

GI-Vascular axis: Enlighten and Illuminate



Chumpon Wilasrusmee

GI-Vascular axis : Chumpon Wilasrusmee M.D.

13.00-13.00	ลงทะเบียน
13.30-14.00	Ano-rectal emergency ผศ.นพ.จักรพันธ์ จิรสิริธรรม Moderator อ.นพ.ธีรวุฒิ รักชอบ
14.00-14.30	Polytrauma: Pathophysiology and management อ.นพ.ธาริน ธรรมพงษ์ Moderator อ.พญ.อุมาพร สีหะวงษ์
14.30-15.00	Management of chronic venous disease อ.พญ.ณัฐสิริ กิตติธระพงษ์ Moderator อ.นพ.เพียรเลิศ มุลวิริยกิจ
15.00-15.30	Pitfalls in emergency vascular surgery ศ.เกียรติคุณ นพ.โสภณ จิรสิริธรรม Moderator อ.พญ.ณัฐสิริ กิตติธระพงษ์
15.30-15.45	Break
15.45-16.15	Gastric cancer for resident ผศ.นพ.ไชยรัตน์ ทรัพย์สมุทรชัย Moderator อ.นพ.จิรัฏฐ์ ชีราประดิษฐ์
16.15-16.45	Difficult cholecystectomy ผศ.นพ.พงศ์ธร ตั้งทวี Moderator อ.นพ.จิรัฏฐ์ ชีราประดิษฐ์
16.45-17.15	Management of gastric emergency ผศ.นพ.พงศ์ศิษฐ์ สิงห์ทัศน์ Moderator อ.พญ.อุมาพร สีหะวงษ์
17.15-17.20	Conclusion and closing conference
18.30-21.00	Dinner symposium: Gut-vascular axis: Enlighten and illumination ศ.นพ.จุมพล วิชาศรีคม

Slide 1/100



Case reports

GI-vascular axis



Vixol - gastric outlet obstruction

J Med Assoc Thai 1999; 82 (6):628

Views: 752 | Downloads: 11 | Responses: 0



Respond to this article



Print



Alert & updates

Case Report Open Access

Delayed Sequelae of Hydrochloric Acid Ingestion

Wilasrusmee C , Sirikulchayanonta V, Tirapanitch W

Abstract | Full Text | References | Citation | Response

Hydrochloric acid is the active ingredient in common toilet bowl cleaner agents used in Thailand but it is occasionally abused for suicidal attempts by ingestion. Clinicopathological description caused by this agent has rarely been mentioned in the literature. We reported three cases of gastric outlet obstruction. Two of these cases were initially treated in provincial hospital lavages. No clinical symptoms relating to ingestion and swallowing were present in the three cases after ingestion but patients developed vomiting and cachexia a few months later. At laparotomy, pylorus and antrum were the most common sites of injury. All cases were treated with pyloroplasty and antral resection. Pathological findings of the resected specimens showed mucosal ulceration, submucosal thickening of muscularis mucosae, and eosinophilic infiltrations. Most cases in the literature had preoperative jejunosomy preformed but our cases did not have such a preoperative procedure. Outcomes of all cases were considered good and no postoperative complication was found.



Median Arcuate Ligament Syndrome (MALS): Significance of Collateral Vessels in Relative Vena Cava (VC) Obstruction

Chumpon Wilasrusmee¹, MD., Vibhakorn Permpoon², MD., Napaphat Proprom¹, BSc.

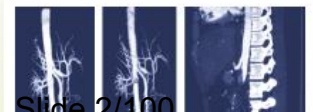
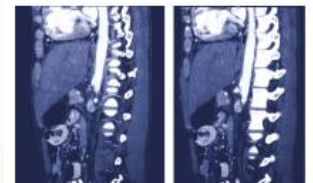
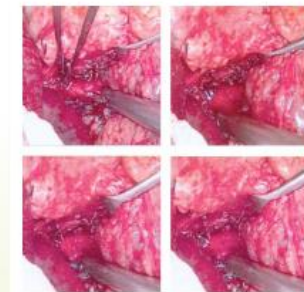
¹Department of Surgery, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand, ²Bumrungrad International Hospital, Bangkok, Thailand.

Introduction

MALS or celiac artery compression syndrome is an uncommon disease that commonly affects young individuals. It is understood that the arcuate ligament crosses anterior to the celiac artery which causes some degree of compression. In 4% of normal, asymptomatic individuals. However, 1% of these individuals experience severe compression and symptoms of MALS. We aimed to first report and discuss the case of MALS in which a patient had relative VC obstruction.

Report

A 60-year-old male patient presented with abdominal pain



Slide 2/100

หมอฟ้าตัดส่องกล้อง อโไพศาล

หมอฟ้าตัดหลอดเลือด อโโสภณ

GI-vascular landmark

ตำรา
ศัลยกรรมส่องกล้อง
ในระบบทางเดินอาหาร เล่ม 2

TEXTBOOK OF
SURGICAL
ENDOSCOPY
OF
THE
GI TRACT
Vol. 2

นายแพทย์ไพศาล พงศ์ชัยฤกษ์

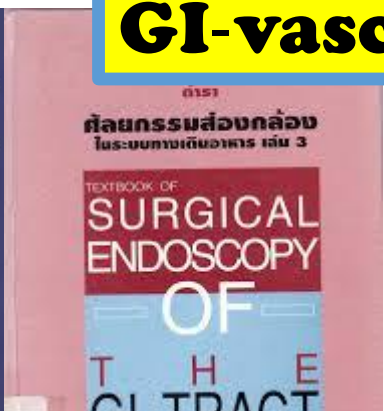
วิกิพีเดีย
สารานุกรมเสรี

หน้าหลัก
ถามคำถาม
เหตุการณ์ปัจจุบัน
ส่วนบทความ
เกี่ยวกับวิกิพีเดีย
ติดต่อเรา
บริจาคให้วิกิพีเดีย

มีส่วนร่วม

คำอธิบาย
เริ่มต้นเขียน
ศาลาประชาคม
เปลี่ยนแปลงล่าสุด
ดิสคอร์ด

เครื่องมือ



การผ่าตัดส่องกล้อง

จากวิกิพีเดีย สารานุกรมเสรี

 บทความนี้**ไม่มีการอ้างอิงจากแหล่งที่มาใด** กรุณาช่วยปรับปรุงบทความนี้ โดยเพิ่มการอ้างอิงแหล่งที่มาที่ไม่มีแหล่งที่มาอาจถูกคัดค้านหรือลบออก

การผ่าตัดส่องกล้อง (อังกฤษ: laparoscopy, laparoscopic surgery) เป็นการผ่าตัดโดยการเจาะผ่าน**ช่องท้องหรือผิวหนัง**ใกล้เคียงบริเวณอวัยวะที่ต้องการผ่าตัด เพื่อสอดอุปกรณ์ผ่าตัด อุปกรณ์ไฟฉาย และกล้องขนาดเล็กเพื่อบันทึกภาพและส่งมายังจอรับซึ่งทำหน้าที่แทนตาของ**ศัลยแพทย์**รวมถึงอุปกรณ์อื่นๆ เพื่อให้การผ่าตัดสะดวกขึ้นและลดความเจ็บปวดจากแผลผ่าตัดทำให้ระยะพักฟื้นของผู้ป่วยน้อยลง

เครื่องมือและอุปกรณ์ที่ใช้ในการผ่าตัดด้วยกล้องประกอบด้วยเครื่องมือหลายประเภท ดังนี้ ("ไพศาล พงศ์ชัยฤกษ์. ตำราศัลยกรรมส่องกล้องในระบบทางเดินอาหาร เล่ม ๓ หน้า ๔๑๕ - ๕๙๙", พิมพ์ครั้งที่ ๑ กรุงเทพฯ : บริษัท โฮลิสติก พับลิชชิ่ง จำกัด, สิงหาคม ๒๕๓๙.)

- 1. เครื่องมือที่ใช้ผลิตภาพ ได้แก่ กล้องส่องช่องท้อง (rigid endoscope) กล้องถ่ายวิดีโอ (video camera and controller) เครื่องกำเนิดแสงสว่าง (light source) และจอรับภาพ (monitor)

2. เครื่องมือที่ใช้ในการทำให้เกิดช่องว่างในท้อง เป็นเครื่องมือที่บรรจุแก๊สคาร์บอนไดออกไซด์เข้าไปในช่องท้อง ซึ่งตามปกติ GI-Vascular axis : Chumpon Wilasrusmee M.D.



GI-vascular direction

• Ramathibodi position

invasive surgery
1991
computer chip T camera videoscope)

ซึ่งเป็นการผ่าตัดที่ต้องอาศัยเทคโนโลยี
มพิวเตอร์กับระบบภาพวิดีโอทัศน์
(computer chip T camera videoscope)
นับตั้งแต่ปี ค.ศ. 1987 Philippe Mouret ศัลยแพทย์ชาว
ฝรั่งเศสคนแรกที่ทำกรักษาผ่าตัดถุงน้ำดีทางกล้องวิดีโอทัศน์
ในผู้ป่วยที่เป็นนิ่วในถุงน้ำดีเป็นผลสำเร็จ นับเป็นการจุด
ชนวนที่สำคัญของการแพทย์ทั่วโลก^{2,7} และในปี 1988-1990
Dubois F. ได้ทำให้การผ่าตัดถุงน้ำดีทางกล้องวิดีโอทัศน์เป็นที่
สนใจกันอย่างแพร่หลายด้วยการรายงานผลการรักษาไว้
อย่างดีในวารสารการแพทย์ โดยรายงานผู้ป่วยมีอาการ
ปวดแผลเล็กน้อย แผลผ่าตัดมีขนาดเล็กสวยงาม ระยะเวลา
อยู่รักษาในโรงพยาบาลสั้นและสามารถกลับไปประกอบ
ภารกิจได้อย่างรวดเร็วรวมทั้งมีภาวะแทรกซ้อนน้อย

ในประเทศไทย พ.ศ. 2534 ได้มีการสาธิตการทำผ่าตัด
ถุงน้ำดีทางกล้องวิดีโอทัศน์ในผู้ป่วยคนไทยเป็นรายแรกของ
ประเทศที่โรงพยาบาลวชิรพยาบาล โดยศัลยแพทย์ชาว
ต่างชาติ^{4,5,7} ต่อมาก็ได้รับความนิยมกันอย่างแพร่หลายใน
ประเทศไทย ทั้งโรงพยาบาลในกรุงเทพฯ และโรงพยาบาลต่าง
จังหวัด¹ สำหรับโรงพยาบาลศรีนครินทร์ มหาวิทยาลัย
ขอนแก่น ได้ GI Vascular axis วิจิตร ชุ่มพูน วิลารุสมะ M.D.

