
M/F	19 / 12	12 / 3
Type of OP	Nissen fundoplication	

Yonsei Med J 50(1):89-94, 2009
 DOI 10.3349/ymj.2009.50.1.89

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	YMJ 2009	JKSS 2013
Preoperative Sx	Typical 48.4% Atypical 51.6% Both 12.9%	Heartburn 80% Regurgitation 67% Dysphagia 33% Respiratory 27%
Postoperative Sx control	Complete 51.6% Partial 41.9% Not controlled 6.5%	Complete 80% Partial 13% Not controlled 7%
Postoperative dysphagia /narrowing	5 / 31 (16%) Endoscopic balloon	2 / 15 (13%) Transient

KARS Korean Anti-Reflux Surgery Study Group

Since 2010

Our activities are....

Scientific conference

Technical issues

Sharing the member's new experience

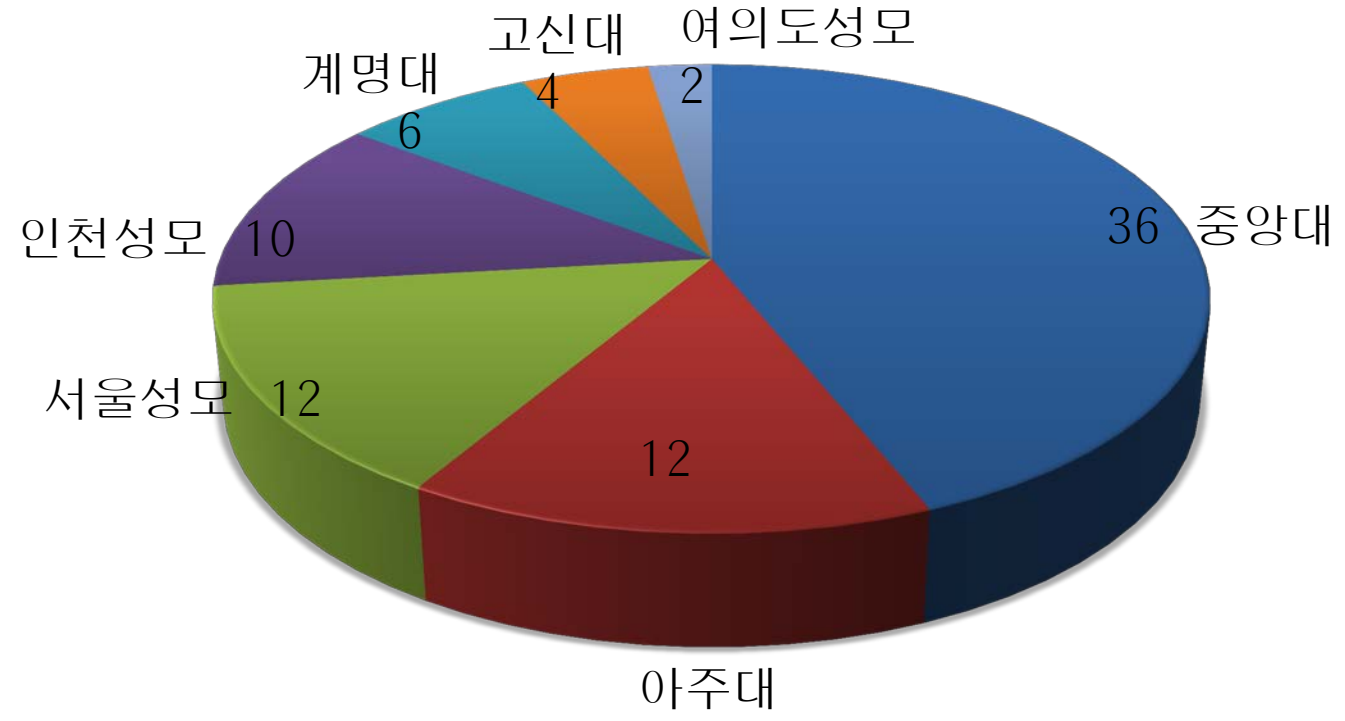
Inter-department learning with gastroenterologist and ENT

