REFLÜ ÖZOFAJİT

Dr. Engin Tutar

Çocuk Gastroenteroloji, Hepatoloji ve Beslenme BD

- **Gastroözofageal reflü hastalığı:** reflü → rahatsızlık verici semptom

  ve/veya

  komplikasyonlar (özofajit, striktür)

- Tanımlama hasta odaklı ve semptom bazlı → tanıda boşluklar…
  - Klinik pratikte GÖR vs GÖRH ayrımı zor
  - Semptomlar yaşa göre çok değişken ve spesifik değil
  - **Roma IV kriterleri:** →

    NERD — Gerçek NERD

    Reflü aşırı duyarlılığı

    Fonksiyonel göğüs yanması

- GÖRH (ve asit ilişkili hastalıklar) insidansı giderek artıyor:

  2000 – 2005 yılları arasında:

  - Süt çocuğu: 3 kattan fazla (%3,4 → %12,3)
  - Diğer yaş grupları: %30-%50 artış

  (Nelson SP. Journal of Medical Economics, 2009)

- Regürjitasyon süt çocuklarında çok sık: .....
- Süt çocuklarında gerçek GÖRH sıklığı: %5-9

  (Poddar U. Paediatr Int Child Health, 2019)

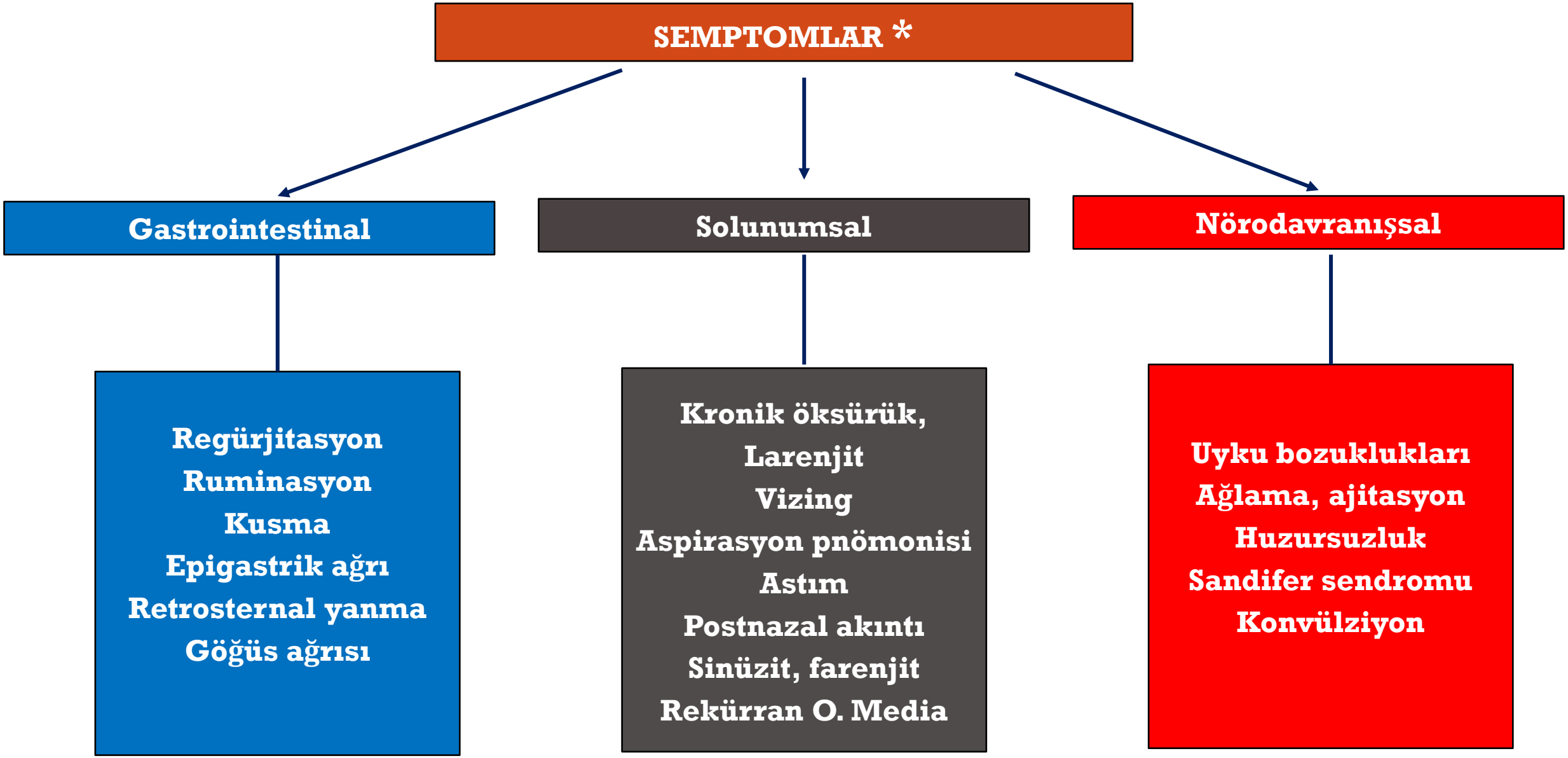
- Göğüste yanma: 3-9 yaş → %1,8, 10-17 yaş → %3,5 (kendileri %5,2)

  (Nelson SP. Arch Pediatr Adolesc Med. 2000)

- GÖRH: 0-17 yaş (3.8 ± 5.6 yıl),10.394 çocuk, semptom anketi → %6,2

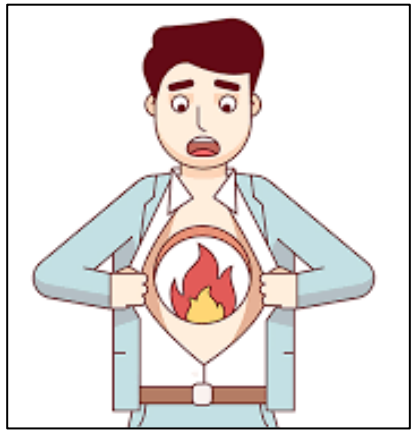
  (Martigne L. Eur J Pediatr. 2012)

Tablo: Çocuklarda ciddi GÖRH'ye predispozisyon yaratan durumlar
• Obezite
• Nörolojik bozukluk; serebral palsi gibi
• Nöromusküler hastalık; konjenital miyopati gibi
• Genetik anomaliler, Down sendromu gibi
• Opere trakeo-özofageal fistül
• Opere özofagus atrezisi
• Konjenital diyafragma hernisi
• Kronik akciğer hastalığı; bronkopulm displ, bronşiyektazi, astım gibi
• Kistik fibrozis
• Özofageal kostik hasara maruz kalmış olmak
• İleri prematürite
• Ailede güçlü GÖRH, Barrett özofagus veya özofageal Adeno CA öyküsü



* Ref: Lupu et al. Medicine, 2018

- Göğüste yanma (heartburn) tipik reflü bulgusu
- Semptomların (ağrının) şiddeti ile endoskopik özofajit şiddeti arasında zayıf bir korelasyon vardır.



Tablo. Alarm bulguları (kusma ile birlikte)
• Kusmukta safra olması
• Kanlı kusma
• Şiddetli/güçlü kusma
• Kusmanın 6 aylıktan sonra başlamış olması
• Beslenme esnasında boğulma, öğürme, öksürük
• Büyüme geriliği
• Diyare/kabızlık
• Abdominal hassasiyet veya distansiyon
• Ateş
• Letarji
• Hepatosplenomegali
• Fontanel bombeliği
• Mikro veya makrosefali
• Konvülziyonlar
• Şüpheli genetik/metabolik sendrom

Ref: Poddar U. Paediatr Int Child Health, 2019

- **Alarm bulgusu yoksa ⟶ öykü ve fizik muayene çoğu kez tanıda yeterli**
- Prezentasyon atipik ise, tanı için ileri tetkik gerekli
- GÖRH tanısında tek bir altın standart test yok
- Testin tercihi klinik duruma bağlı, buna göre seçim yapılır.

➢ pH/MII: ekstraözofageal semptom-GER ilişkisi, NERD etyoloji

➢ Endoskopi ve biyopsi: Özofajit/darlık şüphesi veya EoE gibi ayırıcı tanı

➢ Kontrastlı grafi: Anatomik anomali düşünüldüğünde

➢ Reflü ve mide boşalma sintigrafisi

➢ PPİ tedavi yanıtı: Süt çocuklarında yeri yok

Büyük çocukta; tipik semptom varsa 4-8 hafta

Ekstraözofageal semptomlarda yeri yok

- **PPİ tedavi yanıtı**
- Pratik de olsa, PPİ'ye semptomatik yanıt GÖRH tanısına eş değildir!!!
- Erişkinde semptom yanıtı: EE %69, NERD %49, normal EGD ve pH metri %35

(Bytzer P. Clin Gastroenterol Hepatol, 2012)

- Test dozu yanıtı kişiye göre değişken (GÖRH şiddeti, ilaç metabolizması gibi)
- Test süresi?, özofageal hipersensitivite

➢ Düşük spesifisite ve yüksek plasebo yanıtına karşın, tanısal testlere gerek bırakmaması ve pratik olması nedeniyle kılavuzlar öneriyor

⟶ yanlış (yüksek) tanı ve aşırı (gereksiz) PPİ kullanımı

(Gyawali et al. Modern diagnosis of GERD: the Lyon Consensus, Gut 2018)

Pediatrics and Neonatology (2016) 57, 385–389

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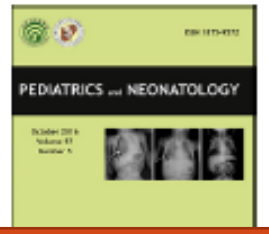

- ❖ 120 çocuk hasta, yaş ort: 4,6±5.3 yıl (6 gün 18 yaş): pH-impedans
- ➢ 6785 reflü atağı → %32 asid, %68 non-asid reflü
- ➢ Reflü ataklarının → %43'ü sıvı, %57'si mikst
- ▪ 34 hastaya ÖGD → LA sınflamasına göre %56 özofajit
- ○ Özofajit prediktörleri: De Meester skoru ≥ 21
  En uzun asit reflü zamanı ≥ 17 dk
  5 dk.dan uzun reflü olması (≥3 tane ciddi)

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PLOS ONE | November 2, 2017

- 218 çocuk hasta, GÖRH düşündüren Gİ veya respiratuvar semptom (+)
- Ortalama yaş: 6,7 ±6,0 yıl
- pH-impedans → GÖRH %57,4
- Sadece pH → %34,1 (sens ort: %59,4, yaşla birlikte artıyor)
- Sadece impedans → %35 (sens ort: %60,2, en yüksek < 1 yaş)
- Tek başına pH-metri yapılsa idi → Hastaların %40'ı negatif olacaktı
- 119 hastada ÖGD → Reflü özofajit %26,1 (sens: %32,9)
- Reflü özofajit varlığı asit reflünün şiddeti ile ilişkili bulunmuş