อ ปรีดา: Bariatric surgery



บรรณานุกรม

1. ทวี รัตนชูเอก, สุชาติ จันทวิบูลย์, วีรชัย มหาธราดล, ชัยรัตน์ โภคาวัฒนา. การผ่าตัดทางกล้องวิดีโอทัศน์. เอกสารประกอบการนำเสนอ ในประชุมวิชาการของสถาบันวิจัยระบบสาธารณสุข. กรุงเทพฯ : ดีไซน์, 2539; หน้า 1-28.
2. ทองอวบ อุดรวิเชียร. History and Progress of Laparoscopic Surgery. ใน: ทองอวบ อุดรวิเชียร, ชัยวัฒน์ ปาลวัฒน์วิไชย, สุชาติ อาริมิตรและคณะ, บรรณาธิการ. Laparoscopic and Autosuture Surgery. ขอนแก่น: ศิริภักดิ์ออฟเซ็ท, 2538; หน้า 5-10.
3. ไพศาล พงศ์ชัยฤกษ์. ศัลยกรรมส่องกล้องในระบบทางเดินอาหาร เล่ม 1. กรุงเทพฯ : โฮลิสติก แพบลิชชิง, 2539 : หน้า 572-573.



July 2011 · [Journal of vascular surgery: official publication, the Society for Vascular Surgery \[and\] International Society for Cardiovascular Surgery, North American Chapter](#) 54(5):1259-65; discussion 1265

DOI: [10.1016/j.jvs.2011.03.301](#)

Source · [PubMed](#)

Authors:



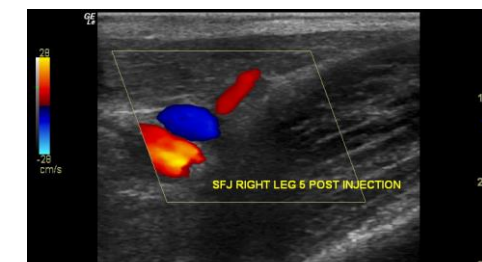
Boonprasit Kritpracha

๑124.41 · Prince of Songkla University



Dhanakom Premprabha

๑110.08 · Prince of Songkla University



PIG Histoacryl injection project

Slide 4/100

ISSN Research Awards 2020

TO Chairat Supsamutchai, Thitipong Setthalikhit, Chumpon Wilasrusmee,
Pornraksa Ovarthaiyapong, Jakrap,

ISSN cordially welcomes you to take your standard to the next level and receive your high society International Award in the fascinating ceremony on November 28, 2020 at Sowbaghya Hall, Ramyas, Tiruchirapalli, Tamil Nadu, India. ISSN International Research Awards 2020 is proud to choose you for, **"Wedge gastrectomy: Robot-assisted with a hand-sewn repair versus a laparoscopic linear stapler techn"** under the title, **"Outstanding Researcher Award"**. There is no change in date or venue.

AWARD RANK: ISSN Golden Research Award

GI-vascular awards



in the spotlight...

SUNY Upstate Medical Univ

Chumpon Wilasrusmee, M.D. receives two awards of excellence

The American Transplant Congress 2002 (ATC) has selected Chumpon Wilasrusmee, MD, of SUNY Upstate's Transplant Division of the Department of Surgery, to receive a Young Investigator Award. Dr. Wilasrusmee will also be recognized in the program



Dilip Kittur, MD (left) with Chumpon Wilasrusmee, MD

Effect of short delayed appendectomy on surgical site infection (SSI)

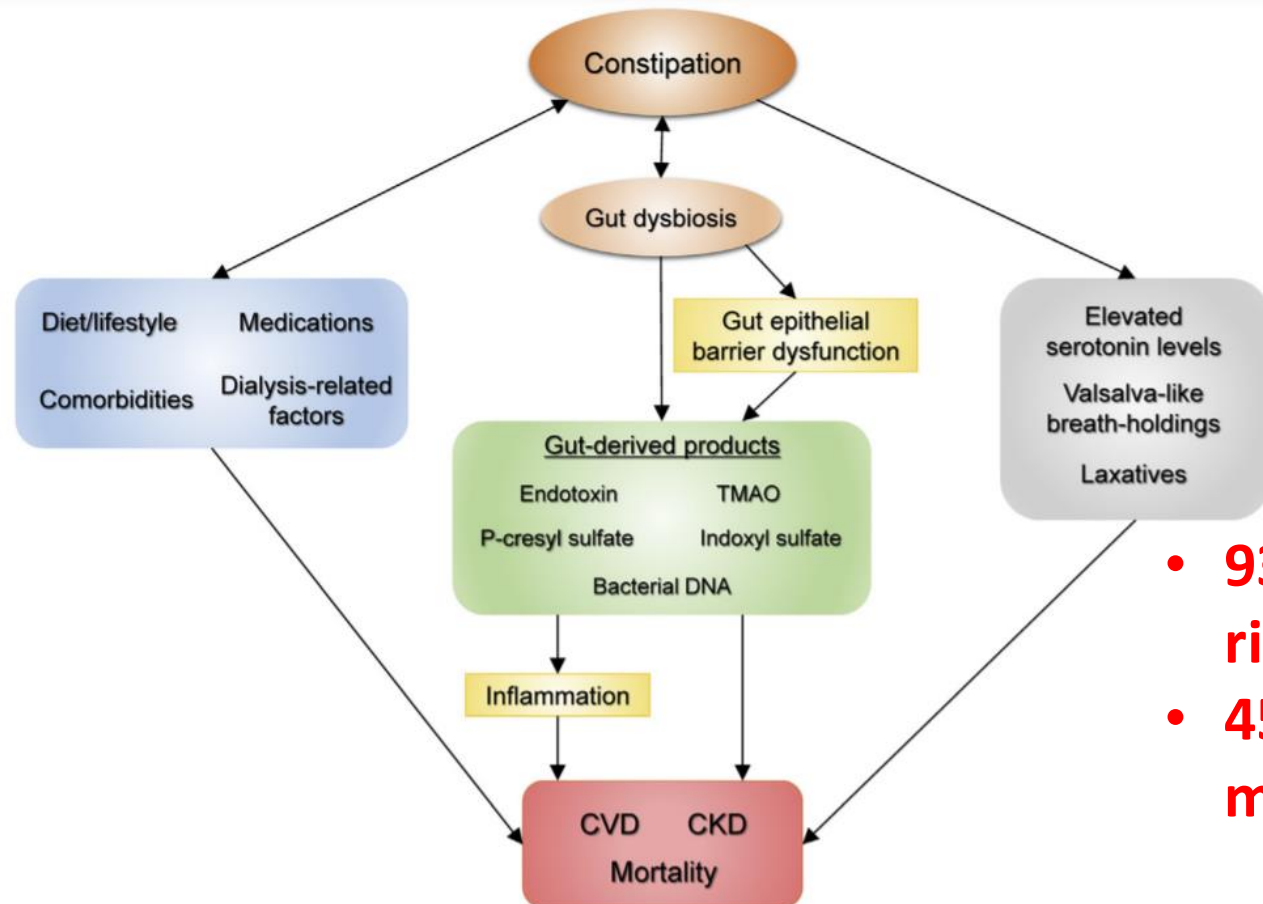
GI-Vascular axis : Chumpon Wilasrusmee M.D.



GI-vascular update

Kidney Int Rep (2020) 5, 121–134

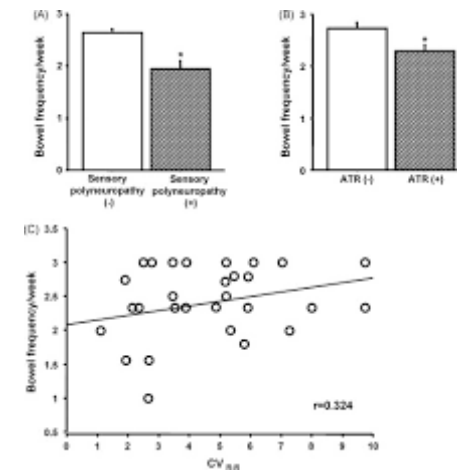
Constipation and CVD



- 93,676 postmenopausal , 23% higher risk of CV events
- 45,112 Japanese cohort, higher CV mortality (21% vs 39%)