Hand-on workshop in Animal lab

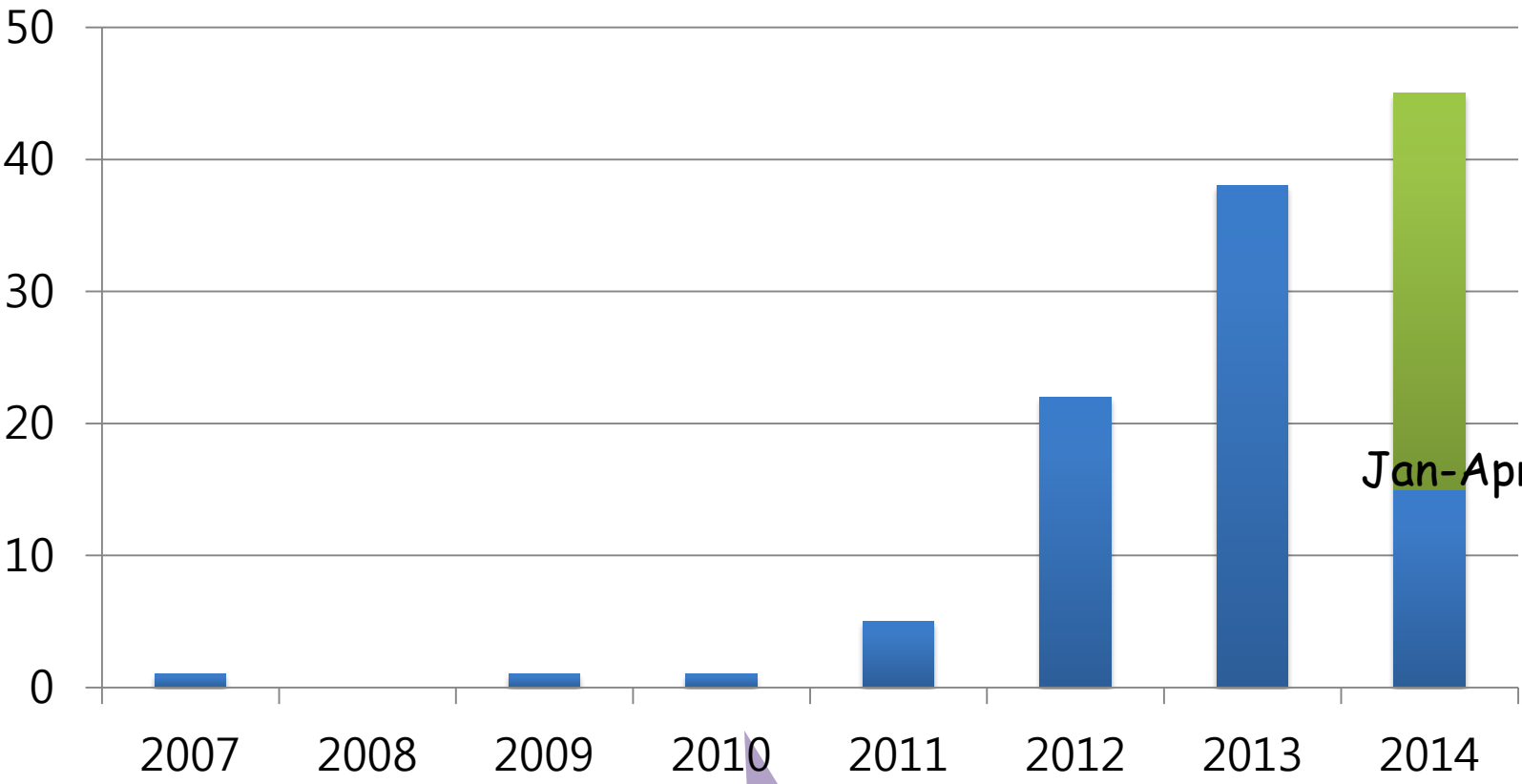
Data survey

Nation-wide data of GERD surgery in Korea

From 7 hospitals
8 surgeons' total experiences from their first case



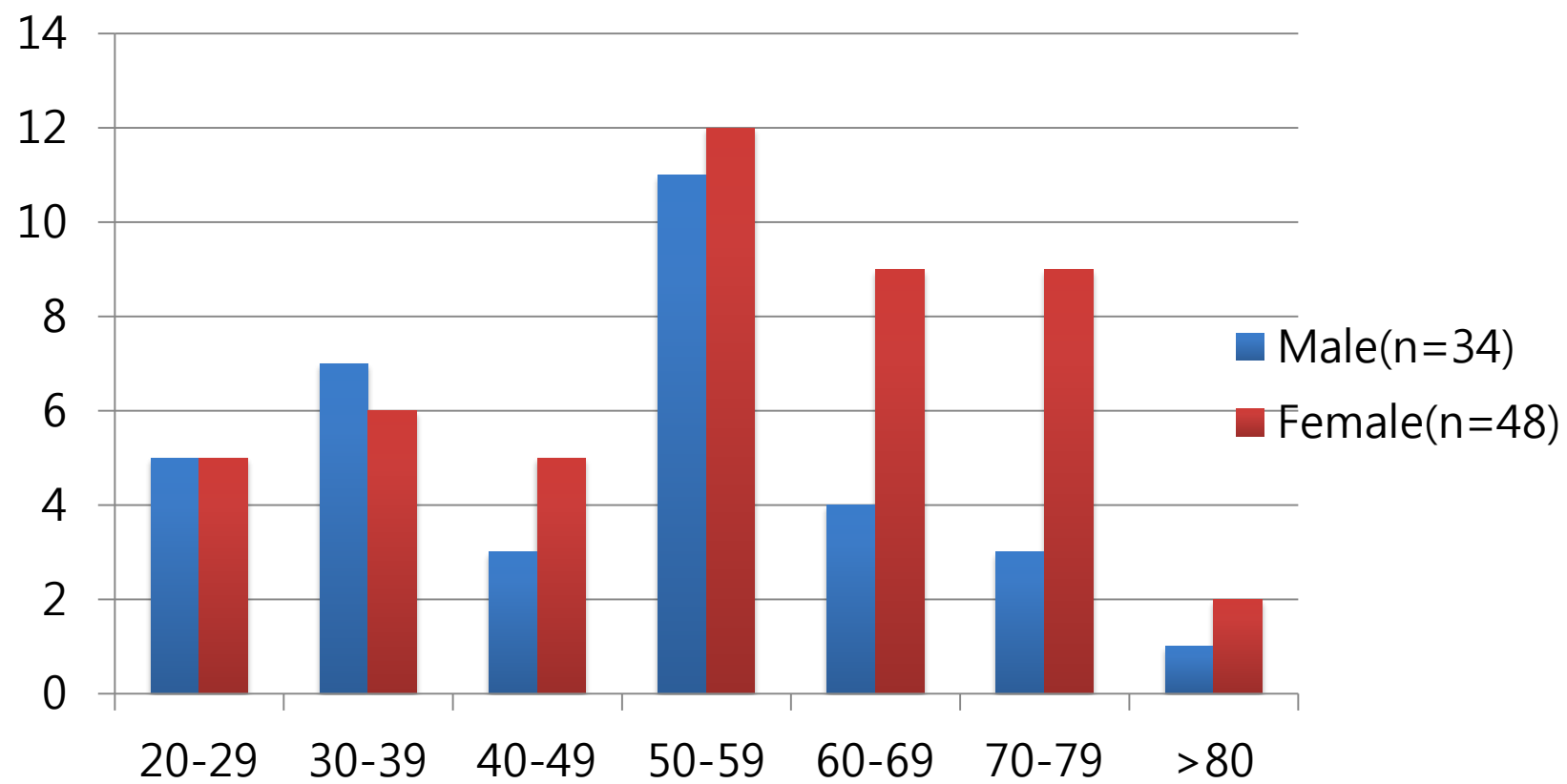
Number of cases ANTIREFLUX SURGERY



Jan-Apr. 2014.

The 1st KARS conference

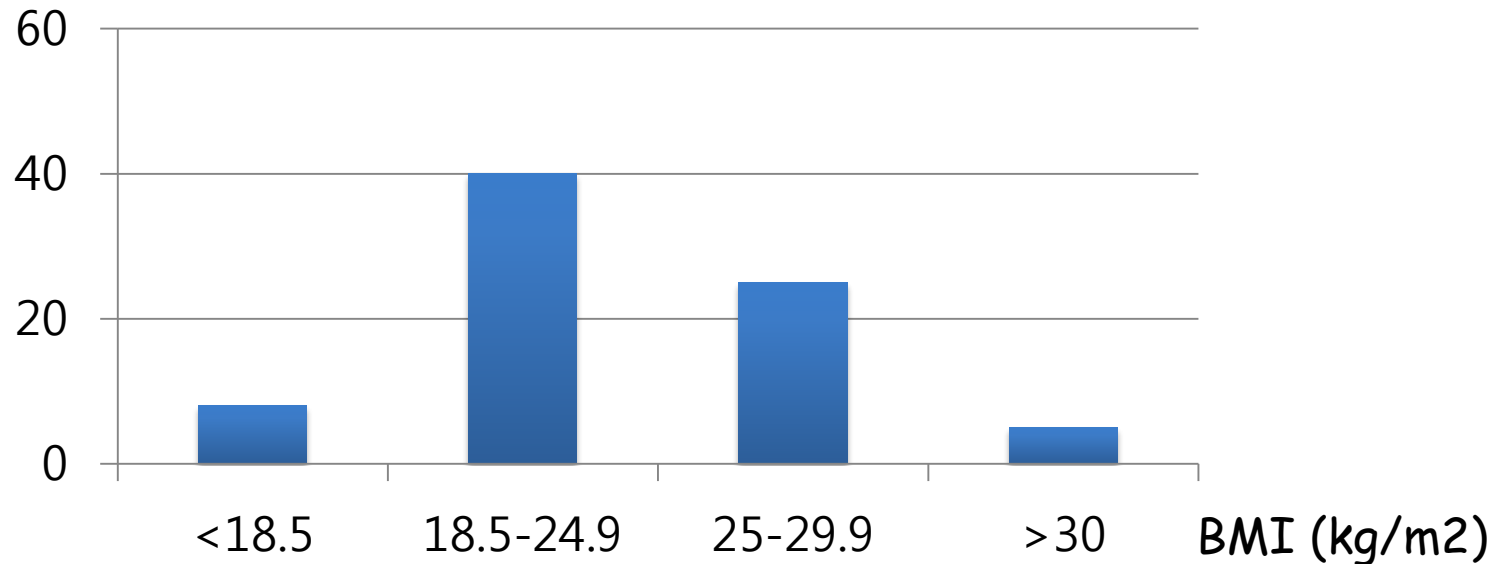
Age and Gender distribution



Mean age : 52.6 (21 - 86) years (Male 49.2 & Female 55.1)

Patients Characteristics

	yes	no
Comorbidities	27 (32.9%)	55 (67.1%)
Abdominal OP history	19 (23.2%)	62 (76.8%)
BMI (kg/m ²)	23.7±5.2 (15.2 - 52.5)	



GERD Sx Questionnaire

GERD (Gastroesophageal reflux disease)

등록번호 : _____ 이름 : _____ 성별/나이 / _____

문진표 (수술 전)


다음 문항을 읽고 해당되는 항목에 V 표시 하여 주시기 바랍니다.

II. 위식도역류질환의 "비전형적인 증상"에 관한 항목입니다.

1	귀하께서는 "비전형적인 증상" 중 어떤 증상을 가지고 계십니까?	<input type="checkbox"/> 없음 <input type="checkbox"/> 목의 이물감 <input type="checkbox"/> 목의 통증 <input type="checkbox"/> 짖은 목심 <input type="checkbox"/> 만성 기침 <input type="checkbox"/> 만성 가래, <input type="checkbox"/> 재발성 중이염 <input type="checkbox"/> 재발성 비염 <input type="checkbox"/> 기관지 천식 <input type="checkbox"/> 비 심장성 흉통 <input type="checkbox"/> 복합적인 증상 (주관식으로 기술 하시오)
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2	귀하의 "비전형적인 증상"은 얼마나 자주 발생합니까?	<input type="checkbox"/> 없음 <input type="checkbox"/> 주 당 1~2일 <input type="checkbox"/> 주 당 3~4일 <input type="checkbox"/> 주 당 5~6일 <input type="checkbox"/> 1주일 내내
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■ 다음의 그림을 보고 심한 정도를 V 표시해 주시기 바랍니다.