Control, Institute for Public Health of Belgrade, Belgrade, Serbia, 5 Institute of Epidemiology, Belgrade Serbia, 6 Faculty of Medicine, University of Belgrade, Serbia, 7 Clinic for Gastroenterology and Hepatology, Clinical Center of Serbia, Belgrade, Serbia

❑ Reflü özofajit

❑ **Semptomatik hastada ÖGD'nin rolü:**

✓ Semptom pozitif hastada tedavi yanıtı olmadığında

✓ Alarm semptomu varlığında (hematemez gibi)

✓ GÖRH komplikasyonlarının tanısında (striktür, Barrett özofagus gibi)

✓ GÖRH'ye predispozisyon yaratan durumların tanısında (hiatal herni)

✓ GÖRH'ye benzeyen durumların ayırıcı tanısında

✓ Semptomatik hastada erozif özofajit sıklığı (sensitivite)*: %15-%71,

mikroskopik özofajit sıklığı*: %83-%88

- Semptomatik hastada;

makroskopik ve histolojik olarak normal endoskopi NPD*: %62-%73

➢ Normal endoskopik görünüm ve normal histoloji GÖRH'yi dışlamaz

(*Pediatric Gastroesophageal Reflux Clinical Practice Guidelines, JPGN 2018)

Journal of Pediatric Gastroenterology and Nutrition
47:141–146 © 2008 by European Society for Pediatric Gastroenterology, Hepatology, and Nutrition and
North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition

Prevalence of Endoscopic Findings of Erosive Esophagitis in Children: A Population-based Study

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Departments of ion Studies
at the Veteran Virginia

ABSTRACT

Purpose: Sympt tis, 55.2%
occur in 2% to 7 0/6300) in
be limited to syr Erosive

Patients and Methods: All children ages 0 to 17 years, 11 months who underwent upper endoscopy that was recorded in the Pediatric Endoscopic Database System-Clinical Outcomes Research Initiative between 1999 and 2002 were included. Endoscopic reports that were incomplete or that did not include demographic features, indications for endoscopy, or endoscopic findings were excluded. Erosive esophagitis was defined either descriptively or by the Los Angeles classification. Esophageal biopsy was not evaluated.

Results: A total of 7188 children who underwent upper endoscopy fulfilled the inclusion and exclusion criteria. Of those, 888 (12.4%) had erosive esophagitis. The median age of children with erosive esophagitis was 12.7 ± 4.9 years versus 10.0 ± 5.1 years in those without erosive esophagitis

- Reflü özofajit açısından özofagus endoskopik olarak değerlendirildiğinde;

  → reflü özofajit var mı? → şiddeti nedir?

- Çeşitli sınıflama sistemleri ....
  - Los Angeles sınıflaması
  - Savery-Miller sınıflaması
  - Hetzel-Dent sınıflaması
  - MUSE sınıflaması
- İdeal sınıflama sistemi; basit, kolay yapılabilir ve tekrarlanabilir olmalı !!!
- En yüksek gözlemciler arası uyum LA sınıflamasında (K: 0,49-0,65)*
- Pediatrik yaş grubuna özel bir sınıflama sistemi yok

*** Dent J. Best Practice & Research Clinical Gastroenterology, 2008**

Table 1. The three different endoscopic classification system.

Savary-Miller classification (1977)

Grade 1 Single or isolated er

Grade 2 Multiple erosive lesi

Grade 3 Circumferential eros

Grade 4 Chronic lesions: ulce grades 1 to 3.

Hetzel-Dent classification (1988)

Grade 0 No mucosal abnormalities.

Grade 1 No macroscopic lesions but erythema, hyperemia, or mucosal friability

Grade 2 Superficial erosions involving <10% of mucosal surface of the last 5 cm of esophageal squamous mucosa.

Grade 3 Superficial erosions or ulceration involving 10% to 50% of the mucosal surface of the last 5 cm of esophageal squamous mucosa

Grade 4 Deep peptide ulceration anywhere in the esophagus or confluent erosion of >50% of the mucosal surface of the last 5 cm of esophageal squamous mucosa

Modified Los Angeles classification (1999)

Grade A One (or more) mucosal break no longer than 5 mm that does not extend between the tops of two mucosal folds.

Grade B One (or more) mucosal break more than 5 mm long that does not extend between the tops of two mucosal folds.

Grade C One (or more) mucosal break that is continuous be circumference.

Grade D One (or more) mucosal break that involves at leas

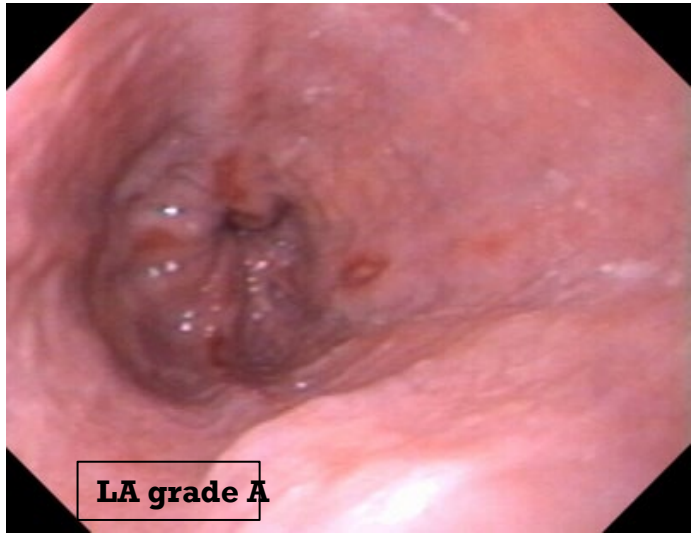
Table 3. MUSE classification of GERD

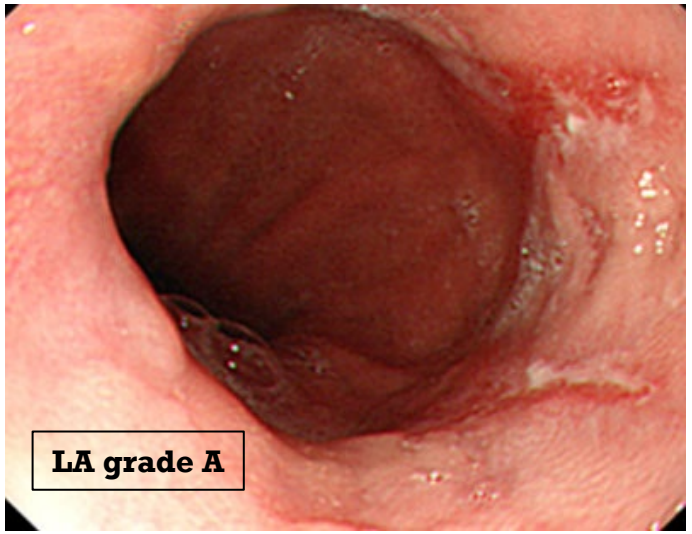
Grade	Metaplasia	Ulcer	Stricture	Erosions
0	M0 Absent	U0 Absent	S0 Absent	E0 Absent
1	M1 One	U1 One	S1 >9 mm	E1 One
2	M2 Circumferential	U2 Two or more	S2 ≤9 mm	E2 Circumferential

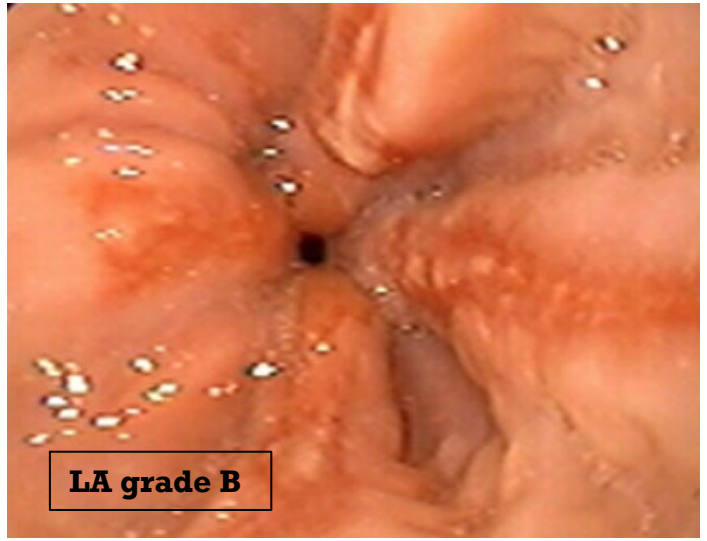
MUSE, Metaplasia, ulcer, stricture, erosion.

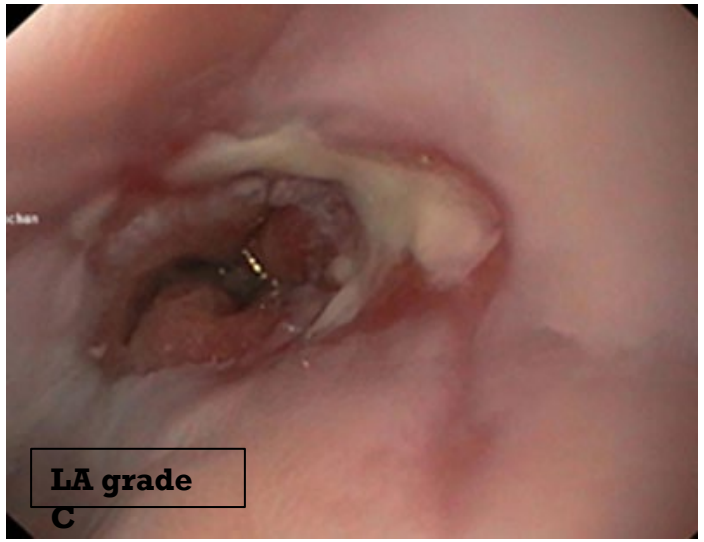
• **Mukozal çatlak**: etraf normal dokudan keskin bir sınır ile ayrılan soyulma veya erozyon