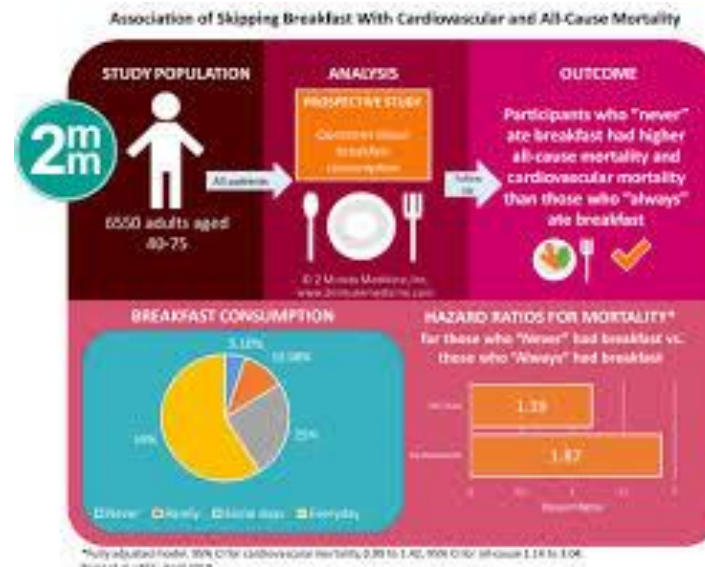
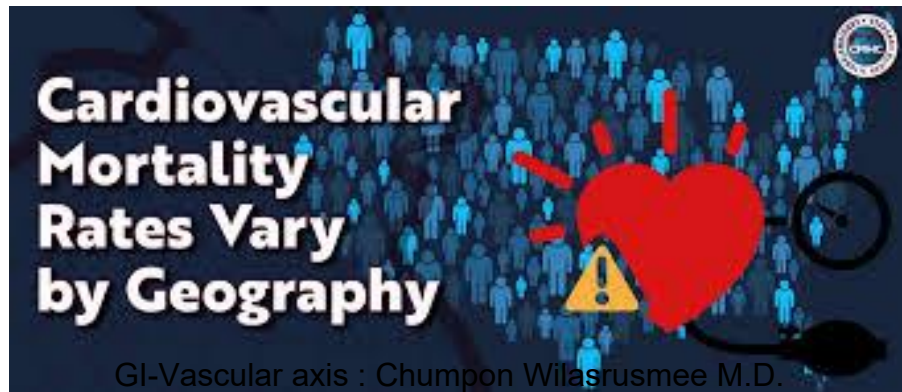
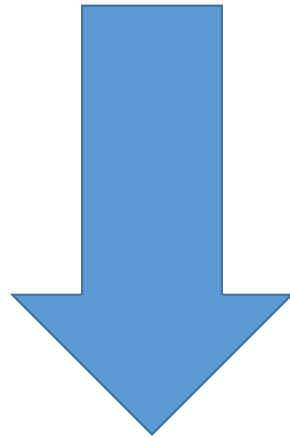
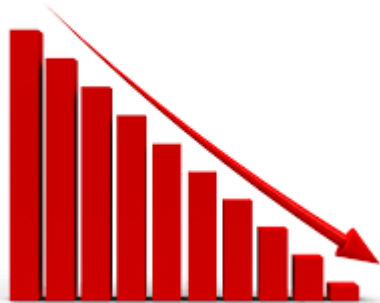
Figure 3. Schematic representation of potential mechanisms underlying the association between constipation and adverse outcomes in chronic kidney disease (CKD). CVD, cardiovascular disease; TMAO, trimethylamine-N-oxide.

The effect of mosapride citrate on constipation in patients with diabetes



- 5-HT4 recently found in lower intestine including rectum
- Diabetic patients with constipation: mosapride citrate (15 mg/day, $n = 20$) or domperidone (30 mg/day, $n = 12$) for 8 weeks
- Mosapride: increased bowel frequency after **4 and 8 weeks**, while no in control
- **Glycemic control also improved by mosapride**





GI-vascular relation



Intestinal permeability is increased after major vascular surgery

- A significant increase in intestinal permeability commonly occurs in patients after elective and emergency major vascular surgery
- Reperfusion injury rather than the ischemic period of the intestine itself
(J VASC SURG 1993;17:734-7.)



Home > Journal of the American Heart Association > Vol. 6, No. 5 > Gastric Bypass Surgery Produces a

OPEN ACCESS
RESEARCH ARTICLE

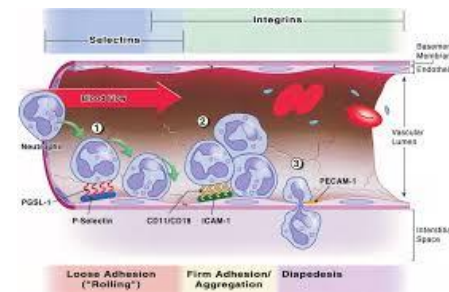
PDF/EPUB

Tools Share

Gastric Bypass Surgery Produces a Durable Reduction in Cardiovascular Disease Risk Factors and Reduces the Long-Term Risks of Congestive Heart Failure

Peter N. Benotti, G. Craig Wood, David J. Carey, Vishal C. Mehra, Tooraj Mirshahi, Michelle R. Lent, Anthony T. Petrick, Christopher Still, Glenn S. Gerhard, and Annemarie G. Hirsch

Originally published 23 May 2017 | <https://doi.org/10.1161/JAHA.116.005126> | Journal of the American Heart Association. ;6



GUT

GI-Vascular axis: Chumpon Wilasrusmee M.D.

VAS

VAS

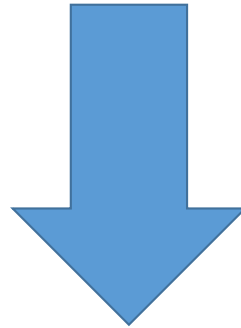
GUT

Slide 9/100



GUT

VAS



GI Dysfunction: Ileus

Improvement of glycemic control after treatment with mosapride for diabetic gastropathy.

Diabetes Care 2000 Aug; 23(8): 1198-1199.
<https://doi.org/10.2337/diacare.23.8.1198>



Small bowel motility and transit after aortic surgery

Brent W. Miedema, MD, Sarah Schillie, MD, James W. Simmons, MD, Scott V. Burgess, MD, Timothy Liem, MD, and Donald Silver, MD, *Columbia, Mo*

Objective: The inability to tolerate feedings after aortic surgery prolongs hospitalization. The aim of this study was to define jejunal manometric and small bowel transit characteristics associated with the ileus that follows transperitoneal aortic surgery.

Methods: Five male patients who underwent a jejunal multilumen catheter. 12, 24, 26, 28, and 38 cm past the ligar 3 postoperative days. The migrating nu waves were identified with computer an data previously reported in the literat radiographs.

Results: All patients had ileus develop wit (median, 7 days) after surgery. Jejunal n less in patients then in control subjects. having more phase I, less phase II, and patients but not in the control subjects.

Conclusion: Motor activity is present in the jejunum shortly after aortic surgery. However, the activity is decreased in intensity and the fasting cycle differs from control subjects. Retrograde migration of phase III is the most likely abnormality, resulting in delayed small bowel transit. The data would predict a high rate of enteral feeding intolerance early after surgery. Future studies should focus on pharmacologic manipulation to rapidly return small bowel motility to a more normal state after aortic surgery. (J Vasc Surg 2002;35:119-127)

FREE ACCESS
RESEARCH ARTICLE

PDF/EPUB

Tools Share

Jump to

Surgical Intervention for Peripheral Arterial Disease

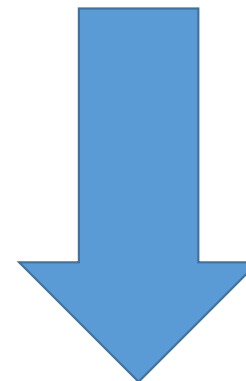
Shant M. Vartanian and Michael S. Conte

Originally published 24 Apr 2015 | <https://doi.org/10.1161/CIRCRESAHA.116.303504> | Circulation Research. 2015;116:1614-1628

Abstract

The prevalence of peripheral arterial disease (PAD) is increasing

Mosapride Reduces Prolonged Postoperative Ileus



Gotlib Conn et al. *Systematic Reviews* 2012, 1:52
<http://www.systematicreviewsjournal.com/content/1/1/52>



PROTOCOL

Open Access

Enhanced recovery after vascular surgery: protocol for a systematic review

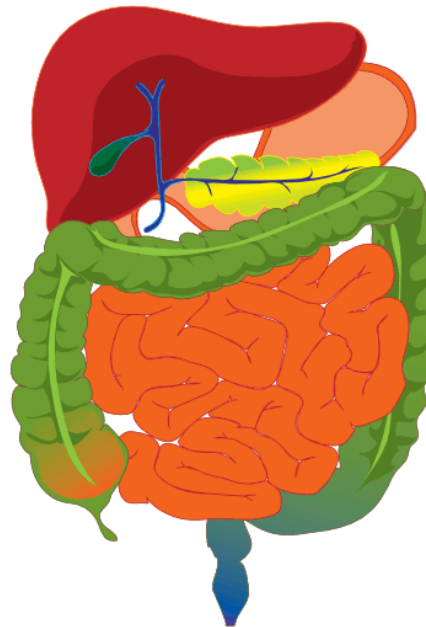
Lesley Gotlib Conn^{1*}, Ori D Rotstein¹, Elisa Greco¹, Andrea C Tricco², Laure Perrier^{2,3}, Charlene Soobiah² and Tony Moloney¹