3	현재 "비전형적인 증상"의 심한 정도는 어느 정도입니까?	 <input type="checkbox"/> 없음 <input type="checkbox"/> 경미함 <input type="checkbox"/> 중등도 <input type="checkbox"/> 심함 <input type="checkbox"/> 매우심함
---	---------------------------------	--

GERD (Gastroesophageal reflux disease)

등록번호 : _____ 이름 : _____ 성별/나이 / _____

문진표 (수술 전)

다음 문항을 읽고 해당되는 항목에 V 표시 하여 주시기 바랍니다.

II. 위식도역류질환의 "증상 발현"에 관한 항목입니다.

1	증상이 시작된 때는 언제입니까?	_____년 _____월
2	증상이 지속된 기간은 얼마입니까? (개월 수로 표시)	_____개월

III. "위산분비억제제"에 관한 항목입니다.

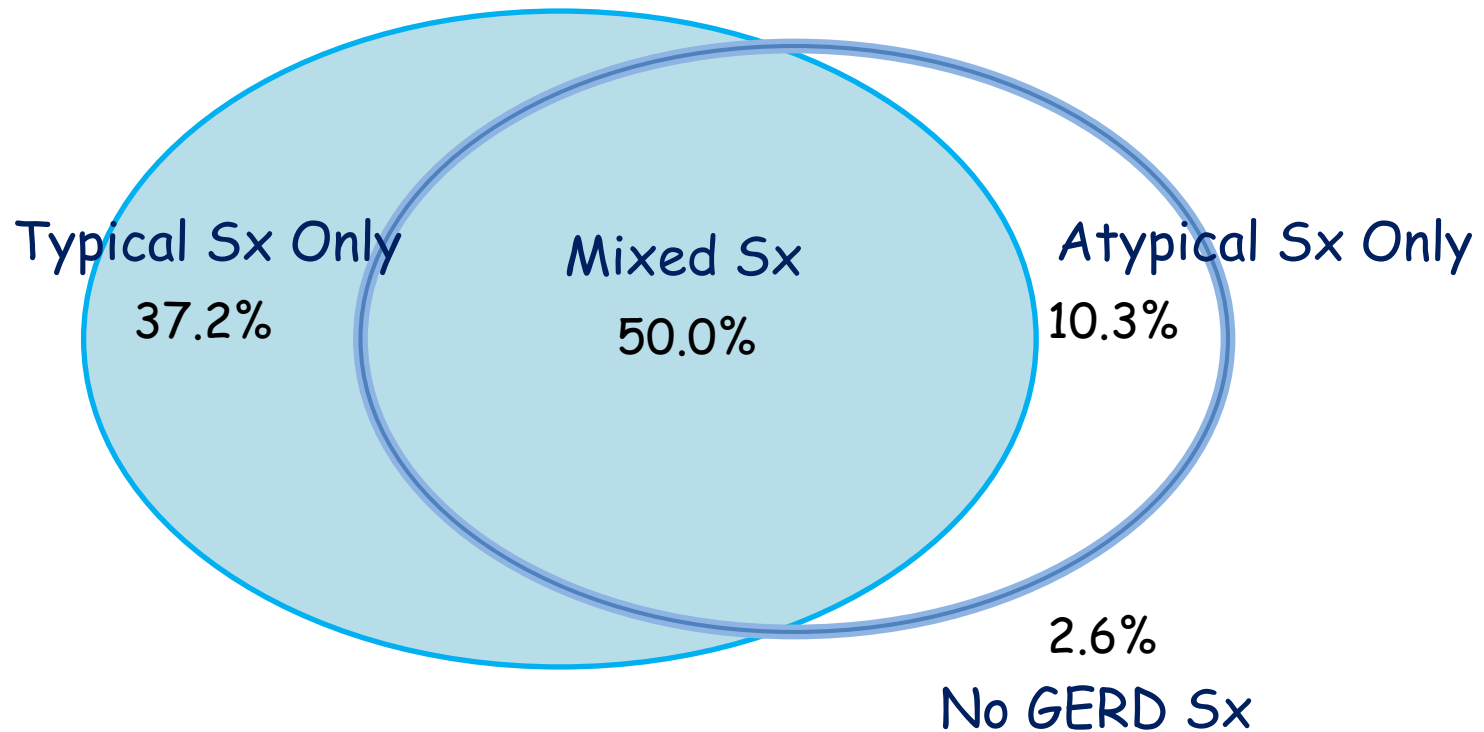
1	위산분비억제제 복용 기간은 얼마입니까? (개월 수로 표시)	_____개월
2	위산분비억제제 복용 후 증상이 호전 되었습니까?	<input type="checkbox"/> 아주 호전됨 <input type="checkbox"/> 꽤 호전됨 <input type="checkbox"/> 약간 호전됨 <input type="checkbox"/> 별로 호전되지 않음 <input type="checkbox"/> 전혀 호전되지 않음

Signature : _____

GERD Characteristics

Typical Sx (heartburn, regurgitation, epigastric pain)

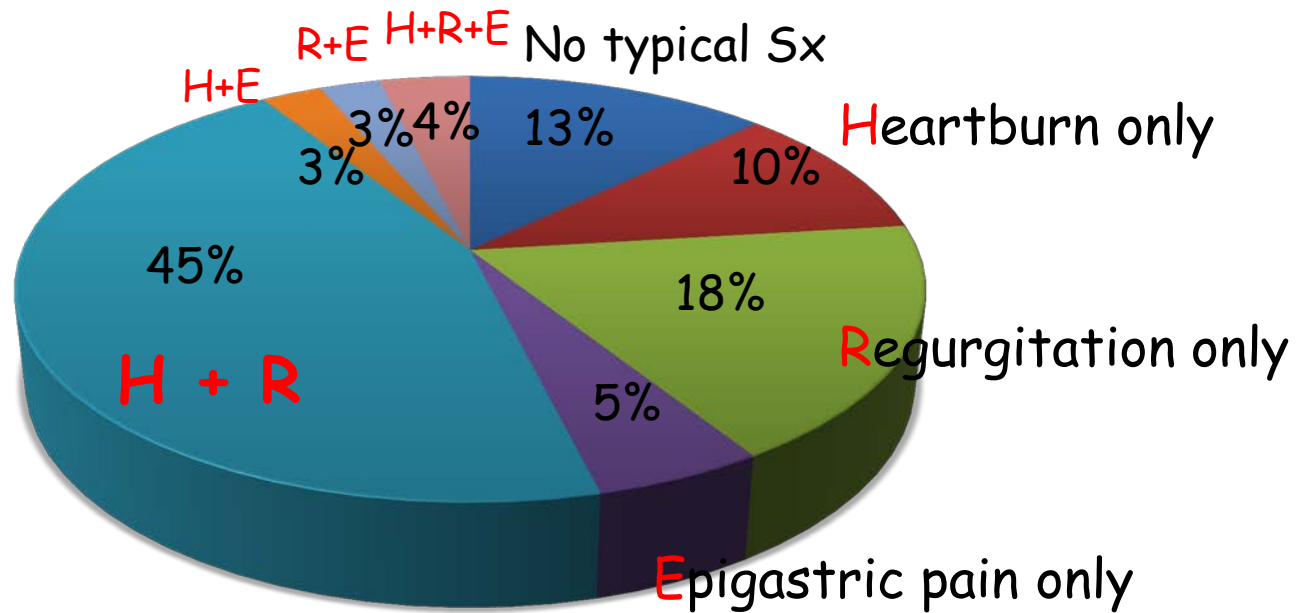
Atypical Sx (Globus sense, throat pain, etc)



GERD Characteristics _ Typical Sx

Typical Sx	Sx incidence%
Heartburn	61.5%
Regurgitation	69.2%
Epigastric pain	12.8%