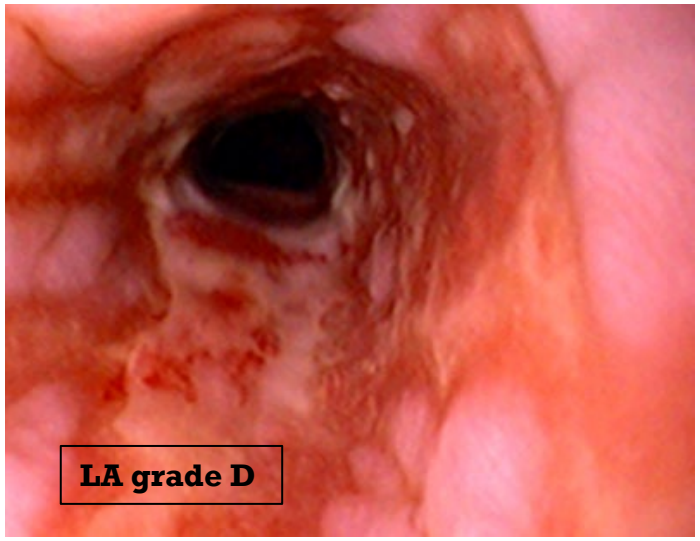
Los Angeles Sınıflaması











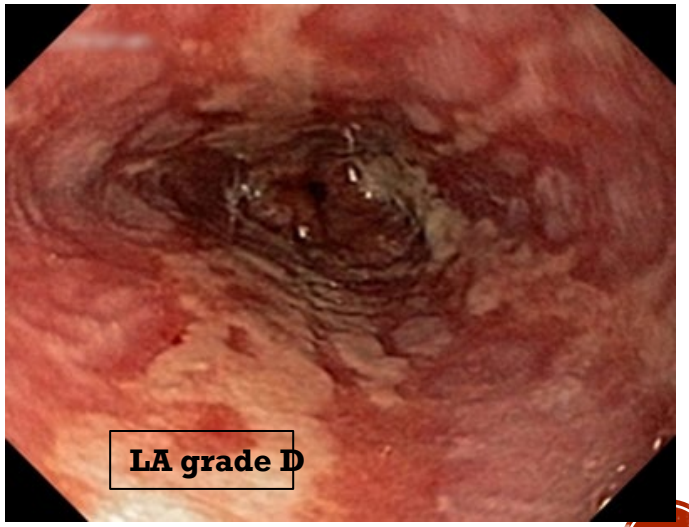


Table 1. Los Angeles classification system with Japanese modifications[5]

Grade	Description
N	Normal mucosa
M	Minimal changes
A	Nonconfluent mu
B	Nonconfluent mu
C	Confluent mucosa

Non-erozif

Comparative Study > Aliment Pharmacol Ther. 2007 Jul 1;26(1):69-7

doi: 10.1111/j.1365-2036.2007.03350.x.

Efficacy of rabeprazole on heartburn resolution in patients with non-erosi gastro-oesophageal reflux disease: a study from Japan

H Miwa [1], M Sasaki, T Furuta, T Koike, Y Habu, M Ito, Y Fujiwara, T Wada, T Chiba, Y Kinoshita, ACID-RELATED SYMPTOM (ARS) RESEARCH GROUP

Affiliations + expand

PMID: 17555423 DOI: 10.1111/j.1365-2036.2007.03350.x

Aim

To investigate and compare the efficacy of 4-week course of rabeprazole 10 mg/day on symptom resolution in NERD and erosive GERD in Japan.

Methods

The modified Los Angeles classification was used to grade endoscopically GERD in patients with heartburn (Grades N and M: NERD, Grades A and B: mild reflux oesophagitis (RO), and Grades C and D: severe RO). Rabeprazole 10 mg/day was administered for 4 weeks to 180 patients who kept symptom diaries.

Results

Complete relief of the symptoms was achieved in 35.8% of the NERD group and 55.4% of the erosive GERD group (mild RO: 51.1% and severe RO: 77.8%). Rabeprazole was significantly more effective in erosive GERD than in NERD patients. Among the NERD subgroups (Grades N and M), no difference in symptom improvement was observed.

Conclusions

Four-week, rabeprazole 10 mg/day acid suppression therapy was effective in resolving symptoms in Japanese GERD patients. This therapy was more effective in erosive GERD than in NERD patients, and in those with severe RO than in those with mild RO.

ORIGINAL ARTICLE

Turk J Gastroenterol 2013

TJG
The Turkish Journal of Gastroenterology

What is the diagnostic utility of endoscopic scoring systems in children?

Background/aims: *The aim of this study was to evaluate the consistency of the Savary-Miller, the Hetzel-Dent and the Los Angeles endoscopic classification systems and to compare them with the esophageal histopathology in children.* ***Material and Methods:*** *Children between the ages of 5-17 years who underwent esophagogastroduodenoscopy were included in the study. The endoscopic reports and the still images of the esophagus were reclassified by the same gastroenterologist according to the Savary-Miller, Hetzel-Dent and Los Angeles scoring systems. The esophageal biopsies were also reevaluated by the same pathologist and the consistency between endoscopic and histopathologic esophagitis was evaluated.* ***Results:*** *A total of 113 out of 192 pediatric patients were included in the study. Seventy-three patients (64.6%) had esophagitis according to the Hetzel-Dent classification, whereas only 20 (17.7%) patients were defined as having esophagitis according to the other two classification systems. The consistency between the Savary-Miller and Los Angeles classifications was excellent (κ: 0.92) but the agreement between the Hetzel-Dent and Savary-Miller and between the Hetzel-Dent and Los Angeles classifications were poor. A total of 82 patients (72.6%) had histopathological esophagitis, and there was a weak consistency between all 3 endoscopic scoring systems and the histopathology.* ***Conclusions:*** *Since pediatric patients have milder esophagitis than in adults, the use of endoscopic scoring systems developed for adults seems to be inapplicable for children. The inclusion of minimal endoscopic changes in endoscopic scoring systems by using more sensitive and novel endoscopic techniques would increase the sensitivity of these scoring systems in children.*

❑ Reflü özofajit tanısında gelişmiş endoskopik tekniklerin rolü

- **Amaç:**

➢ Minimal değişiklik olan özofajitli olgularda endoskopi sens.nin artırılması

Table 1. Endoscopic technology available to evaluate NERD

White light endoscopy
Conventional
High resolution
High definition
Magnification endoscopy
Optical
Electronic
Chromoendoscopy
Narrow-band imaging
Confocal laser endomicroscopy

Digestion

Digestion 2008;78(suppl 1):17–23
DOI: 10.1159/000151251

Published online: October 2, 2008

Is Conventional Endoscopic Identification of Non-Erosive Reflux Disease Adequate?

Gary W. Falk

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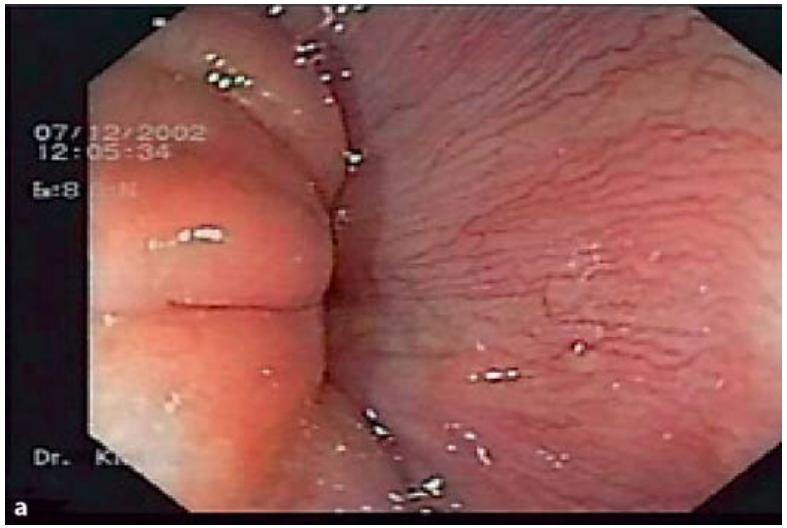
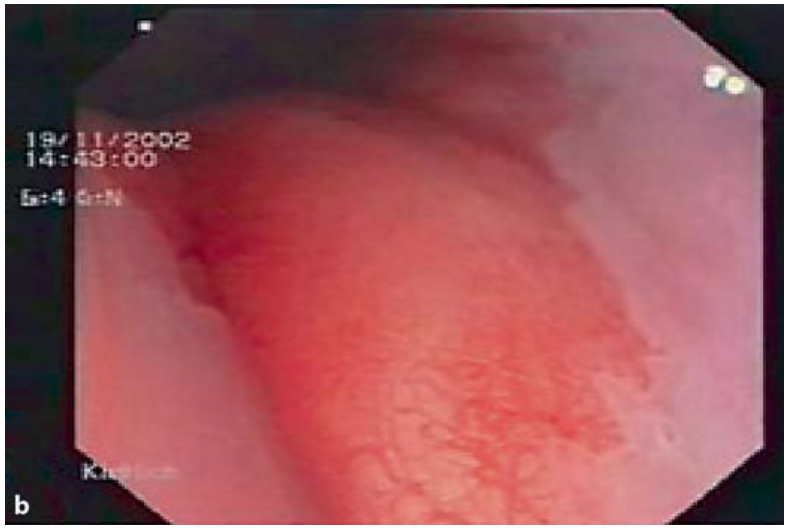
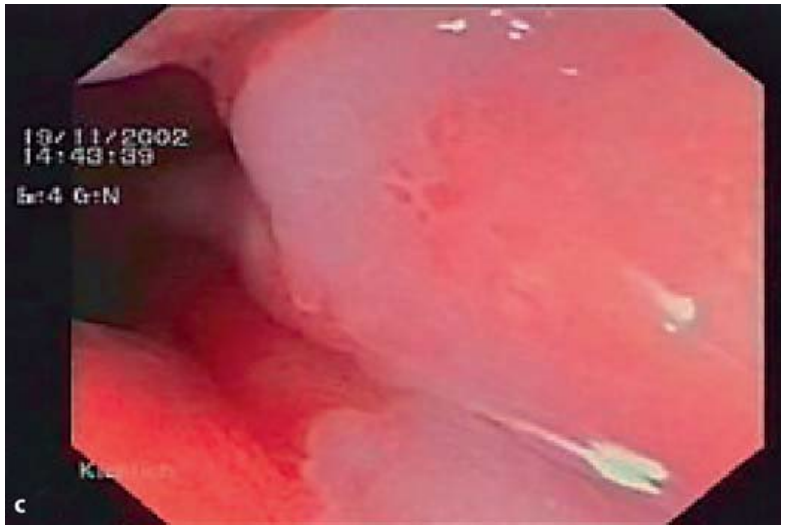
Key Words
Non-erosive reflux disease · Endoscopic imaging · Narrow-band imaging