GI-vascular ERAS

GI-vascular sponsor

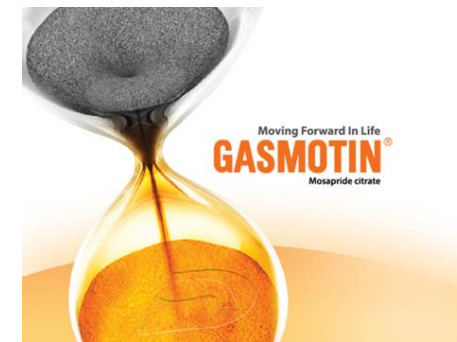
Characteristic Profile of GASMOTIN

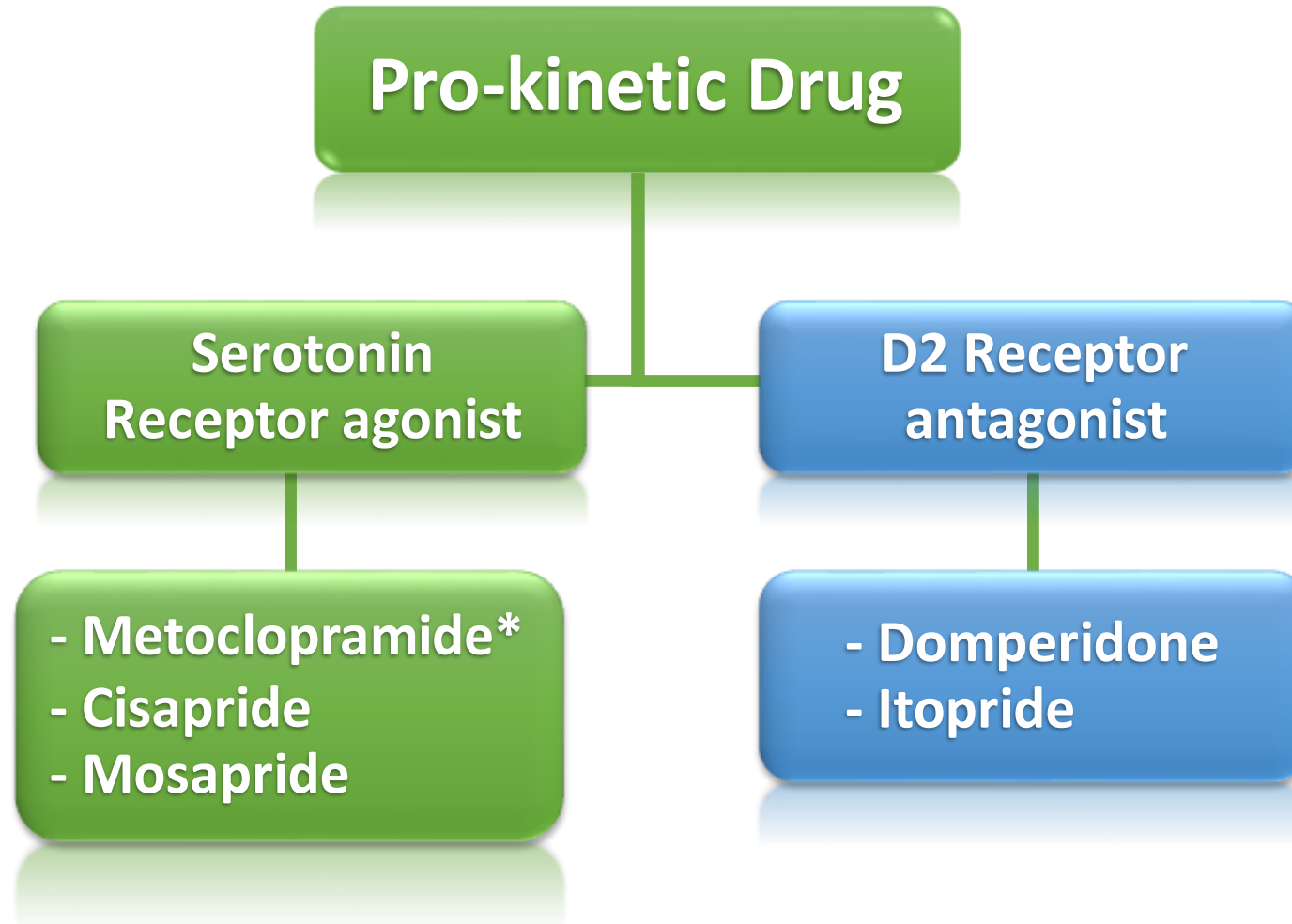
Selective 5-HT₄ receptor
agonistic effect
Selectively acts on GI tract



Moving Forward In Life
GASMOTIN[®]
Mosapride citrate

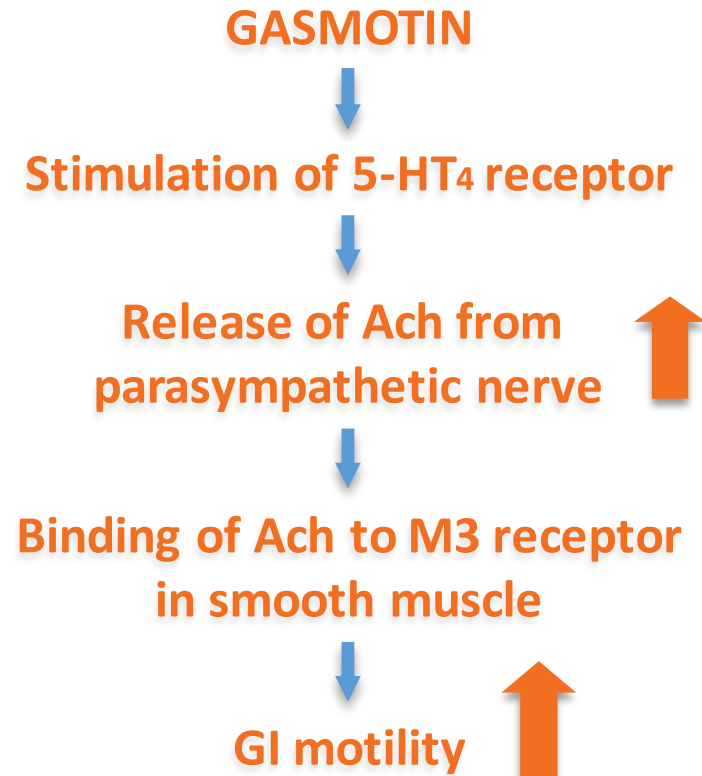
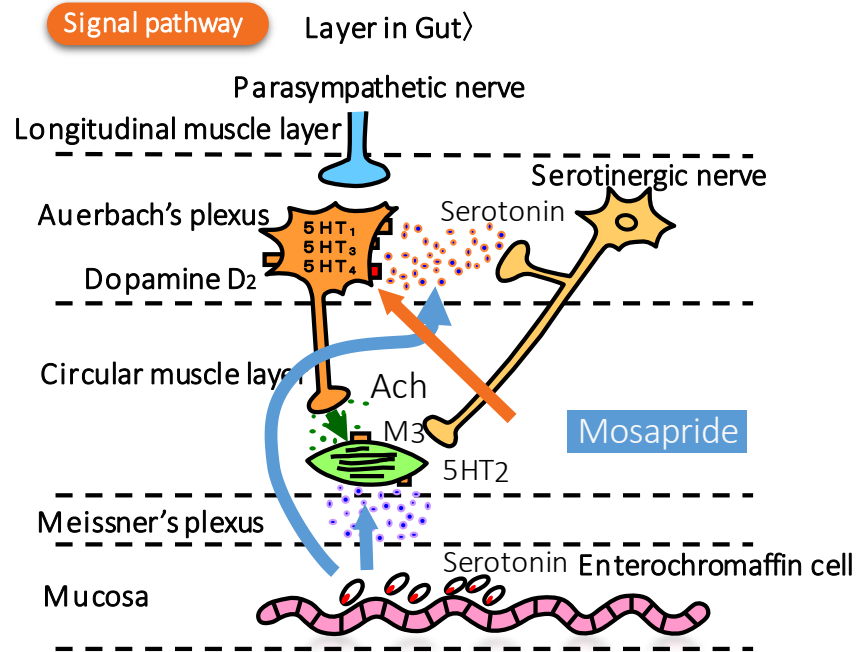
The selective
5-HT₄ receptor agonist





* Metoclopramide: action both serotonin agonist and D₂ antagonist

Mechanism of Action of GASMOTIN



ACh : Achetylcholine
M₃ : Muscarinic receptor
D₂ : Dopamine D₂ receptor
5HT₁ – 5HT₄ : Serotonin receptors



GUT



VAS

GI Dysfunction: Ileus



GI-vascular outcome





40 patients

(The indication for HALC: Carcinoma of the colon or the rectosigmoid less than 8 cm in size, with no adjacent organ involvement detected by CT)

Table 1. Exclusion criteria for study participation

Metastatic disease
Intestinal obstruction or perforation
Physical status 4 or 5 on ASA classification
History of gastric or colon resection
Diabetes mellitus
Disease of central nervous system or peripheral nerves
<20 years

ASA = American Society of Anesthesiologists

**Postoperative
day 1**

20 patients
Mosapride 15 mg.
with 50 ml. of water,

20 patients
Placebo
With 50 ml. of water,
3 times a day



Table 2. Demographic characteristics of study patients

	<i>Mosapride (n=20)</i>	<i>Control (n=20)</i>	<i>P value</i>
Age (years)	64.2 (35–82)	70.6 (55–85)	0.1333
Male/female ratio	9/11	9/11	>0.9999
ASA classification (no. of patients)			0.5186
1	13	11	
2	7	9	
3	0	0	
Location of tumor (no. of patients)			0.7515
Right	9	10	
Left	11	10	
Duration of operation (min)	159.8 (90–285)	180.1 (115–370)	0.3438
Operative blood loss (ml)	63.1 (1–350)	89.2 (1–430)	0.7764
Time from first dose to surgery (hr)	17.0 (14–20.56)	17.4 (13–20.5)	0.8151

ASA = American Society of Anesthesiologists. • Unless otherwise specified, data are means with ranges in parentheses. • Comparisons regarding gender, ASA classification, and location of tumor were made by using the chi-square test. • Comparisons regarding age, duration of operation, and operation blood loss were made by using the Mann-Whitney *U* test.

Randomized Controlled Trial > Dis Colon Rectum. 2008 Nov;51(11):1692-5.

doi: 10.1007/s10350-008-9407-0. Epub 2008 Jun 27.

**Effect of mosapride on recovery of intestinal motility
after hand-assisted laparoscopic colectomy for
carcinoma**

GI-Vascular axis : Chumpon Wilasrusmee M.D.