Mean Sx score = 6.19±1.41 (2-8)



GERD Characteristics _ Atypical Sx

Sx	Patients (%)
No atypical Sx	31 (37.8%)
Globus sense	30 (38.5%)
Throat pain	16 (20.5%)
Hoarseness	5 (6.4%)
Chronic cough	3 (3.8%)
Asthma	1 (1.3%)
Rhinitis	1 (1.3%)
Chest pain	3 (3.8%)
Other sx	6 (7.7%)

Mean Sx score = 5.51 ± 1.74 (2-8)

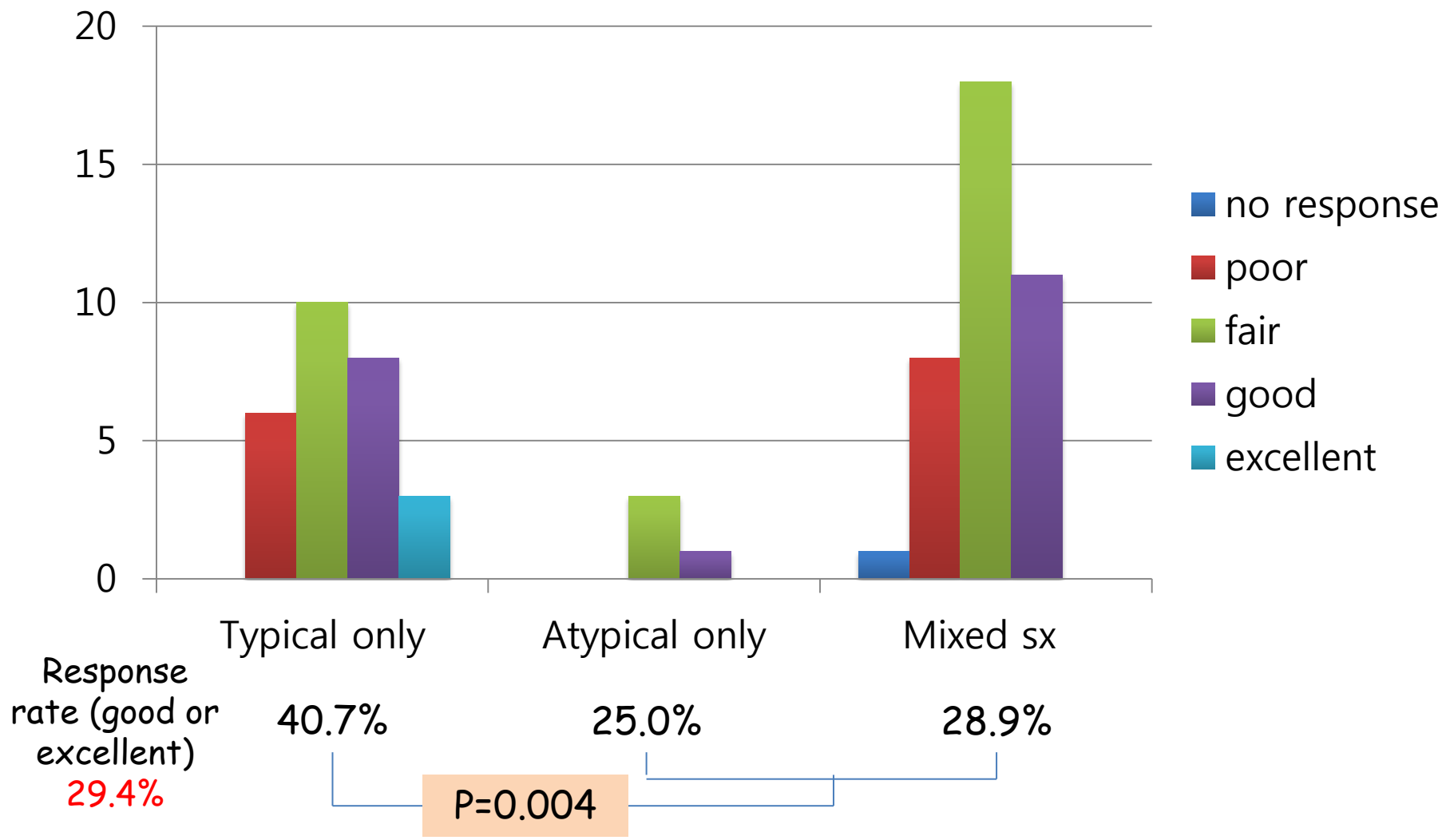
GERD Characteristics _ Durations

Mean duration of Sx was 66.1 months
(0 - 360 months)

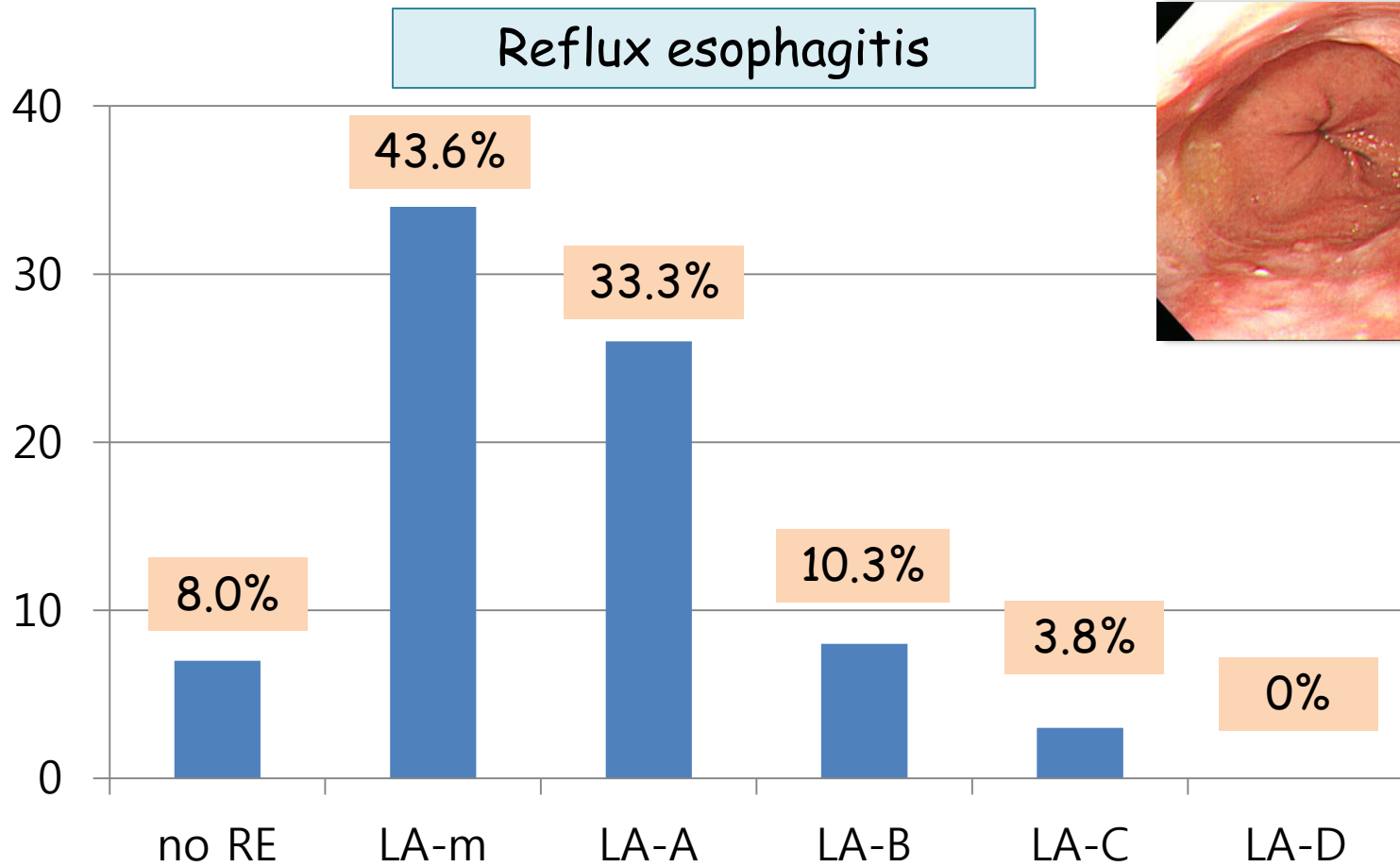
Mean duration of PPI medication was 32.1 months
(0 - 144 months)