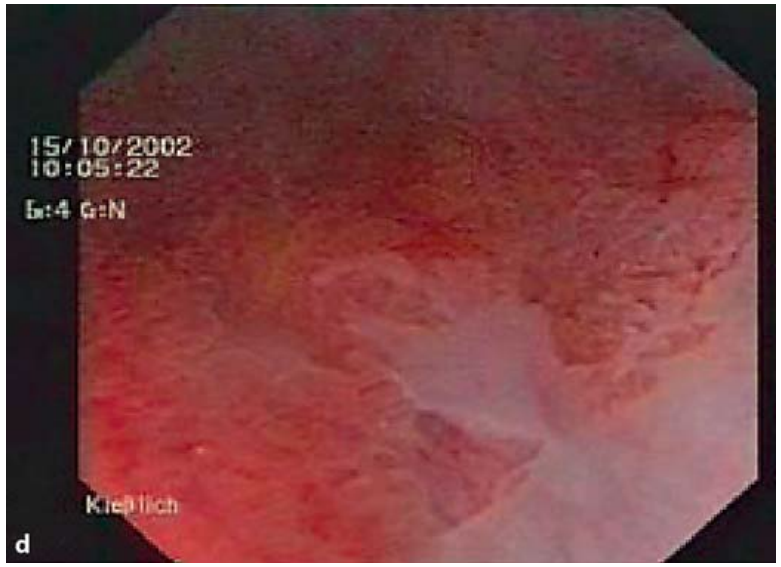
Abstract

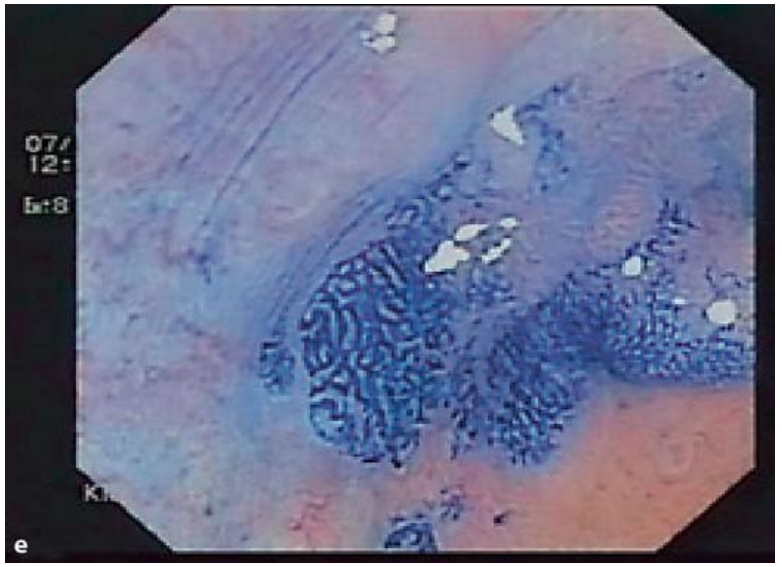
Furthermore, it is essential that we do not repeat the mistakes of the past as poor interobserver agreement has already been shown for minimal change esophagitis, albeit with more primitive technology.



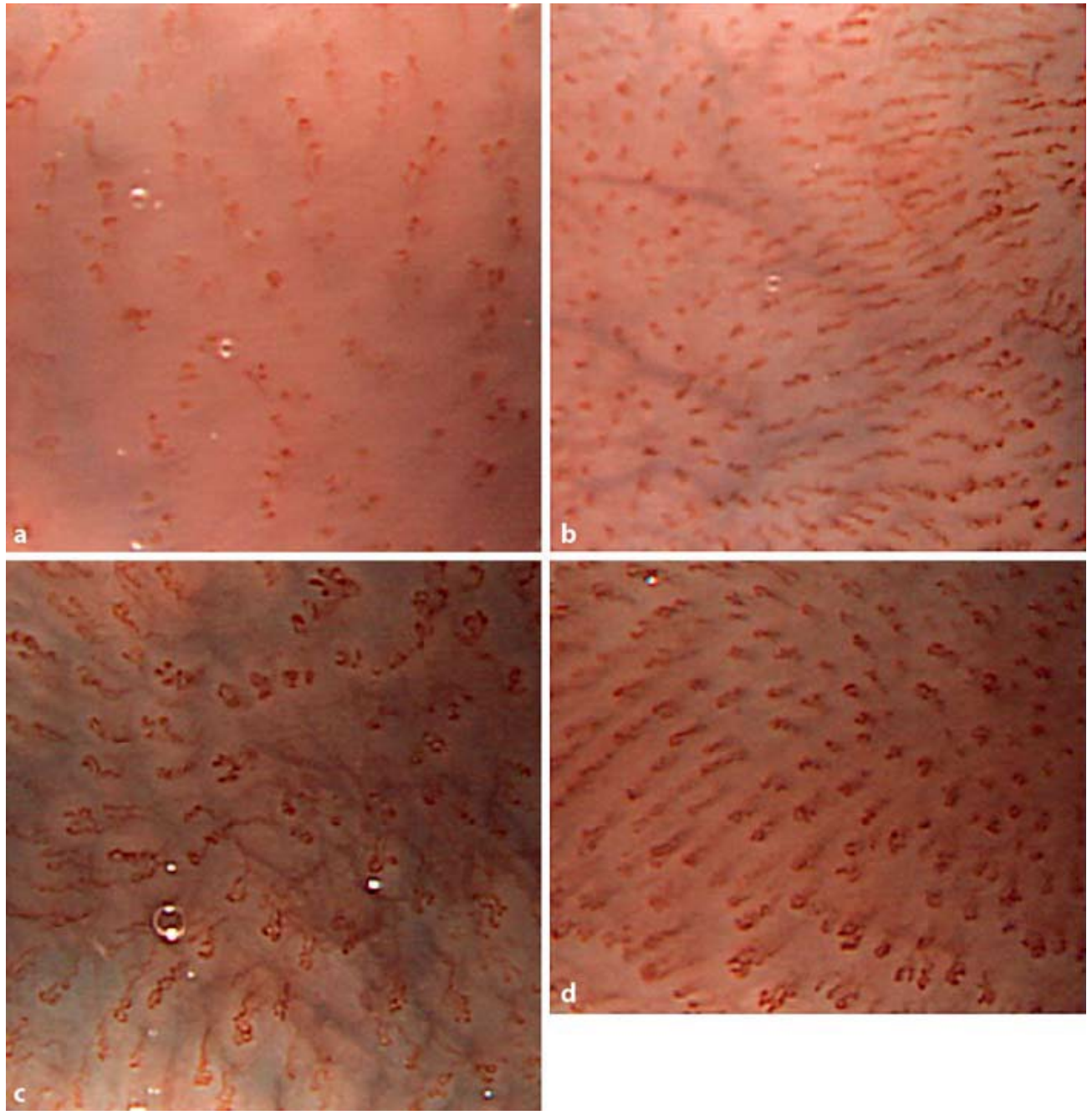




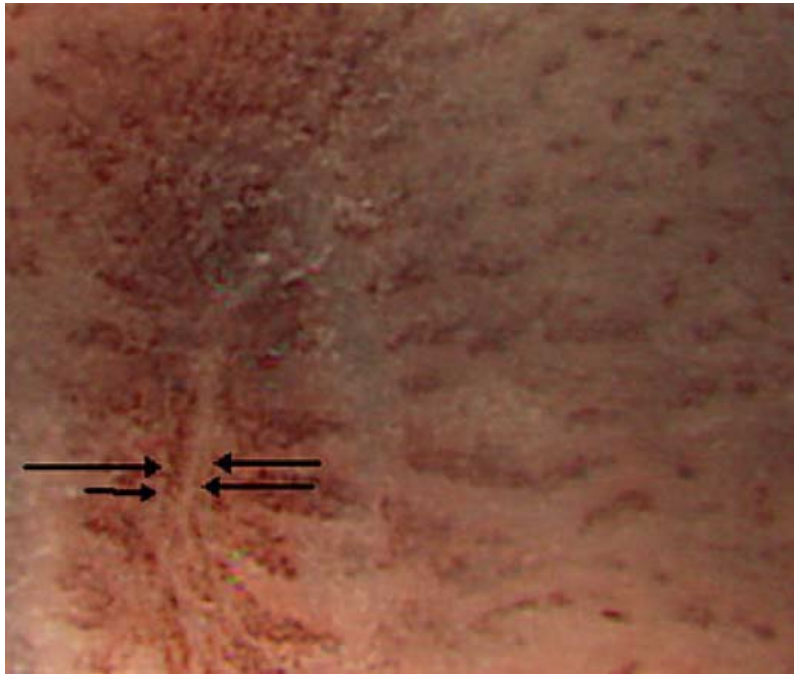




Şekil. Magnifikasyon endoskopi ile NERD için önerilen endoskopik kriterler. **a)** Z çizgisi proksimalinde artmış vasküler işaretler. **b)** Z çizgisi distalinde artmış vasküler işaretler. **c)** Z çizgisi proksimalinde noktasal eritem. **d)** Z çizgisi distalinde skuamöz epitel adacıkları. **e)** Z çizgisi distalinde villöz görünümlü mukoza.



Şekil. Dar bant görüntüleme (NBI) ve zoom magnifikasyon kullanılarak elde edilen NERD endoskopik görüntüleri **a.** normal sayıda intrapapiller kapiller halkalar. **b.** intrapapiller kapiller halkalar da sayıca artış. **c.** büklümlü intrapapiller kapiller halkalar **d.** dilate intrapapiller kapiller halkalar



Şekil. Dar bant görüntüleme (NBI) ve zoom magnifikasyon ile NERD'de mikroerozyon bulgusu

Lugol chromoendoscopy as a di endoscopy-negative GERD CME

Ichiro Yoshikawa, MD, PhD, Masahiro Yamasak Keiichiro Kume, MD, PhD, Makoto Otsuki, MD,

Kitakyushu, Japan

Background: Esophageal mucosal breaks are found Thus, endoscopy appears to be an insensitive test fo early esophageal cancer, which is difficult to recogni this study was to determine the efficacy of Lugol ch negative GERD (ENRD).

Methods: The study was conducted with 61 patients and 42 controls (15 women; mean age, 65.0 years). I conventional endoscopy, Lugol's iodine solution v evaluation of the staining pattern. When Lugol-unsta specimens were obtained from unstained streaks a included basal cell hyperplasia, papillary length, and

Results: Twenty-two (36%) of 61 patients with reflu conventional endoscopy. Lugol chromoendoscopy wa The entire esophageal mucosa was uniformly stained the remaining 19 patients with reflux and in one con esophagus ($p < 0.0001$). Histologically, Lugol-unstai (30.9% ± 7.6% vs. 12.3% ± 4.5% of total epithelial t longer papillae (57.9% ± 12.6% vs. 38.1% ± 12.6% of with stained mucosa. In addition, infiltration of lym unstained mucosa than in stained mucosa ($p < 0.01$

Conclusions: Visible unstained streaks by Lugol ch which was not detectable by conventional endoscopy the diagnosis of ENRD. This method could be appealing for the endoscopist as it is easy, safe, and can be performed at the same endoscopic session. (Gastrointest Endosc 2005;62:698-703.)