Slide 16/100

- Gastric emptying was improved by mosapride
- The results suggested that the period of **postoperative ileus** following hand-assisted laparoscopic colectomy can be shortened by treatment with mosapride



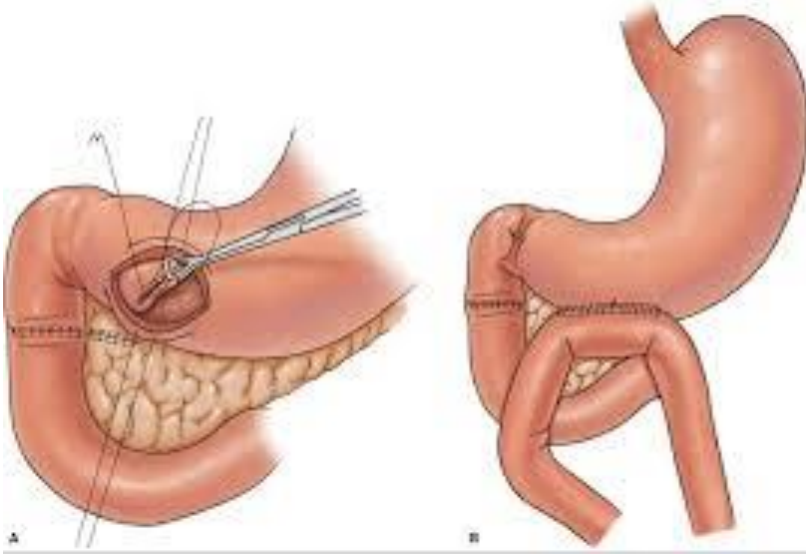
End point parameter	Mosapride	Control	<i>P</i> -value
First bowel movement	48.5 hr.	69.3 hr.	0.0149**
Gastric emptying rate	27.9 min	35.3 min	0.0294**
Postoperative hospital stay	6.7 days	8.4 days	0.0398**

Mosapride in GI surgery

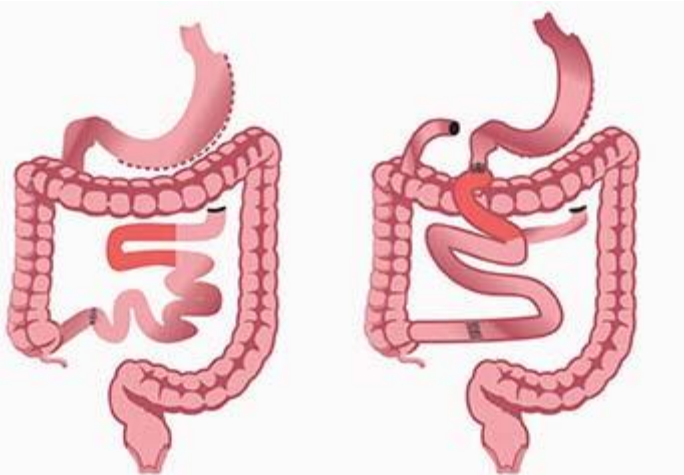
J. Vet. Sci. (2009), 10(2), 157–160
DOI: 10.4142/jvs.2009.10.2.157

JOURNAL OF
Veterinary
Science

Effects of mosapride on motility of the small intestine and caecum in normal horses after jejunocecostomy



- Mosapride (treated group) at 1.5 mg/kg once daily for 5 days after surgery
- The electrointestinography (EIG) maximum amplitude
- Motility significantly decreased following surgery
- In the treated group, the EIG maximum amplitude of the small intestine was significantly higher than controls from day 6~31 after treatment

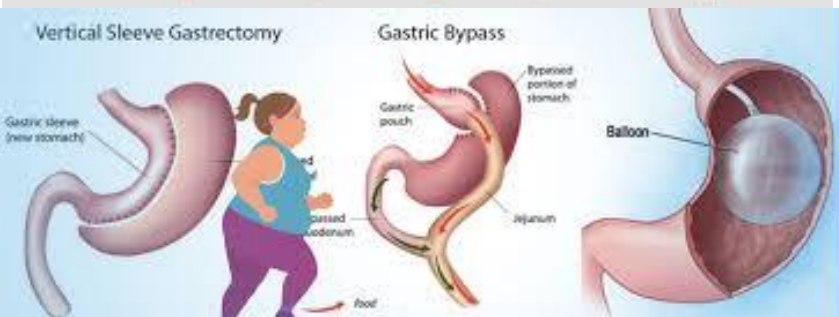


GI-Vascular axis : Chumpon Wilasrusmee M.D.
SG with near interposition

Nelash Mishra



WHAT ARE THE TYPES OF BARIATRIC SURGERY?



Outcome



GI Dysfunction: Ileus



REVIEWS

Pharmacologic Management of Malignant Bowel Obstruction: When Surgery Is Not an Option

J. Hosp. Med. 2019 June;14 (6) :367-373. Published online first April 8, 2019. | 10.12788/jhm.3187

Somatostatin analogs, steroids, H2-blockers, and other modalities can be effective

Malignant obstruction



Outcome



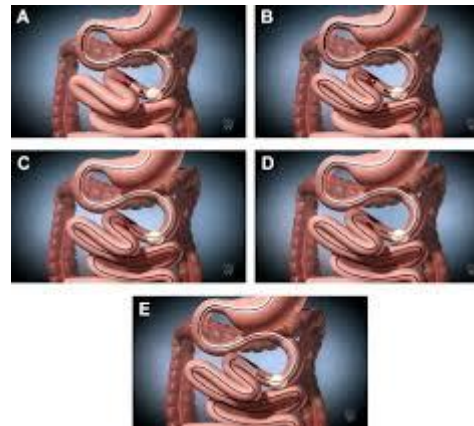
Gastrointestinal Intervention
Volume 3, Issue 1, June 2014, Pages 30-34



Review Article

Palliative enteroscopic stent placement for malignant mid-gut obstruction

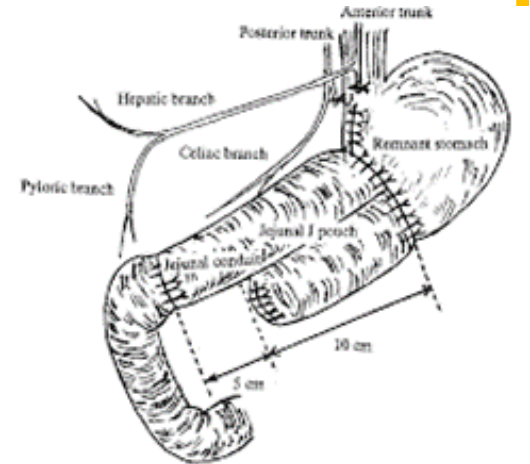
GI-Vascular axis : Chumpon Wilasrusmee M.D.



Slide 20/100

Effects of Mosapride Citrate on Patients after Vagal Nerve Preserving Distal Gastrectomy Reconstructed by Interposition of a Jejunal J Pouch with a Jejunal Conduit for Early Gastric Cancer

March 2006 · [World Journal of Surgery](#) 30(2):205-12



Distal gastrectomy reconstructed by interposition of a 10-cm jejunal J pouch with a

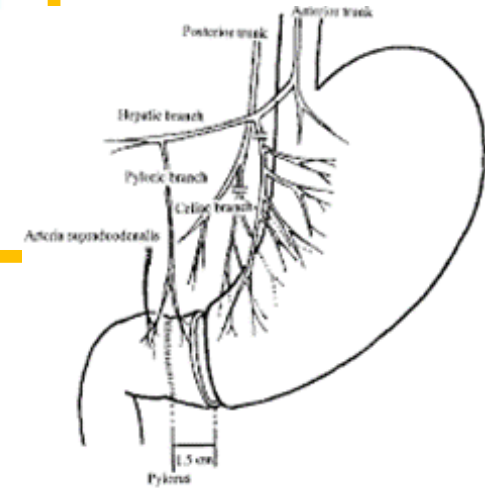
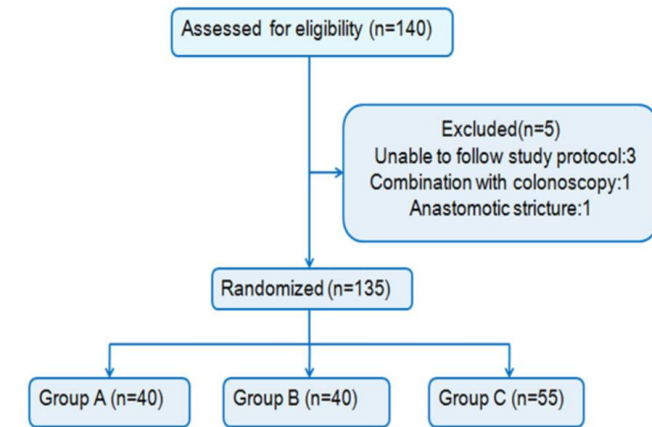


Fig. 1. Vagus nerve-preserving technique: only the gastric branches of the

- MS therapy at an oral dose of 15 mg/day for 3 months
- MS therapy group clearly had improved gastric stasis compared with the before MS therapy group
- These results showed more satisfactory QOL in patients after MS therapy
- It is possible that MS therapy improves abdominal fullness due to the postprandial stasis in the substitute stomach, contributing to the improvement of QOL

Efficacy of a New Preparation Regimen with Mosapride and Low Volume of Water Intake for Endoscopy Preparation in Postgastrectomy Patients



Group A: Mosapride with low volume water group
Group B: Large volume water group
Group C: Prolonged fasting group (Control)

- Highest value of negative food residue
- Group A (70%) was used with **mosapride** with low-volume water intake
- Group B (65%) was used with large-volume water intake
- Group C (40%) underwent prolonged fasting before UGI endoscopy.

Efficacy of a New Preparation Regimen with Mosapride and Low Volume of Water Intake for Endoscopy Preparation in Postgastrectomy Patients

Journal of
Gastrointestin
al Disorders
and Liver
Function.
2017. Vol 3.
Issue 1: 89-93

Table 2: Relationship between preparation methods and food residue.

	Group A (n = 40)	Group B (n = 40)	Group C (n = 55)	p-value	Post hoc analysis
Food residue score					
mean±SD	0.35±0.58	0.50±0.75	0.87±0.84	0.002	A<B(p=0.686) B<C(p=0.075) C>A(p=0.002)
Grade 0	28(70.0)	26(65.0)	22(40.0)	0.022*	
Grade 1	10(25.0)	8(20.0)	19(34.5)		
Grade 2	2(5.0)	6(15.0)	13(23.6)		
Grade 3	0(0.0)	0(0.0)	1(1.8)		
Food residue					
Negative	28(70.0)	26(65.0)	22(40.0)	0.006*	
Positive	12(30.0)	14(35.0)	33(60.0)		

A>B>C →

← A<B<C

Values shown are number (%) unless otherwise indicated.