Response of PPI

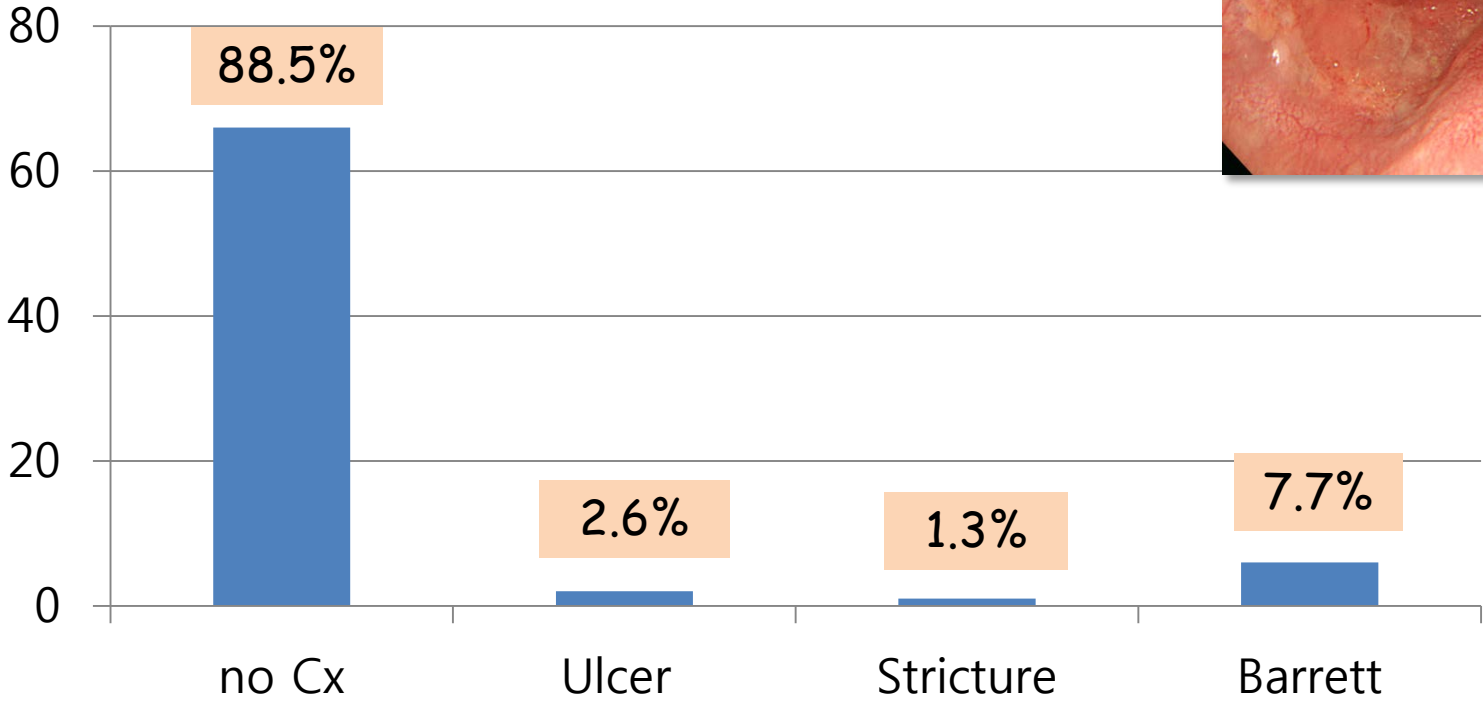
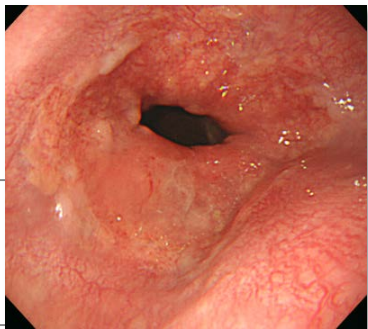