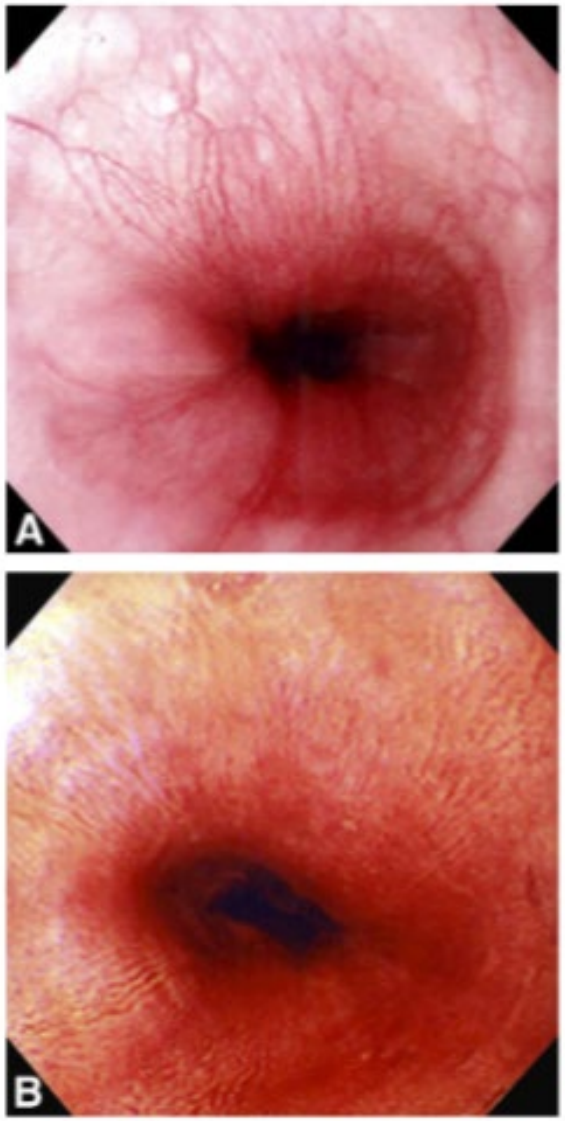


Figure 1. Normal type at Lugol chromoendoscopy. **A,** Conventional endoscopy did not identify any color changes or mucosal breaks in the distal esophagus. **B,** The distal esophagus was uniformly stained dark brown immediately after spraying the Lugol solution.

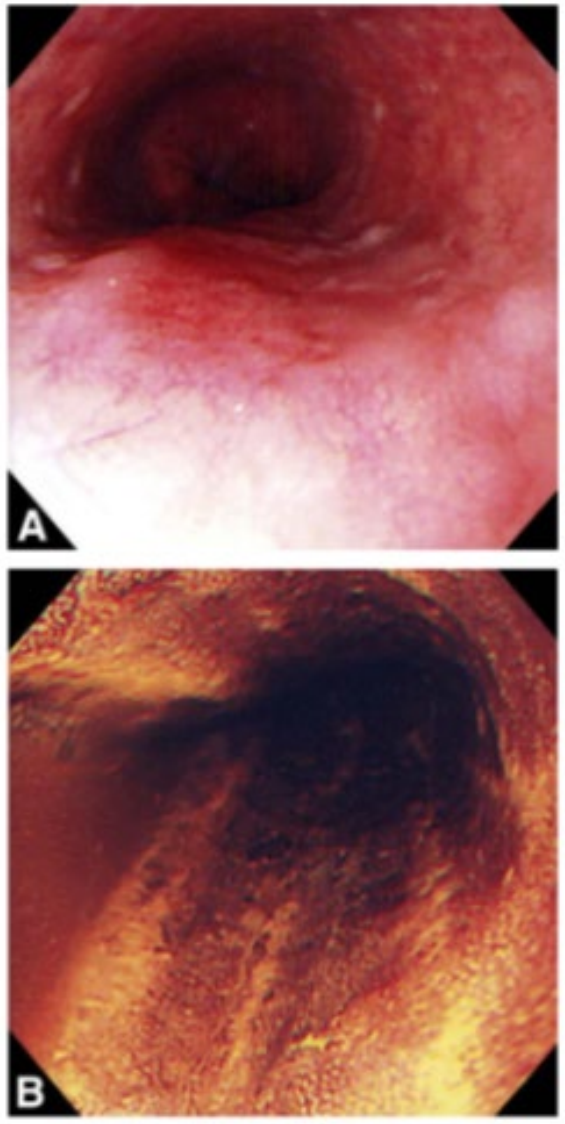


Figure 2. Streaks type at Lugol chromoendoscopy. **A,** Conventional endoscopy did not identify any color changes or mucosal breaks in the distal esophagus. **B,** Lugol chromoendoscopy revealed several well-demarcated unstained streaks in the distal esophagus.

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Fig. 1 MCE using white light imaging, linked color imaging, and blue LASER imaging. **a** White light imaging (WLI). Minimal change esophagitis (MCE) with whitish turbidity. **b** Linked color imaging (LCI). The MCE was highlighted by a whitish color. The LCI image was scored as + 10 points representing improved visibility as evaluated by all endoscopists. **c** Blue LASER imaging (BLI)

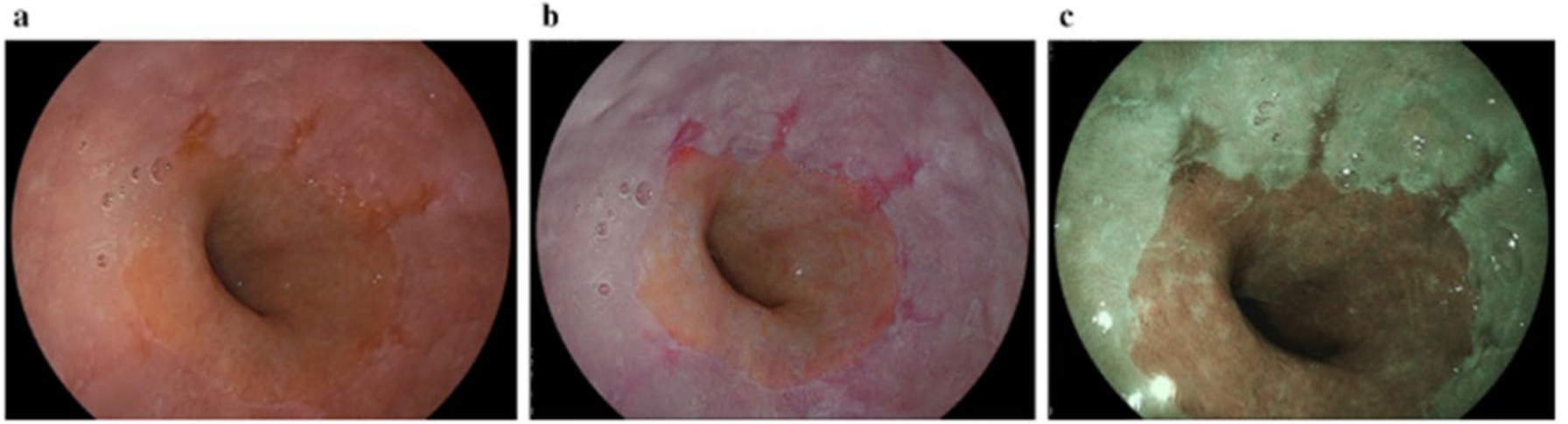
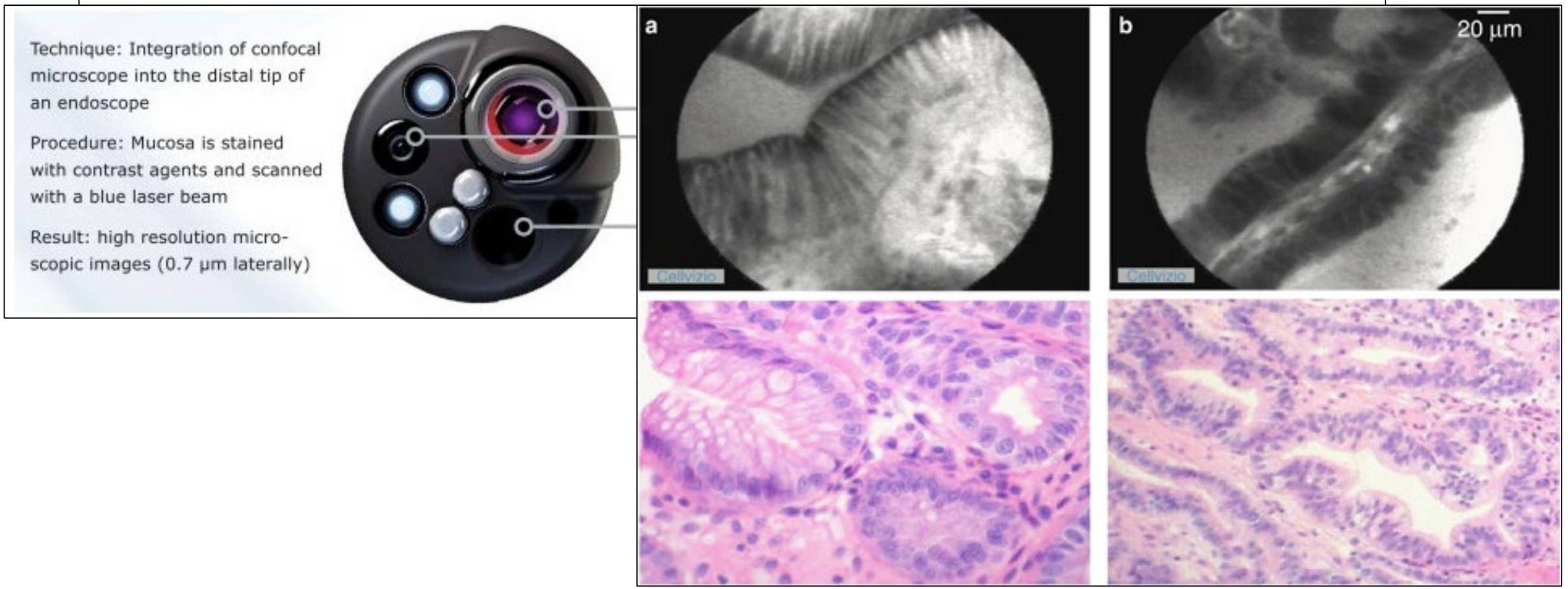


Fig. 2 Reflux esophagitis (grade A) using white light imaging, linked color imaging, and blue LASER imaging. **a** White light imaging (WLI). Reflux esophagitis (LA grade A). **b** Linked color imaging (LCI). The reflux esophagitis was clearly detected and became highlighted in a red color. The LCI image was scored as + 15 points representing improved visibility as evaluated by all endoscopists. **c** Blue LASER imaging (BLI)

- **Konfokal Endomikroskopi**: floresan boyama ile belirlenen hedef dokudan eş zamanlı biyopsi alınabilir.



(a) Non-displastik Barrett mukoza, **(b)** Displastik Barrett özofagus mukozası

❑ GÖRH'nin en önemli histolojik bulguları

- Bazal hücre tabakasında kalınlaşma (BCH)
- Epitelyal papillalarda uzama (PE)
- Hücreler arası aralıkta genişleme (DIS)
- İE inflamatuvar hücre artışı (eozinofil, nötrofil, lenfosit)

Table 3. Criteria for the diagnosis of GER and esophagitis on endoscopic biopsies (ESPGHAN).