Group A: Mosapride with low-volume water-intake group

Group B: Large-volume water-intake group

Conclusions: A combination of mosapride with low-volume water intake could be a more appropriate preparation for endoscopy in patients who have undergone subtotal gastrectomy.

GI

P1426 - IMPACT OF ENHANCED RECOVERY AFTER SURGERY (ERAS) PROGRAM IN PATIENTS WHO UNDERWENT COLORECTAL CANCER SURGERY: A RANDOMIZED CONTROLLED TRIAL STUDY

Visarat Palitnonkiat MD, Chairat Supsamutchai MD, Jakrapan Jirasiritham MD, **Chumpon Wilasrusmee MD**
Department of Surgery, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand 10400



Background: ERAS programs in colorectal surgery are widespread and broadly accepted. Successful implementation of these programs are challenging based on their compliance due to existing barriers. ERAS failure was recently reported to mostly related to a prolonged postoperative length-of-stay (poLOS). The objectives of this study are to compare between ERAS and traditional programs in the poLOS, postoperative complications, and rate of revisit within 30 days after discharge. Subgroup analysis was performed to determine the association between mechanical bowel preparation (MBP) and outcomes of surgery.

Methods: In general, ERAS guidelines for elective colon surgery include 21 items. In ERAS program, patients were had nothing per oral (NPO) after 3 AM and no mechanical bowel preparation. In traditional program, patients were fasted after midnight and received mechanical bowel preparation with polyethylene glycol 2 liters or sodium phosphate 90 milliliters. Both groups were received prophylaxis antibiotic 30 min before incision. Intraoperative period, traditional group were received general anesthesia while ERAS group were received combined general and epidural at T7-8 level anesthesia. Postoperative period, patients in the traditional group were had NPO for 3-5 days and control pain with strong opioid. In ERAS group, the patients were started with liquid diet within twenty-four hours, patients were encouraged to ambulate within six hours after surgery and control pain with epidural anesthesia and paracetamol. Weak opioid was given when pain score was greater than or equal to four.

Results: Forty-six patients were included, 22 and 24 patients were randomized to traditional and ERAS groups, respectively. Average age was 62 ± 8.17 and 63 ± 9.05 years old in traditional and ERAS groups, respectively. The days in traditional and ERAS groups, respectively ($p < 0.0001$). Postoperative complication 4.17% ($p = 1.000$), and 4.55 vs 0% ($p = 0.478$) in traditional and ERAS group, respectively (2-4 vs 2 (2-2), ($p = 0.170$) and 3 (3-4) vs 2 (1-2), ($p < 0.001$) in traditional and ERAS significant difference in outcomes of surgery in patients who had MBP.

Conclusion: Despite the proven benefits of ERAS programs in colorectal surgery, compliance of protocol. There was no difference between MBP vs no preparation.



GI-vascular outcome



GI Dysfunction: Ileus

VAS

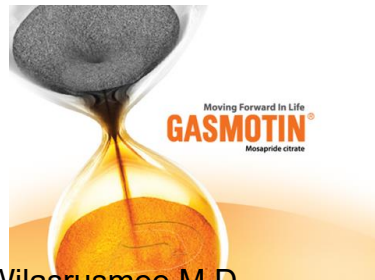


GI-Vascular axis : Chumpon Wilasrusmee M.D.

Slide 24/100

ERAS: role of prokinetic drugs

- The key elements of ERAS protocols
- Systemic prokinetic pharmacologic treatment for postoperative adynamic ileus following abdominal surgery in adults
- Effects are either inconsistent across outcomes, or trials are too small and often of poor methodological quality
- Intravenous lidocaine and neostigmine might show a potential effect, but more evidence on clinically relevant and outcomes is needed.



GI-Vascular axis : Chumpon Wilasrusmee M.D.



Cochrane Database of Systematic Reviews 2008, Slide 25/100

Mosapride: 29 Clinical Trials, Page 1 of 3




1

2


3


»

 Hide Studies Not Open or Pending

1

The Effect of Mosapride Citrate on Gastrointestinal Motility After Gastrectomy: Prospective, Double Blind Placebo-controlled Study

 Condition(s): Stomach Cancer


 Last Updated: July 30, 2020

 Not yet recruiting

2

Effect of Mosapride on Postoperative Ileus in Patients Undergoing Colorectal Surgery

 Condition(s): Postoperative Ileus


 Last Updated: December 17, 2015

 Unknown status

3

Efficacy Study of a Low Volume of Water Intake and Mosapride for Endoscopy in Patients With Subtotal Gastrectomy

 Condition(s): Foreign Body Left During Endoscopic Examination

 Last Updated: October 5, 2011

 Completed

4

Mouth Dissolving Mosapride Tables Enhance Post Cesarean Gut Recovery

 Condition(s): Prevention of Postoperative Ileus

 Last Updated: August 14, 2018

 Completed

5

Effect of Mosapride on Gut Transit in Patients With Chronic Constipation or Constipated Irritable Bowel Syndrome and Healthy Subjects

 Condition(s): Constipated Irritable Bowel Syndrome; Chronic Constipation; Healthy


 Last Updated: May 5, 2015


 Unknown status

6

Effects and Mechanism of Mosapride Citrate on Diabetic Gastroparesis

 Condition(s): Diabetic Gastroparesis


 Last Updated: October 15, 2014

 Unknown status

7

A Pilot Study to Determine the Relative Bioavailability of Mosapride 5mg From Two Candidate Formulations of GR107719B Relative to One 5mg Tablet of Reference Mosapride Citrate (GASMOTIN™) in Healthy Adult Human Subjects Under Fasting Conditions

 Condition(s): Gastritis

 Last Updated: May 15, 2017

 Completed

40 Pts

Effect of Mosapride on Recovery of Intestinal Motility After Hand-Assisted Laparoscopic Colectomy for Carcinoma

Kazuhiro Narita, M.D., Ph.D. • Akira Tsunoda, M.D., Ph.D. • Koji Takenaka, M.D. • Makoto Watanabe, M.D., Ph.D. • Kentaro Nakao, M.D., Ph.D. • Mitsuo Kusano, M.D., Ph.D.

Department of General & Gastroenterological Surgery, Showa University School of Medicine, Tokyo, Japan

RESULTS: Postoperative time to first bowel movement was significantly shorter in the mosapride group than in the control group (48.5 vs. 69.3 hours, $P=0.0149$). The time to maximal gastric emptying rate as determined by the breath test was significantly shorter in the mosapride group than in the control group at the 48-hour time point (27.9 vs. 35.3 minutes, $P=0.0294$). Postoperative hospital stay was shorter in patients receiving mosapride than in controls (6.7 vs. 8.4 days, $P=0.0398$). No adverse effects were observed with mosapride.

CONCLUSIONS: Gastric emptying was improved by mosapride. The results suggested that the period of postoperative ileus following hand-assisted laparoscopic colectomy can be shortened by treatment with mosapride.

Mosapride Reduces Prolonged Postoperative Ileus after Open Colorectal Surgery in the Setting of Enhanced Recovery after Surgery (ERAS): A Matched Case-Control Study

Varut Lohsiriwat, M.D., Ph.D.

Department of Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand.

- 84 pt mosapride, 168 control
- Mosapride group had a 1.5% higher compliance rate of ERAS protocol.
- Control, higher prolonged postoperative ileus (17.3% vs 7.1%; $p=0.029$) and prolonged postoperative ileus requiring nasogastric tube decompression (8.9% vs 3.6%; $p=0.19$)
- Overall complication, clinical intestinal transit and length of hospitalization not different

O OPTION

WHERE IS SURGEON ?

Post right hemicolectomy

- 5 days after right hemicolectomy from perforated CA cecum
- Nausea and vomiting
- Treatment???



Arterial disease

- Claudication is a marker of extensive atherosclerosis
 - 5% of claudication will need intervention because of disabling extremity pain
 - 5-year mortality of a patient with claudication approaches 30%
- **GUT marker???**

Open access Original research

BMJ Open Constipation and risk of cardiovascular diseases: a Danish population-based matched cohort study

Sundbøll J, et al. BMJ Open 2020;10:e037080.

- 83 239 pt with constipation matched to 832 384 without
- Constipation strongly associated with venous thromboembolism (HR 2.04)
- Myocardial infarction (1.24)
- Ischaemic stroke (1.50), haemorrhagic stroke (1.46)
- Peripheral artery disease (1.34)
- Atrial fibrillation or atrial flutter (1.27)
- Heart failure (1.52)
- Strongest during the first year after the constipation diagnosis and strengthened with an increased number of laxative prescriptions