Preoperative studies - Endoscopy

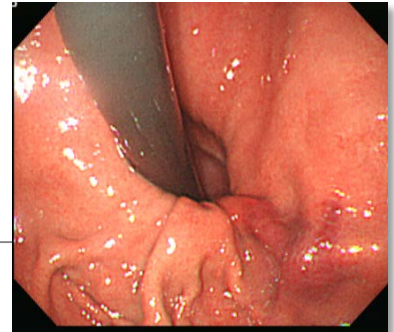


Preoperative studies - Endoscopy

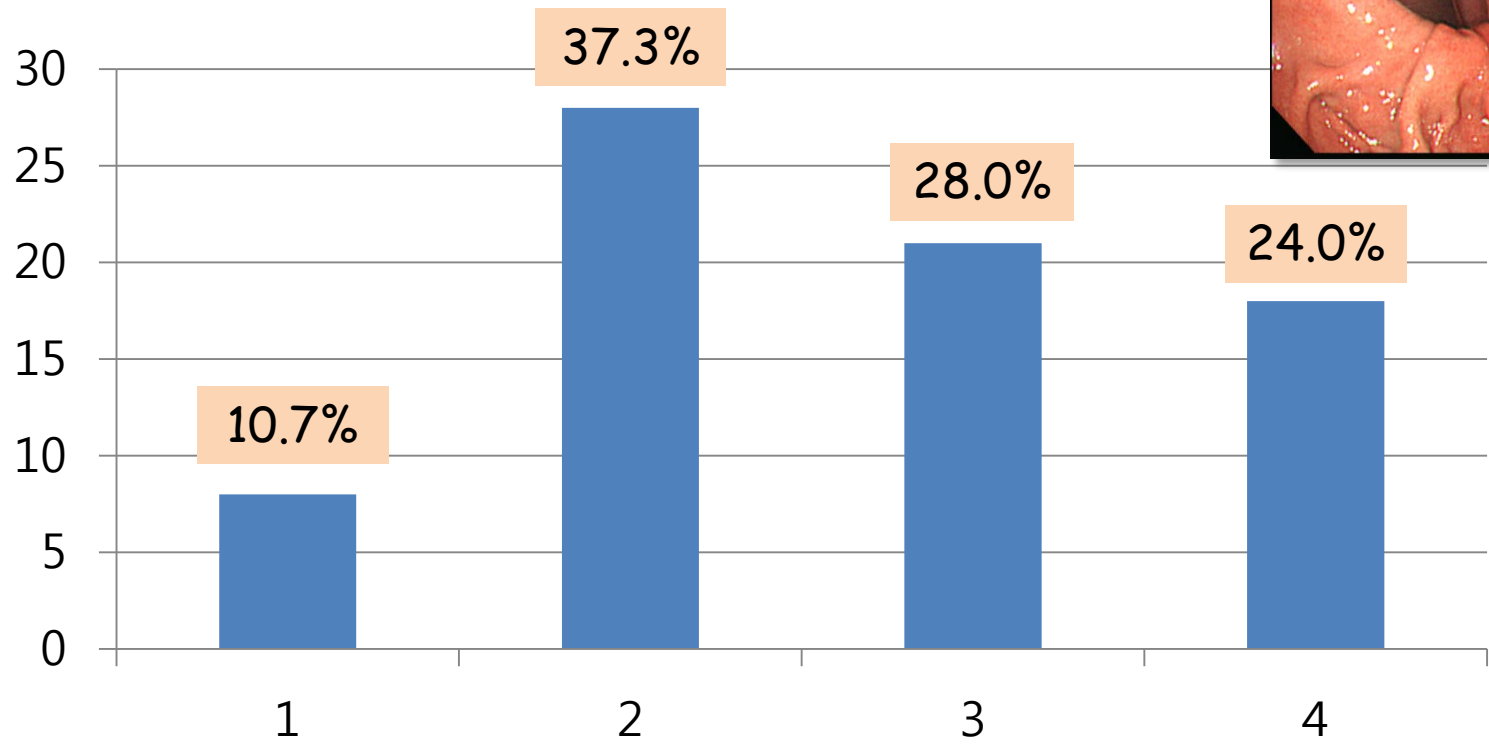
Complications



Preoperative studies - Endoscopy

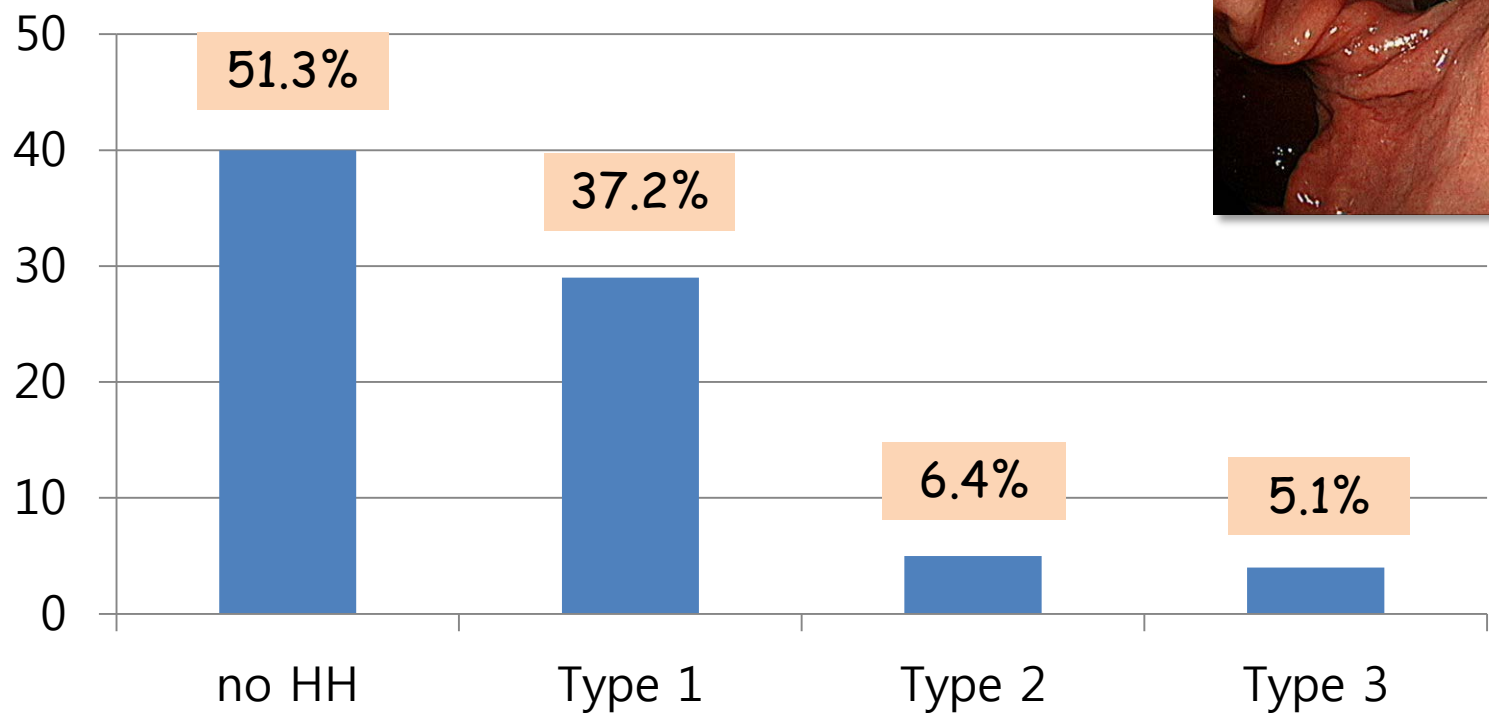
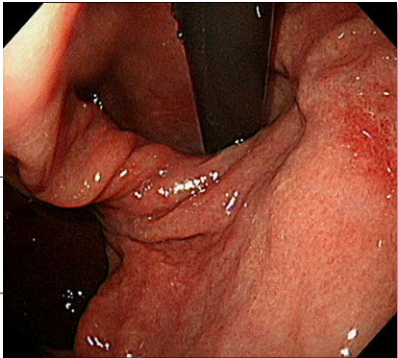


Hill's Grade



Preoperative studies - Endoscopy

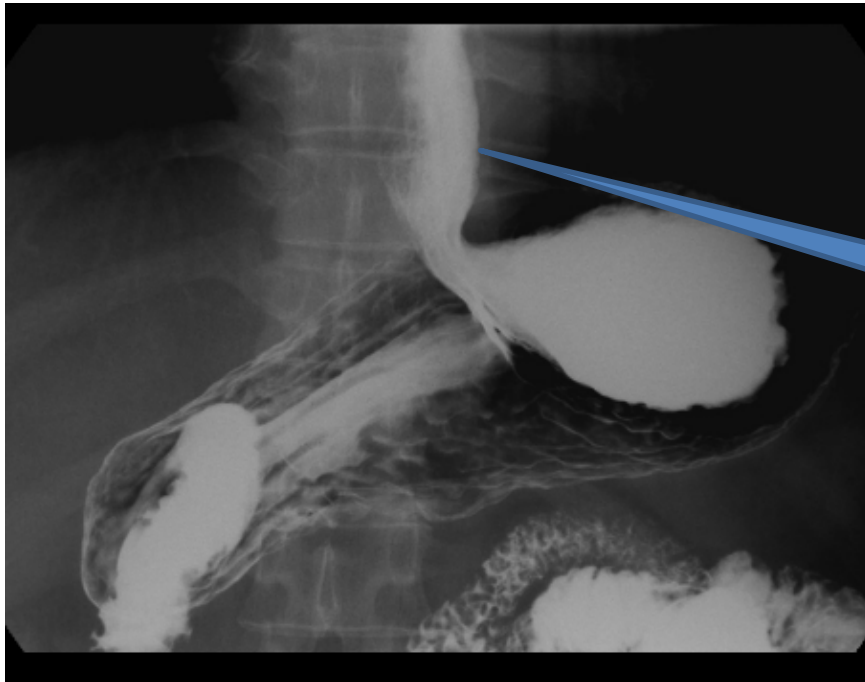
Hiatal Hernia



Preoperative studies - UGIS

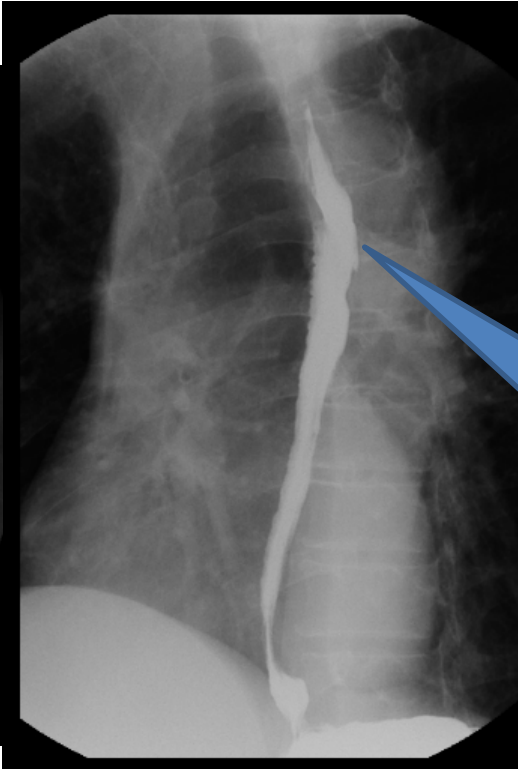
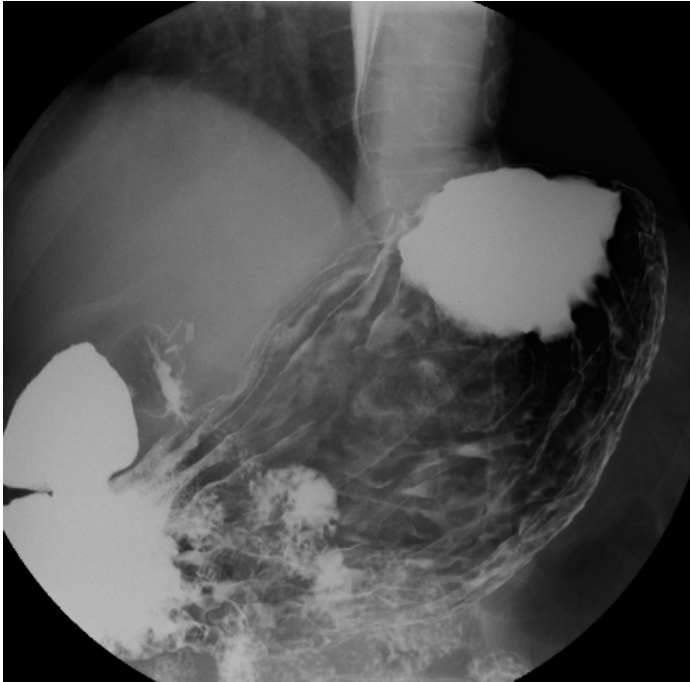
21 patients evaluated