Grade	Histologic criteria	Clinical Diagnosis
0	Normal	Normal
1a	Basal zone hyperplasia	
1b	Elongated stromal papillae	Reflux
1c	Vascular ingrowth	
2	Polymorphonuclear cells in the epithelium, lamina propria or both	Esophagitis
3	Polymorphs with epithelial defect	Esophagitis
4	Ulceration	Esophagitis
5	Aberrant columnar epithelium	Esophagitis

Ref: Vandenplas Y. JPGN 1994

- Endoskopinin normal olması histolojik özofajiti dışlamaz
- Histolojik değişiklikler (BCH, PE, DIS) pediatrik reflü özofajit tanısında sensitif veya spesifik değildir (Pediatric Gastroesophageal Reflux Clinical Practice Guidelines. NASPGHAN&ESPGHAN, JPGN 2009)
- NERD'de İE inflamatuvar hücreler nadir.
- Nötrofiller daha çok mukozal çatlak etrafından alınan dokularda (+)

❖ ANCAK

- Mikroskopik değişiklikler NERD'li hastalarda kontrollere göre daha sık (Dent J. Clin Gastroenterol Hepatol 2007. Zentilin P. Am J Gastroenterol 2005)
- Çok merkezli çalışma: Endoskopisi normal olan çocuk hastalarda reflü semptomları ile histolojik skorlama ileri derecede uyumlu (Lombardi G, Dig Liver Dis 2007)

❖ Histolojik skor (BCH, PE, DIS), NERD vs fonksiyonel göğüs yanması ayrımında yararlı olabilir (Kandulski A. Aliment Pharmacol Ther 2013)

❖ Sadece histolojik bulgular ile GÖRH tanısına varılamaz.

2017 AP&T Ali

Diagnosis of gastro-oesophageal
adding oesophageal histology an

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SUMMARY

Background
The diagnosis of gastro
is limited by the sensiti

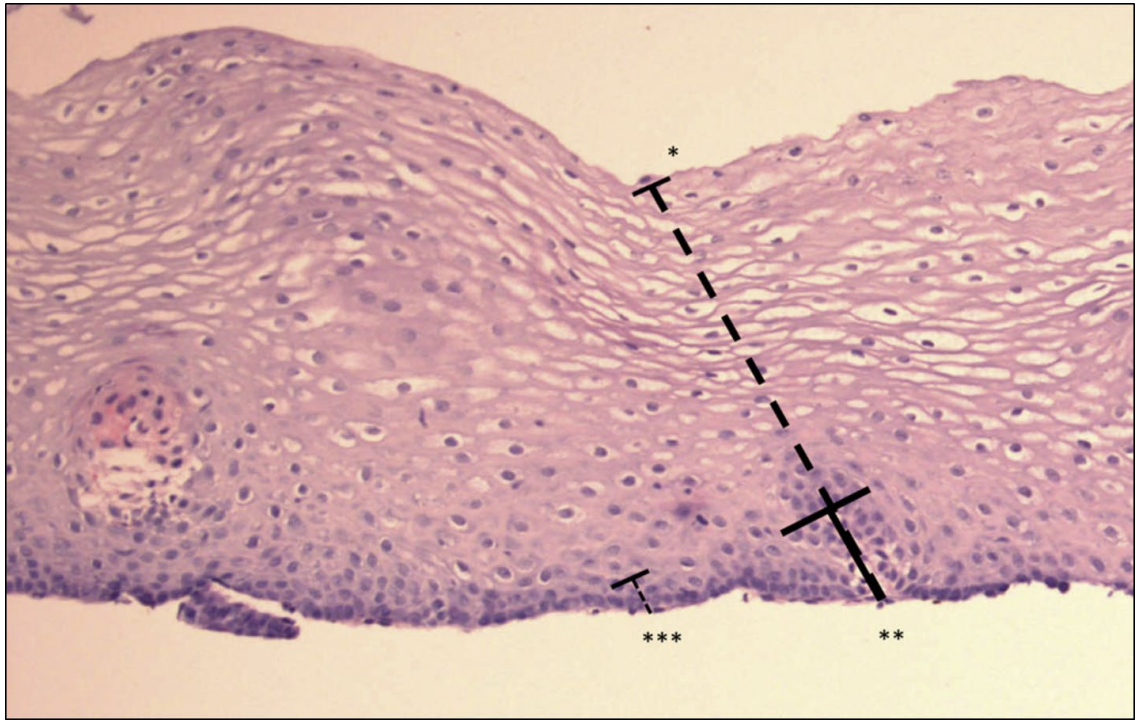
Aim
To determine if addin
epigastric pain enhanc

Methods
Patients with frequent
a proton pump inhibi

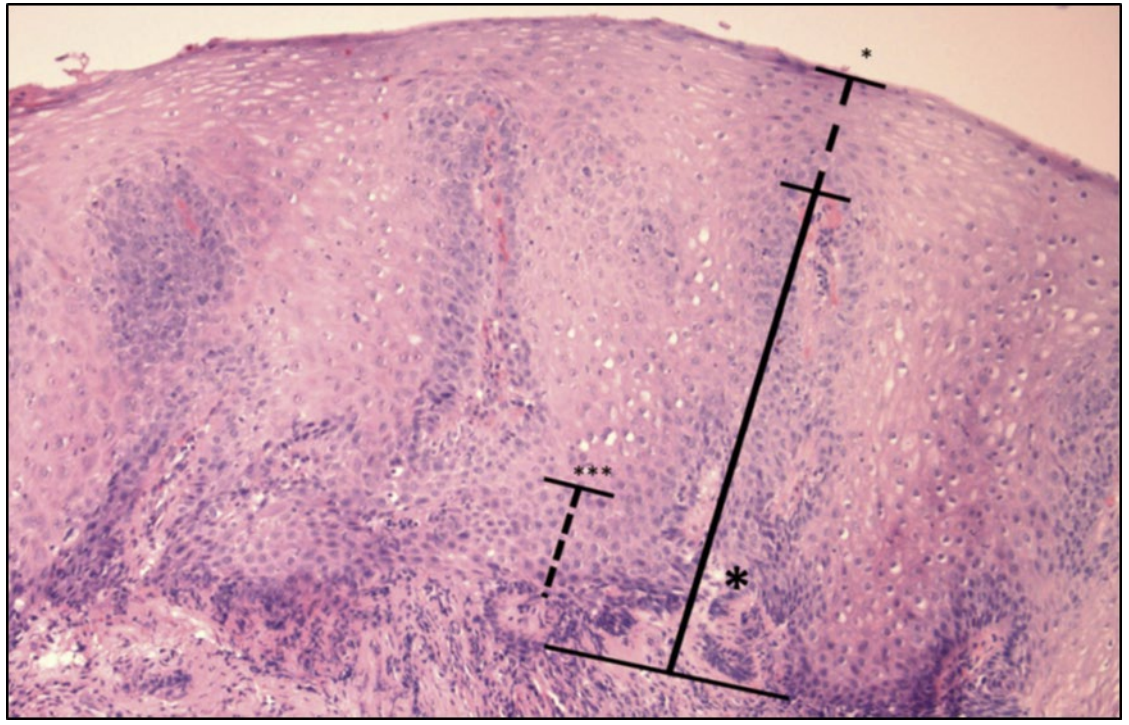
Methods
Patients with frequent upper gastrointestinal symptoms who had not taken a proton pump inhibitor in the previous 2 months and who had evaluable distal oesophageal biopsies were included (Diamond study: NCT00291746). Epithelial hyperplasia was identified when total epithelial thickness was at least 430 μm. Investigation-based GERD criteria were: presence of erosive oesophagitis, pathological oesophageal acid exposure and/or positive symptom–acid association probability. Symptoms were assessed using the Reflux Disease Questionnaire and a pre-specified checklist.

Results
Overall, 127 (55%) of the 231 included patients met investigation-based GERD criteria and 195 (84%) met symptom-based criteria. Epithelial hyperplasia was present in 89 individuals, of whom 61 (69%) met investigation-based criteria and 83 (93%) met symptom-based criteria. Adding epithelial hyperplasia as a criterion increased the number of patients diagnosed with GERD on investigation by 28 [12%; number needed to diagnose (NND): 8], to 155 (67%). The proportion of patients with a symptom-based GERD diagnosis who met investigation-based criteria including epithelial hyperplasia was significantly greater when concomitant epigastric pain was absent than when it was present ($P < 0.05$; NND: 8).

Conclusions
Histology increases diagnosis of GERD and should be performed when clinical suspicion is high and endoscopy is negative. Excluding patients with



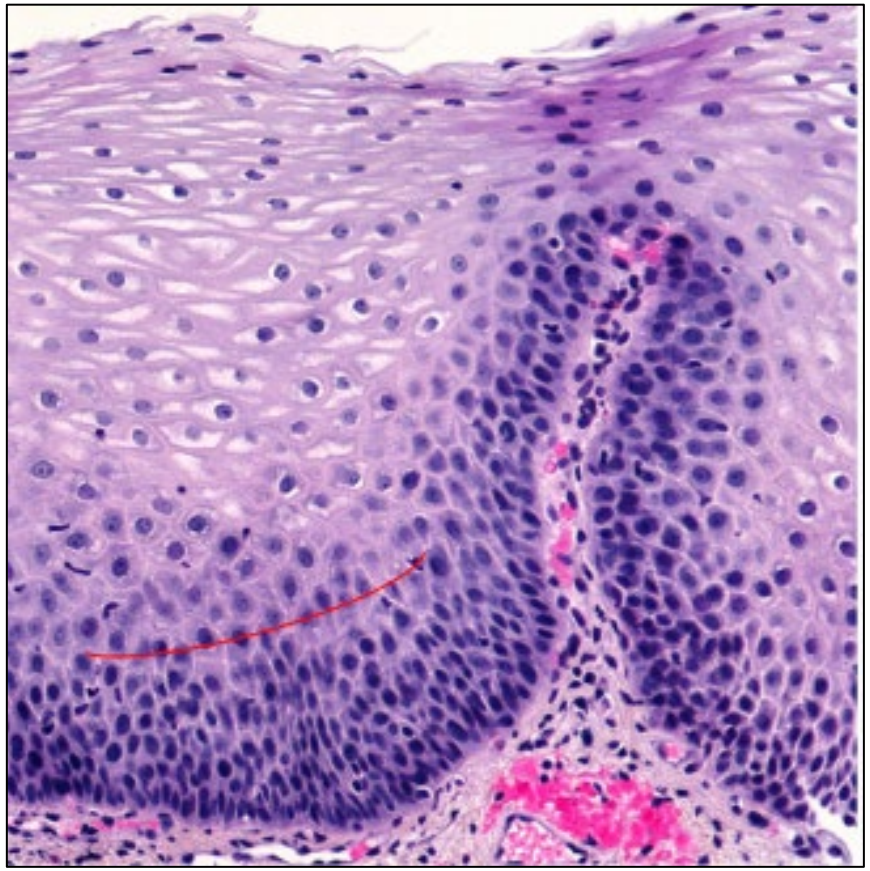
Şekil. Patolojik değişiklik olmayan, normal skuamöz özofagus epiteli (*total epitelyal kalınlık, **stromal papilla uzunluğu, ***bazal hücre tabakası kalınlığı).