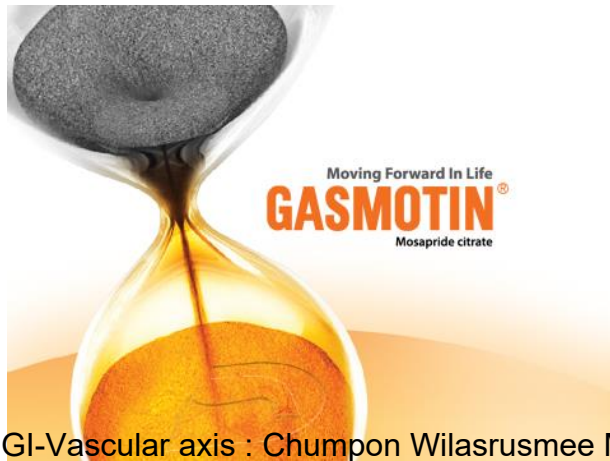
Venous diseases

IVC filter and Vagotomy

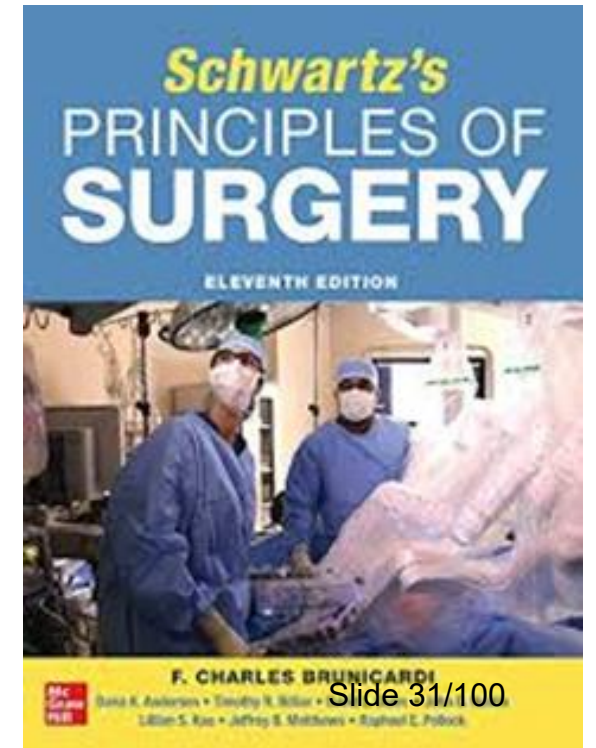
- Thrombolytic therapy, surgical thrombectomy, and placement of **inferior vena cava filters** are adjunctive treatments that may be indicated in patients with extensive and complicated venous thromboembolism
- Deep vein thrombosis (DVT) and pulmonary embolism are well-recognized complications after major abdominal and orthopedic procedures
 - The risk is further increased in patients with malignancy and a history of venous thromboembolism
- Lifelong acid suppression should be considered in any patient admitted to a hospital because of peptic ulcer disease
- If possible, gastric resection for peptic ulcer is avoided in the **asthenic or high-risk patient**

- **The mainstay of treatment for chronic venous insufficiency is compression therapy**
- Sclerotherapy, perforator vein ligation, and venous reconstruction or ablative techniques may be indicated in patients in whom conservative management fails or as a means to decrease ulcer recurrence

PPI vs DOAC Prokinetic vs Venotropic drugs



GI-Vascular axis : Chumpon Wilasrusmee M.D.





PERSISTENT FUNCTIONAL DYSPEPSIA

Chronic pancreatic disease



Table 2. Demographic Characteristics and Pancreatic Exocrine Function in the Patients with Treatment-resistant Dyspeptic Symptoms.

	Postprandial fullness (n=42)	Epigastric pain (n=56)	Overlap (n=16)
Background			
Mean age (years)	60.7±13.4	51.4±16.9	58.4±13.8
sex (male)	50.0	25.0	37.5
Mean BMI (kg/m ²)	21.1±3.6	20.6±4.0	21.0±3.5
Serum amylase (IU/L)	100.3±65.6	90.7±28.4	82.9±31.4
Urinary amylase (IU/L)	409.8±384.8	339.4±244.8	290.9±120.9
Alcoholic consumption (%)	35.1	13.5	43.8
Current smoking (%)	24.3	15.4	37.5
<i>H.pylori</i> infection:negative/positive/unknown (%)	59.5/16.7/23.8	53.6/17.9/28.6	25.0/18.8/56.3
Pancreatic exocrine function			
BT-PABA (%)	65.4±10.5	62.9±16.2	60.5±10.4
Prevalence of pancreatic exocrine dysfunction (%)	71.4	69.6	81.3

Series of 213 patients in tertiary care, with EPS:
Morphological and functional findings suggestive of chronic pancreatitis found in 21%

Fujikawa et al., 2017
Lariño-Noia et al., 2018

GI-HBP axis



Digestion 1987;37:14–17
(DOI:10.1159/000199547)

Pancreatic Disease in Dyspepsia
G. Vasodanakis, Chirupon Wilasrusmee M.D.

[J Clin Biochem Nutr.](#) 2017 Sep; 61(2): 140–145.
Published online 2017 Aug 18. doi: [10.3164/jcbrn.17-41](#)

PMCID: PMC5612821
PMID: [28955132](#)

Epigastric pain syndrome accompanying pancreatic enzyme abnormalities was overlapped with early chronic pancreatitis using endosonography

Gallstones

GI-HBP axis

- Most common type of gallstones are cholesterol stones
- Proper exposure of the hepatocystic (Calot's) triangle to obtain the critical view of safety are keys to avoiding these injuries
- Cholelithiasis is also the major risk factor for the development of gallbladder cancer

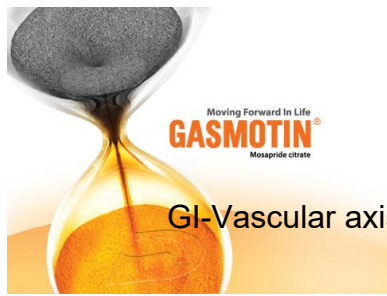
Cholecystectomy and Clinical Presentations of Gastroparesis

March 2013 · [Digestive Diseases and Sciences](#)

DOI: [10.1007/s10620-013-2596-y](#)

Source · [PubMed](#)

- Gastroparetic patients prospectively enrolled (391)
- 142 (36 %) prior cholecystectomy
- Postcholecystectomy gastroparesis worse quality of life
- Postcholecystectomy gastroparesis: more severe upper abdominal pain and retching and less severe constipation



Effectiveness of prokinetic agents against diseases external to the GI tract

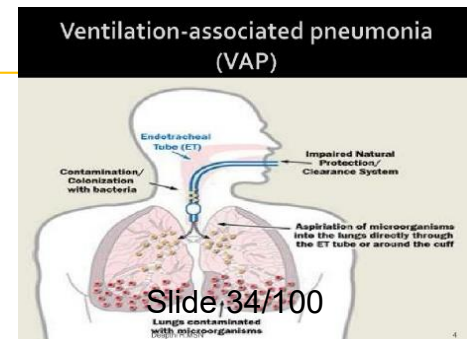
J Gastroenterol Hepatol 2009 Apr;24(4):537-4



- Prokinetic agents are effective **not only for disease of GI tract**
- May effective: bronchial asthma, chronic cough, hiccup, spontaneous bacterial peritonitis, **cholelithiasis**, diabetes mellitus, acute migraine, Parkinson's disease, anorexia nervosa, Tourette's disorder, urologic sequelae of spinal cord injury and of radical hysterectomy for cervical cancer, laryngeal dysfunction
- **Prevention of aspiration pneumonia** during anesthesia, and in tube-fed patients

Improvement of gallbladder motility

GI-Vascular axis : Chumpon Wilasrusmee M.D.



Slide 34/100

UEG 2020: Mistake



- Functional Dyspepsia

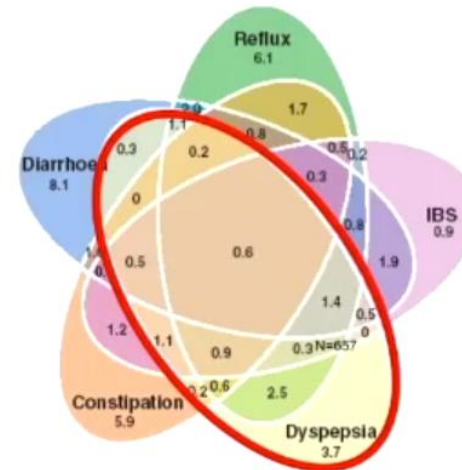
- Dyspepsia associated with many other functional symptoms and disorders brain-gut interaction



Table 1 | Clinical features of organic versus functional gastrointestinal disease

Clinical features	Organic disease — cause evident; secondary to defined aetiology	Functional disease — cause not evident; probable primary aetiology
Age	Older (>45 years)	Younger (<45 years)
Sex	Equal incidence in men and women	More common in women than in men (in white populations)
Timing of onset	Defined onset	Poorly defined onset
Symptoms	Specific symptoms; pain rarely prominent	Multiple, diffuse symptoms; pain often prominent
Comorbidities	No other issues	Other functional syndromes common
Psychiatric comorbidities or psychological stress	Equivalent to or slightly elevated compared with in the general population	Much more common than in the general population
Intolerances	No history of intolerance to medications or diet	Self-reported intolerance to medications and diet
Therapeutic response	Response to specific therapy	Poor response to therapy
Diagnosis and outcome	Doctor and patient usually satisfied with diagnosis and outcome	Doctor and patients often unsatisfied or frustrated with diagnosis and outcome owing to nonspecific symptoms and lack of specific and effective treatments

Fox et al. Nature Reviews Gastro Hepatol 2018



Locke III et al. Gastroenterol Clin North Am 25(1): 1-19.