10/21 (48%) Reflux of gastric contents to esophagus
No esophageal dysmotility



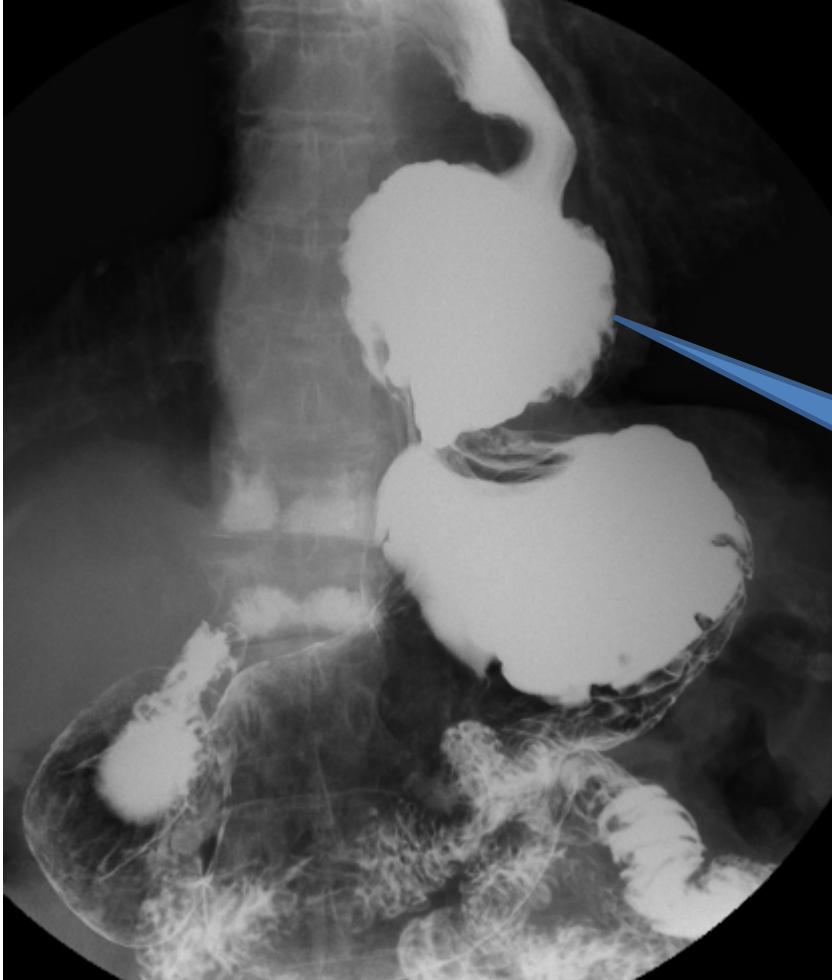
Reflux to mid-esophagus

Preoperative studies - UGIS



Reflux to upper-esophagus

Preoperative studies - UGIS



Hiatal hernia

Preoperative studies – pH monitoring, Manometry

7 patients evaluated

Mean DeMeester score 35.3

Mean LES pressure 15.7mmHg

Operative procedures

Type of fundoplication	
Nissen (360° total)	77
Dor (Anterior partial)	1
Toupet (Posterior partial)	3
No fundoplication	1
Combined resection for gastric SMT	
Yes	3
No	79
Previous gastric resection	
Yes	6
No	76
Open Conversion	
Yes	2
No	80

Operative procedures

Crural repair	
No repair	1
Natural repair	77
Prosthetic repair (Pledget)	3
Prosthetic repair (Biologic mesh)	1
Vagus nerve injury	
No injury	65
Hepatic branch	15
Anterior VN	1
Posterior VN	0
Anterior and posterior VN	1
Operation time (min)	
118.1 ± 45.7 (47 - 290)	

Postoperative course

Liquid diet start (postoperative day)

1.67 ± 1.24 days (POD#1 58%)

Soft diet start (postoperative day)

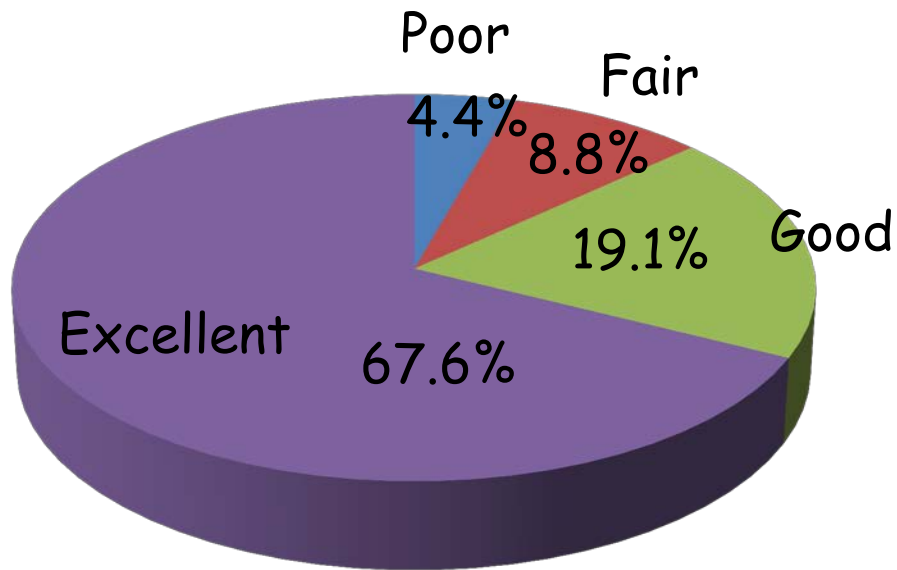
2.73 ± 1.70 days (POD#2 56%)

Postoperative hospital stay (days)

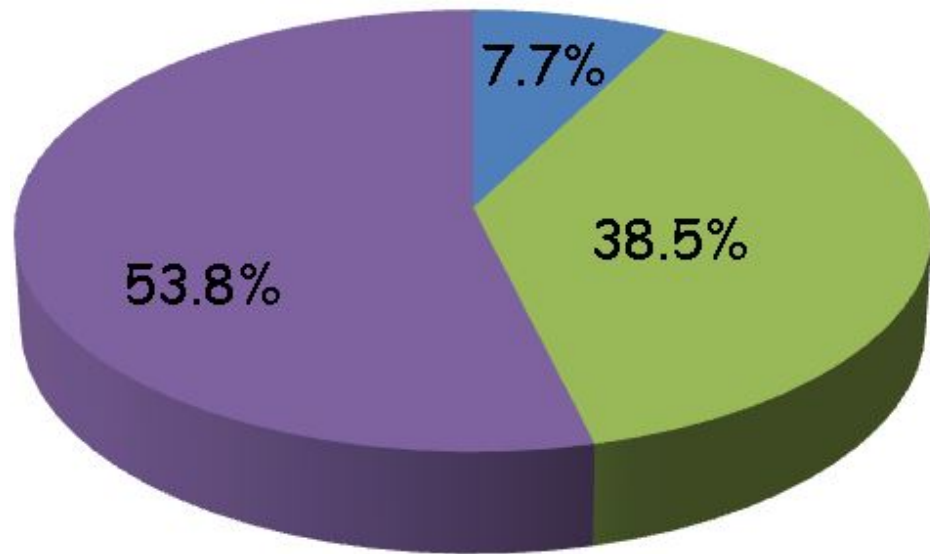
4.83 ± 3.43 days (0 - 16)