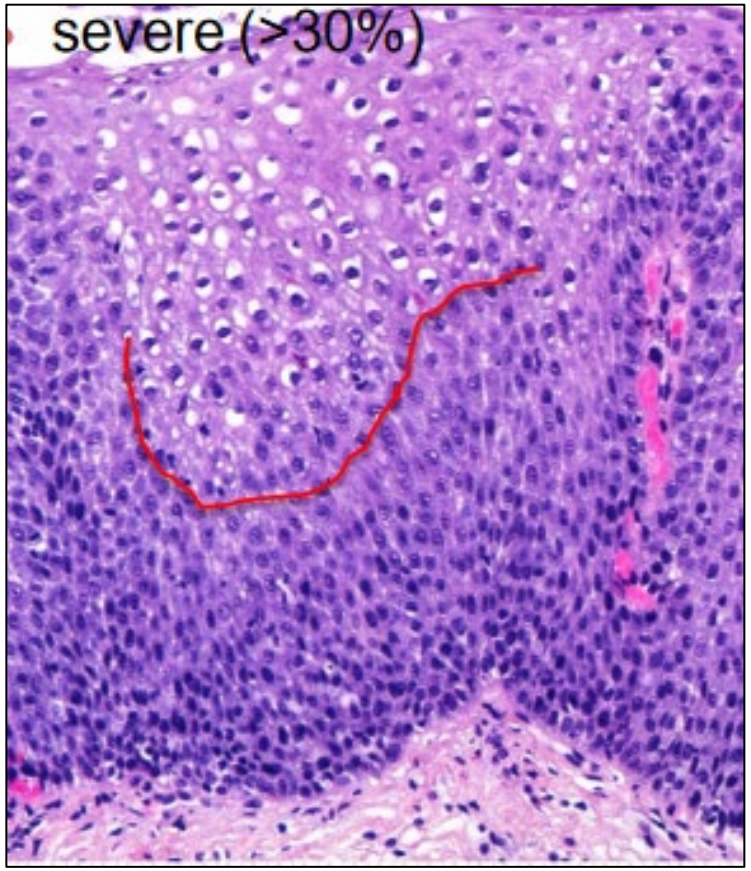
Şekil. Reflü hastalığında kalınlaşmış skuamöz özofagus epiteli (*), uzamış papillalar(**) ved kalınlaşmış bazal hücre tabakası (*) (H&E 40).

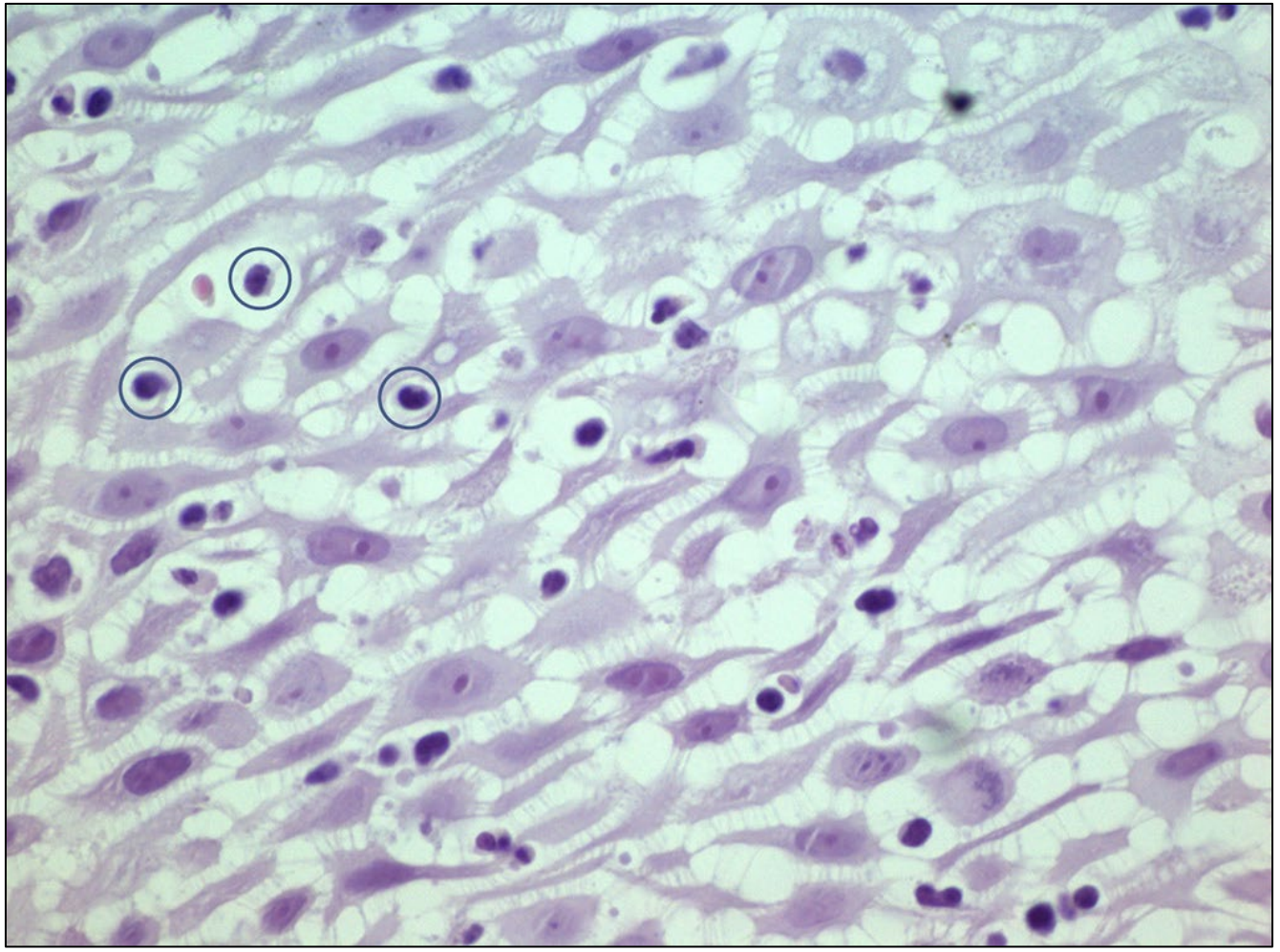
Bazal Hücre Tabakası Hiperplazisi

hafif (total epitelyal kalınlığın %15-30'u)

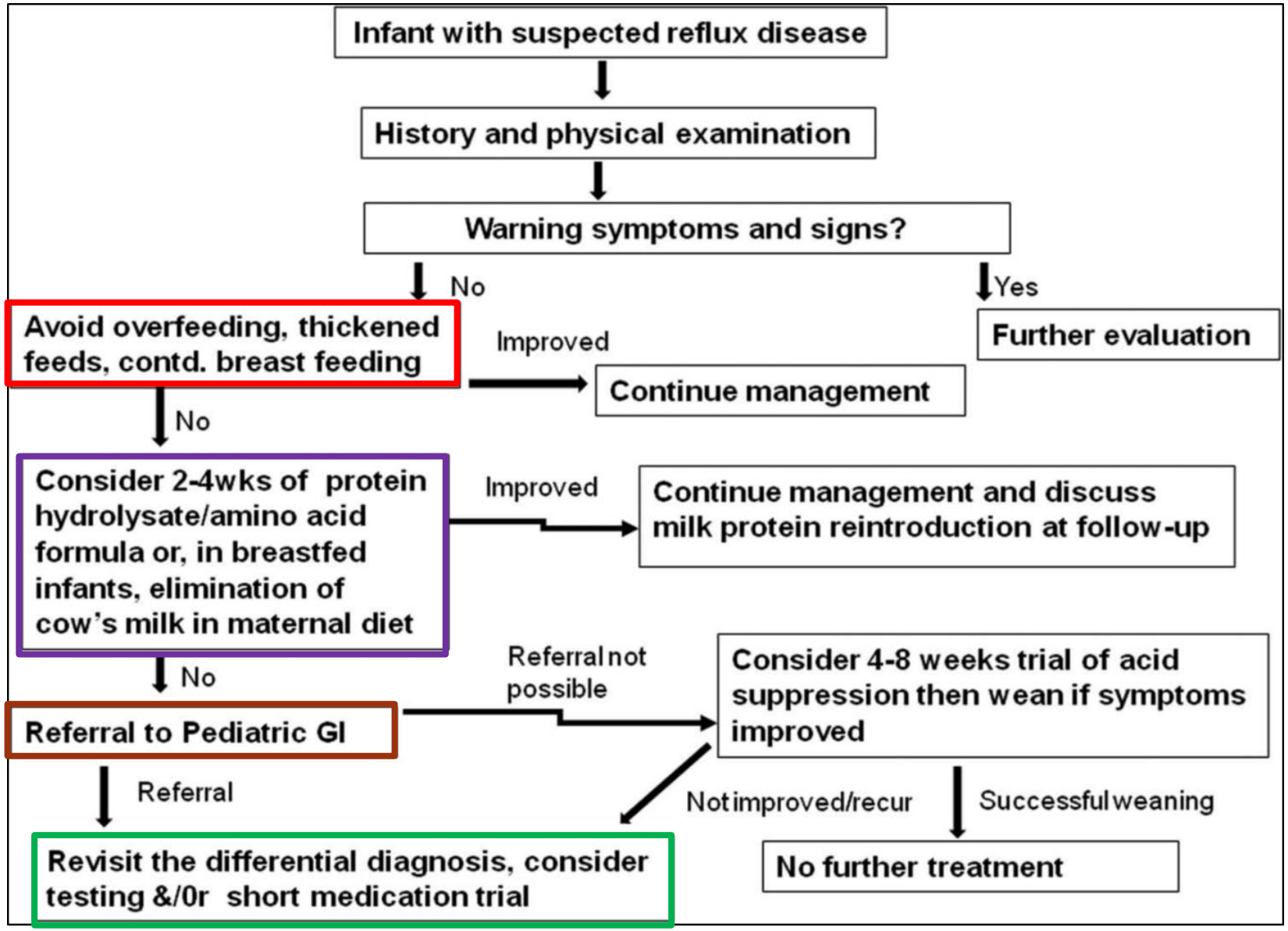


ciddi (>%30)