Postoperative Sx resolution

Typical Sx



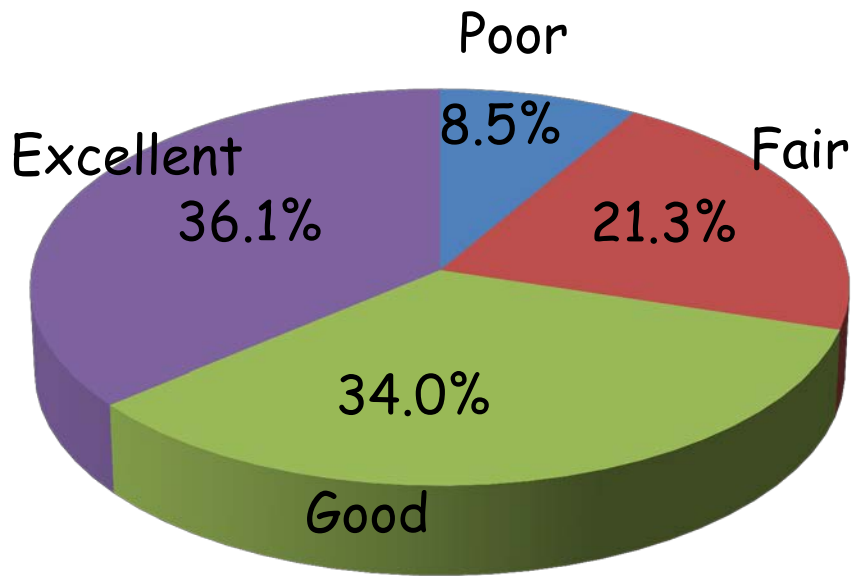
Discharge
(n=68)



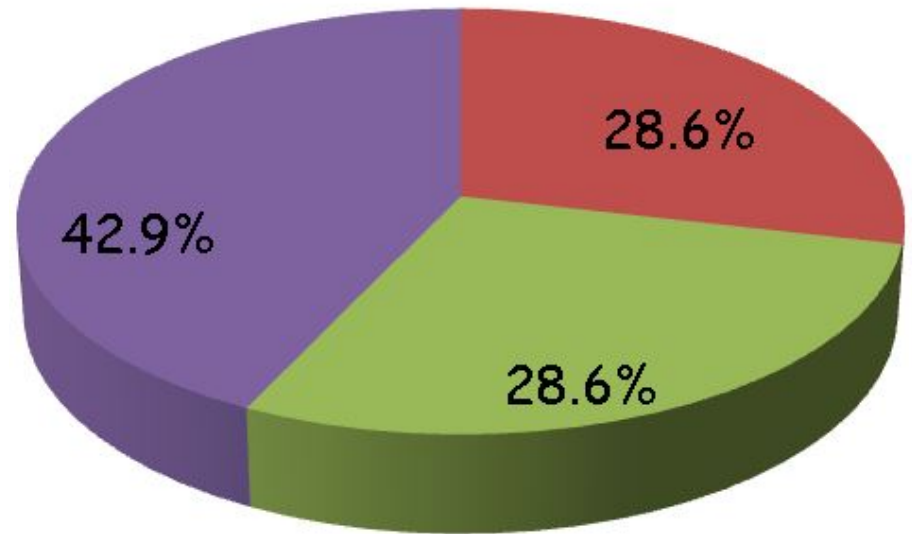
1 year after
(n=13)

Postoperative Sx resolution

Atypical Sx



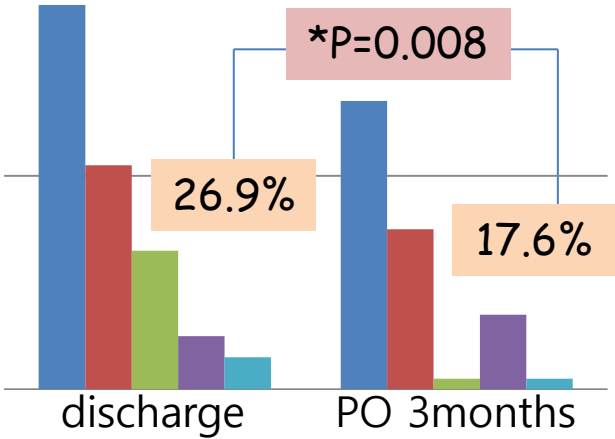
Discharge
(n=46)



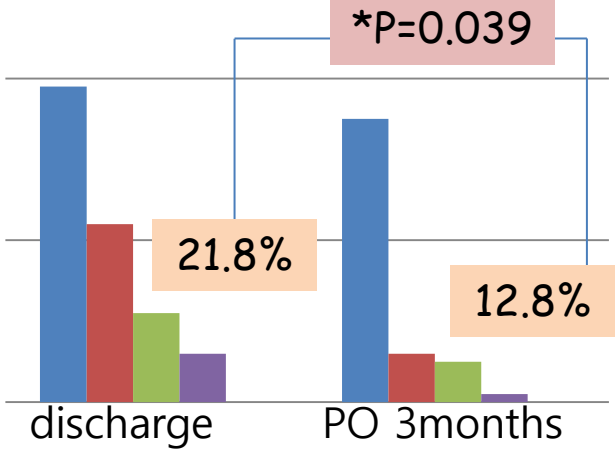
1 year after
(n=7)

Postoperative Adverse Sx

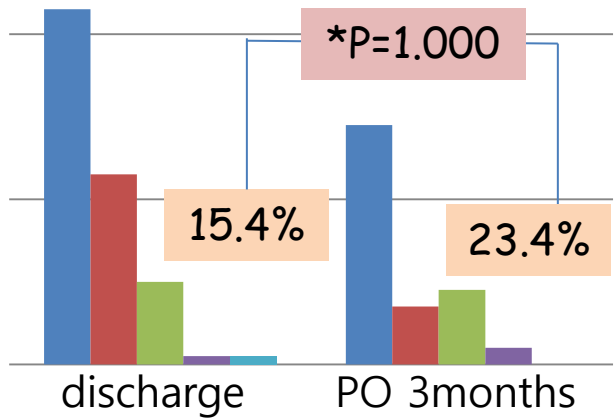
Dysphagia



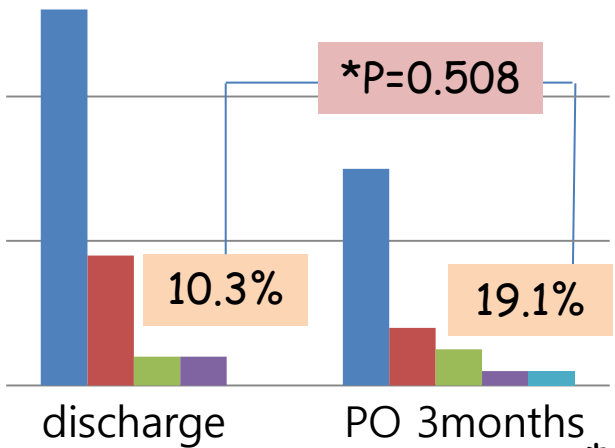
Difficult belching



Gas bloating



Flatus



*McNemar test

Treatment Failure ?

Surgically...

2 Reoperations to reverse the fundoplication for severe dysphagia

1 endoscopic balloon dilatation for stricture

Medically...

Postoperative GI medication (PO-3mo)	
Prokinetic drug	18
Antacid	2
H2RA	2
PPI	8

Conclusion

Nation-wide data of Antireflux surgery in Korea

Many atypical symptoms (60%)

Many PPI non-responders (71%)

Every surgeon's early experience



Comparable surgical outcome !

92% of typical sx and **72%** of atypical sx were resolved

Acceptable complication rate

Conclusion

We treated **0.0027%** of GERD patients surgically in Korea!

Is the surgery the alternative treatment option for GERD in Korea?
Not yet!

Antireflux surgery is a safe and effective treatment option for GERD in Korea.