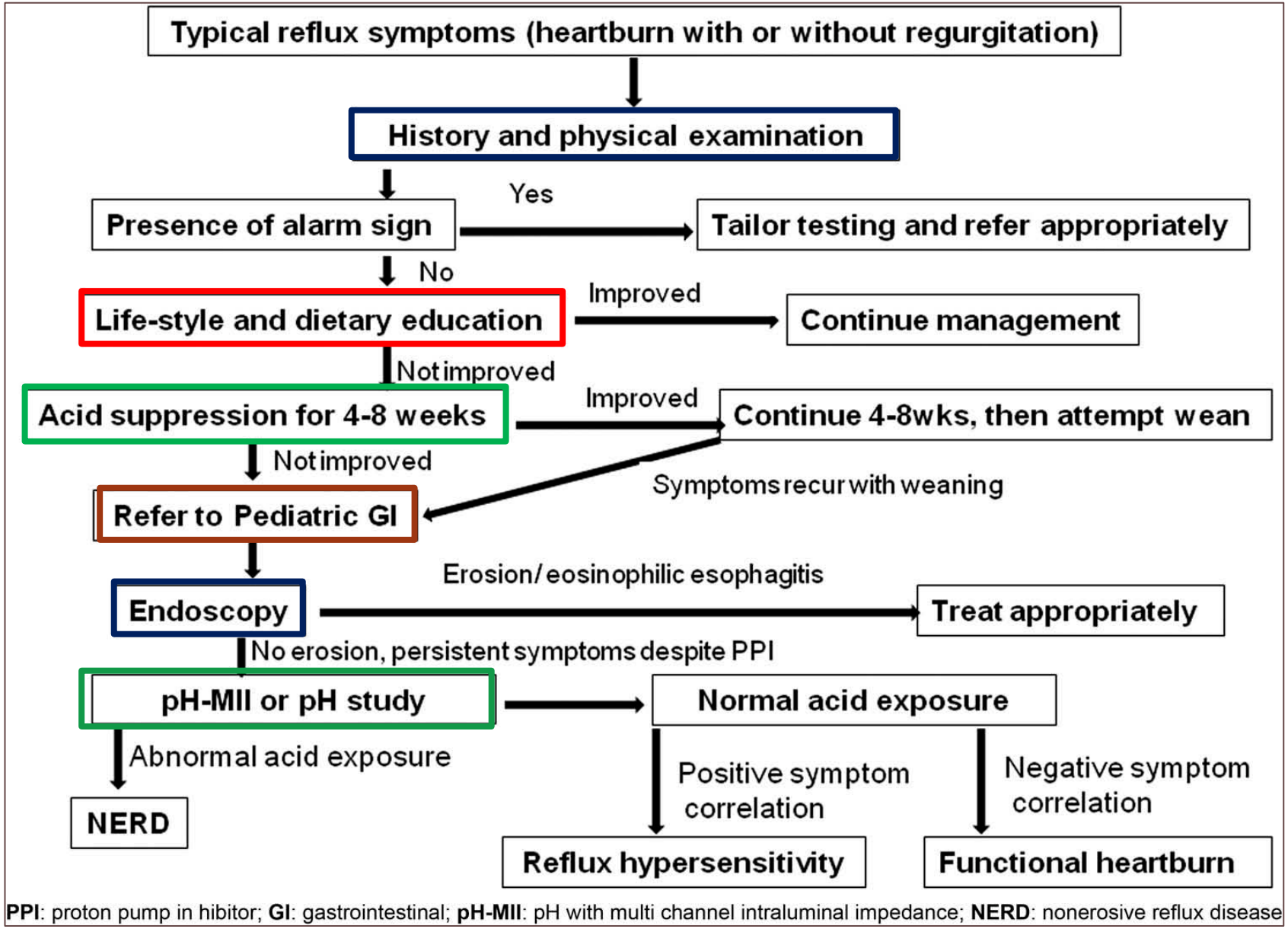




Şekil. Genişlemiş hücreler arası alanlar (DIS) gösteren skuamöz özofagus epiteli ve DIS içinde intraepitelyal lenfositler (daire içinde) (H&E 400).



Şekil. Süt çocuğunda gastroözofageal reflüye yaklaşım önerisi [NASPGHAN guideline 2018].



Şekil. Büyük çocuk ve adolesanlarda gastroözofageal reflü hastalığına yaklaşım önerisi .

Teşekkür ederim

PAEDIATRICS AND INTERNATIONAL CHILD HEALTH
2019, VOL. 39, NO. 1, 7–12
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Gastroesophageal reflux disease (GERD) in children

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PPIs are not recommended in this subset of patients as only a few of them are likely to have symptoms with an acid-related cause; **the largest randomised, placebo-controlled trial in infants showed that, for symptoms presumed to be related to reflux disease, a PPI was not better than placebo** *[21: Orenstein SR, Hassall E, Furmaga-Jablonska W, et al. J Pediatr. 2009].*

EXPERT OPINION ON PHARMACOTHERAPY
https://doi.org/10.1080/14656566.2018.1549224

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REVIEW

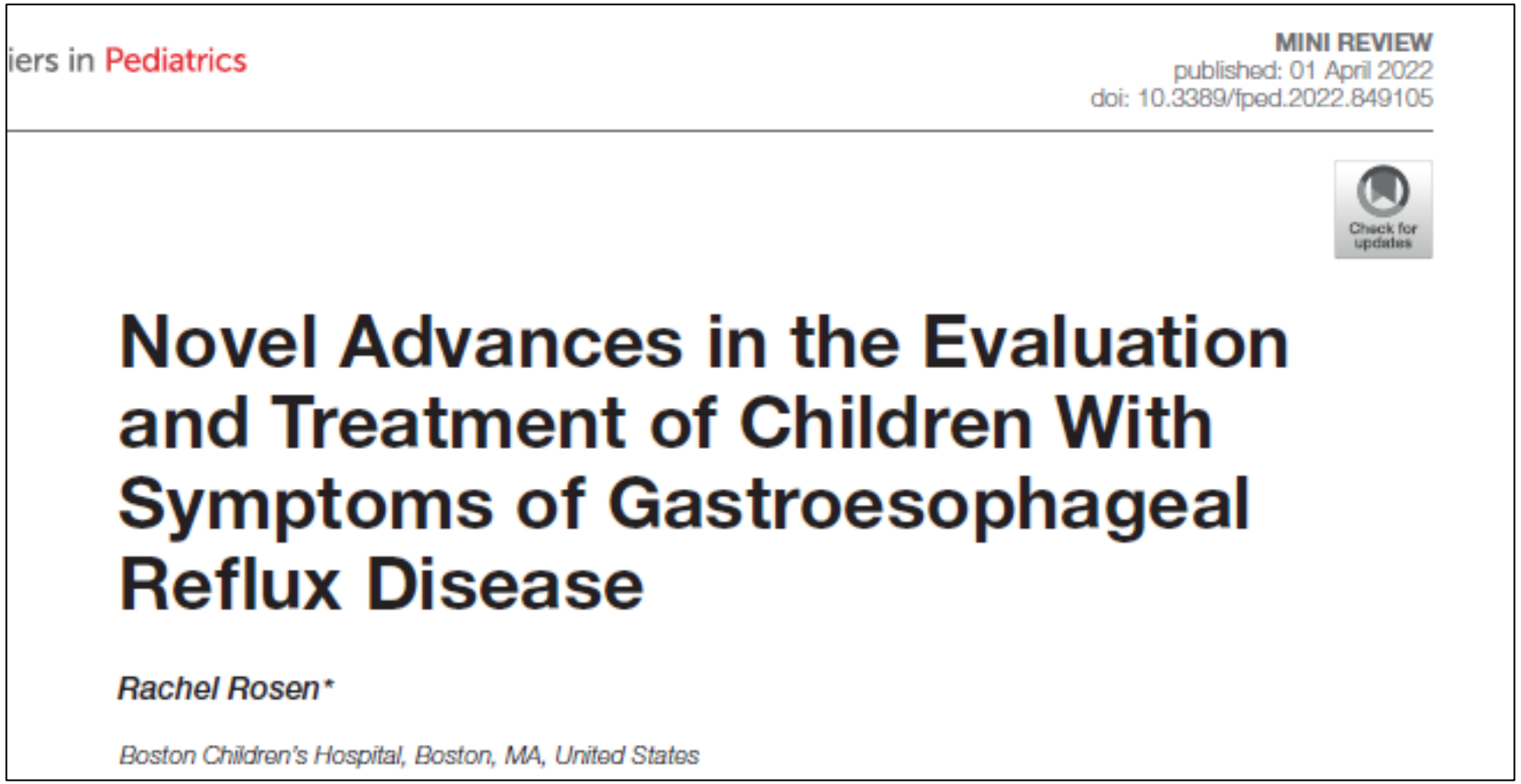
An update on the latest chemical therapies for reflux esophagitis in children

Marc Bardou[a,b], Kyle J. Fortinsky[c], Nicolas Chapelle[d], Maxime Luu[a] and Alan Barkun[e]

Data supporting the use of PPIs in infants remains scant. It is generally not recommended to use PPIs in infants unless there is sufficient evidence of erosive esophagitis.
Given their lack of proven efficacy in infants and the potential for increased risk of gastroenteritis and respiratory tract infections, PPIs should be reserved for infants with a high probability of GER.

3.2.6. Surface agents
Similar to the concerns regarding antacids, these surface agents are limited by their short duration of action, unproven efficacy, and potential harm including aluminum toxicity and milk-alkali syndrome. As such, they are not recommended for the routine management of GER but may be used for temporary occasional relief of symptoms or in those intolerant to other medications.
The last ESPGHAN and NASPGHAN guidelines, the working group decided to suggest that antacids/alginates should not be used for chronic treatment of infants and children with GERD [1].

No published evidence support the use of neither H2RA nor PPIs for the management of extraesophageal symptoms, or regurgitation only.



iers in Pediatrics

MINI REVIEW
published: 01 April 2022
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Check for updates

Novel Advances in the Evaluation and Treatment of Children With Symptoms of Gastroesophageal Reflux Disease

*Rachel Rosen**

Boston Children's Hospital, Boston, MA, United States

....in pediatrics, one quarter of children have a diagnosis of reflux hypersensitivity (8). While acid suppression may play a role in symptom management, neuromodulators to reduce pain signaling may also be important.

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REVIEW
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doi: 10.3389/fphar.2022.839972

• Springer et al. (2008) analyzed the effect of lansoprazole in infants and preterm infants with GERD symptoms and reported similar profiles of changes in pHmetry parameters and gastric pH in both the treated and placebo groups.

•pH-MII parameters
Del Buono et al studied sodium and magnesium alginate and mannitol (but not bicarbonate) in infants up to 6 months of age using pH-MII impedance. The 24 hour-reflux burden or the number of reflux events per hour did not differ in patients receiving alginate compared with those receiving placebo (204).
However, the dosage described in the study was lower than that recommended by the manufacturer which may have influenced results. Furthermore, no data on visible regurgitation/vomiting events were reported, so no conclusions about improvement in GERD symptoms can be determined.

• **The working group (NASPGHAN/ESPGHAN) suggests not to use antacids/alginates for chronic treatment of infants and children with GERD**.