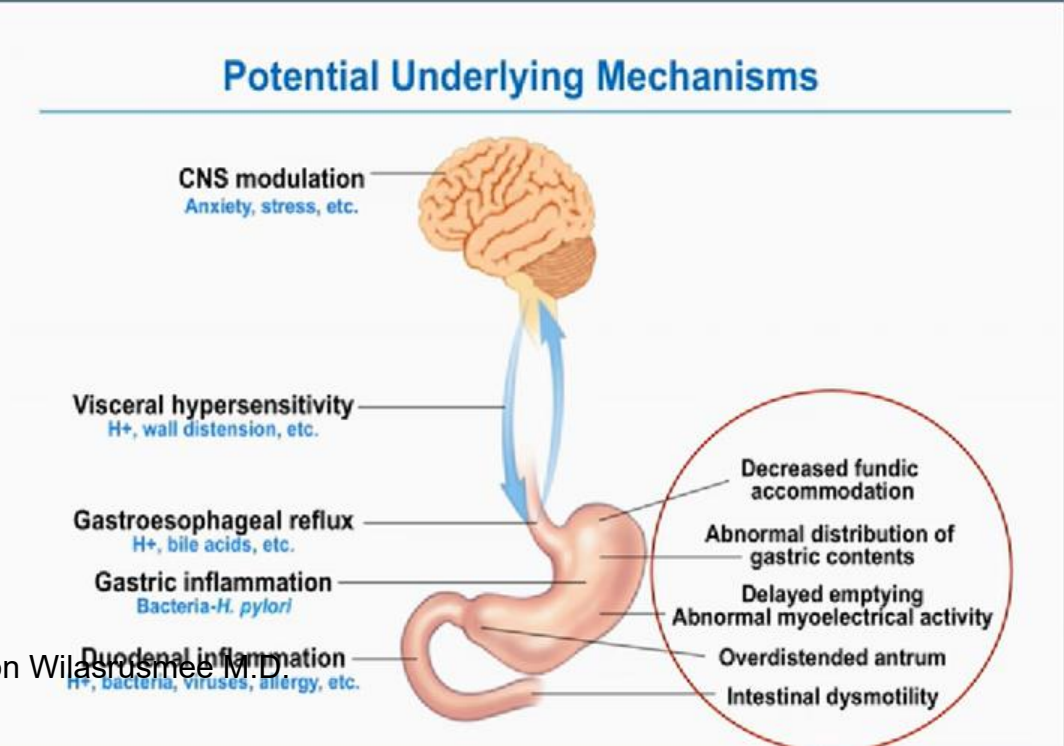
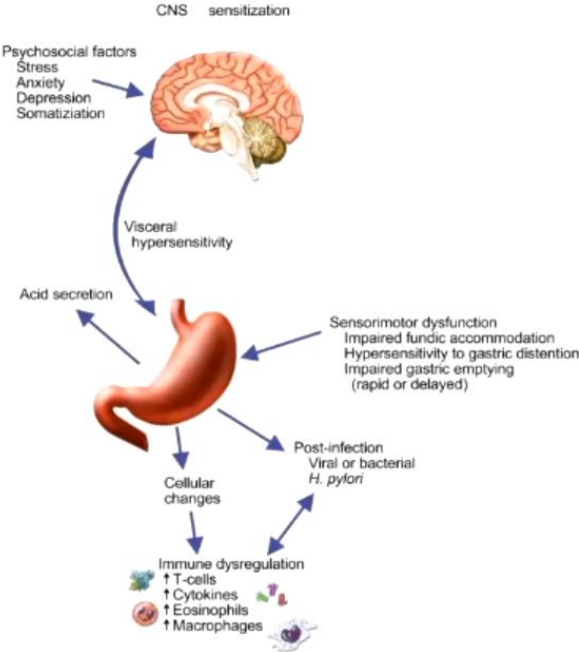
Functional Dyspepsia

Pathophysiology

- Causes of FD not completely understood;
- Several mechanisms appear to be involved

Aetiology

- Primary Disorder of Motility and Function (PDS)
- Gastrointestinal infection «post-infectious», «H. pylori associated» (PDS)
- Presence of psychiatric disease and psychosocial stress factors (PDS, EPS)
- Associated with «pain prone personality», other pain syndromes (EPS)



Can you differentiate a typical gastro-esophageal reflux from dyspepsia?



Can you differentiate PDS from EPS?



What is your first-line treatment for EPS?



What is your first-line treatment for PDS?



GI-Vascular axis : Chumpon Wilasrusmee M.D.



Slide 38/100

Gastroduodenal (upper GI) symptoms

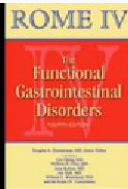
dyspepsia and dyspepsia subgroups ... an easy story ?



- M, 41 yrs , overweight , good appetite
- Epigastric pain
- Not necessarily associated with meals
- Often during fasting or at night
- Some heartburn / regurgitation



- F, 36 yrs , significant weightloss
- Asymptomatic during fasting
- Inability to finish a normal meal
- Postprandial fullness
- Occasional nausea/vomiting



Gastroduodenal symptoms

Diagnostic criteria for functional dyspepsia

EPS

Epigastric pain symptoms

- Epigastric pain
- Epigastric burning
- ≥ 1 day / week (last 3 mos)
- w/wo meal association

PDS

Postprandial distress symptoms

- Postprandial fullness
- Early satiation
- ≥ 3 days / wk (last 3 mos)
- \pm reflux, pain, nausea, ...

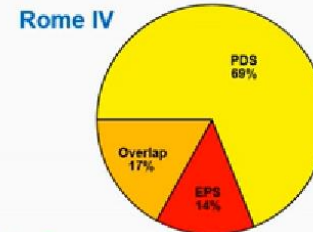
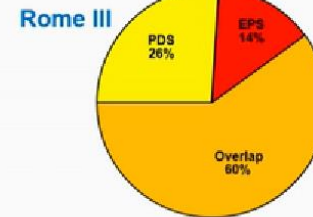
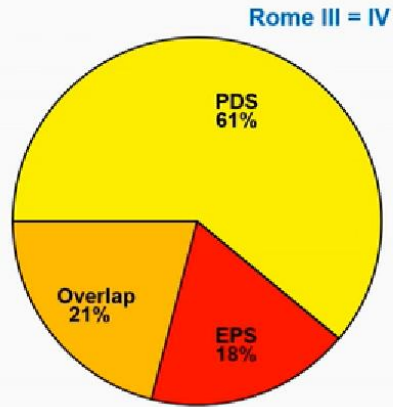
bothersome (sever enough to affect daily activities),
with symptom onset at least 6 months before diagnosis



Prevalence of dyspepsia subgroups

N= 3*2100 subjects in the general population

Study in secondary care: 103 patients

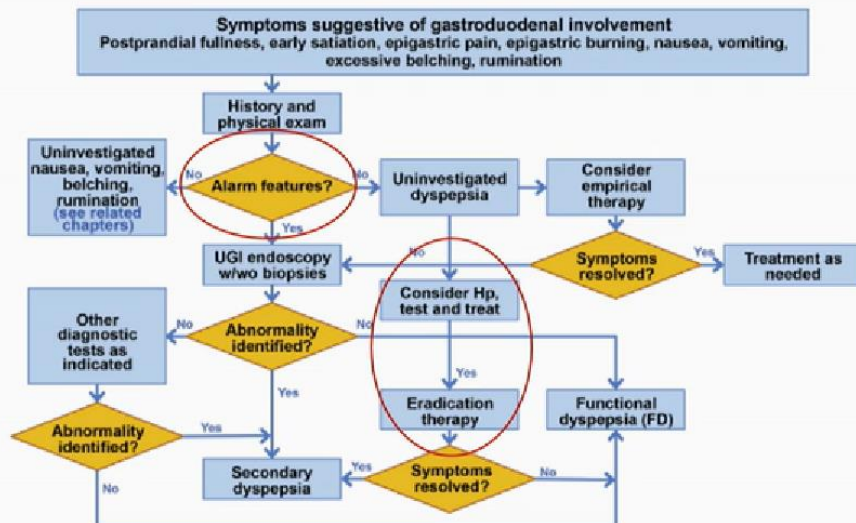


Aziz et al. Lancet Gastro Hep 2018

courtesy of Jan Tack

Carbone et al. DDW 2017

Management of patients with symptoms attributable to gastroduodenal disorders



GI-Vascular axis : Chumpon Wilasrusmee M.D.



Vienna, Austria
October 20 – 24, 2018



Vienna, Austria
October 20 – 24, 2018

- **Functional Dyspepsia**

Investigation and Diagnosis



Mistake 1 Failure to perform endoscopy in presence of alarm features

Exclude “Organic” Pathology if Alarm Symptom present

- Prospective study (n=1852) Alarm symptoms associated with 5–10% risk of serious disease, compared with 1–2% risk if no alarm symptoms present.^{2,10}
- Alarm symptoms identified 92% of malignancy or peptic ulcer (both <5%)
 - Bleed / High Risk Features (OR 2.4)
 - Dysphagia (OR 3.0 CI:1.8 – 5.2)
 - Weight loss (OR 2.6 CI:1.5 – 4.4)
 - New Onset Age >50 years (OR 9.5 CI:3.8 – 23.9)
 - *Dyspepsia, Abdominal Pain* (OR 0.1 CI: 0.01 – 0.75)
- Patients with new onset Dyspepsia >50 years or weight loss require endoscopy



- **Functional Dyspepsia**
Investigation and Diagnosis

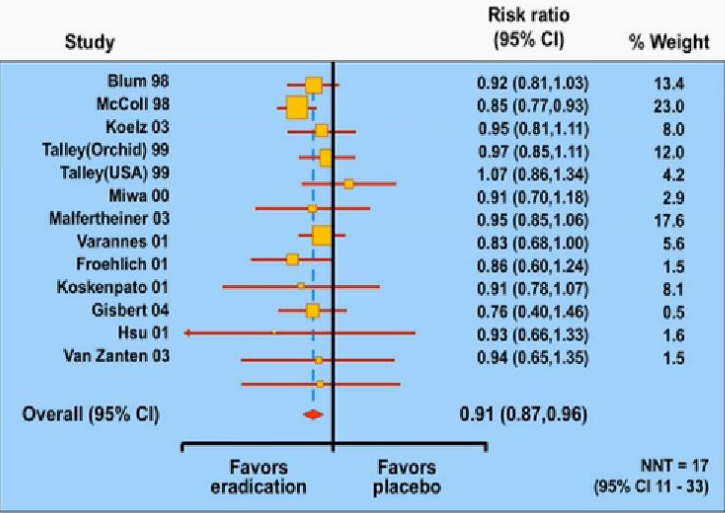


- **Mistake 2 Over investigation**

- Dyspeptic symptoms are not alarm symptoms!
- Patients with dyspepsia and epigastric pain are at very low risk.
 - Standard laboratory tests (full blood count, clinical chemistry for renal and liver function, calcium, thyroid function and coeliac serology)
 - Helicobacter pylori (Serology, ¹³C-Urea breath test)
 - *Abdominal ultrasound; diagnostic yield is low unless clinical suspicion*
 - *Computed tomography not routine, to avoid unnecessary exposure to radiation*
- **Endoscopy appropriate in those with persistent and therapy resistant symptoms**
- Do not repeat investigations without indication. Reassurance from repeated tests in patients with functional GI disease minimal, as is impact on treatment.¹⁶



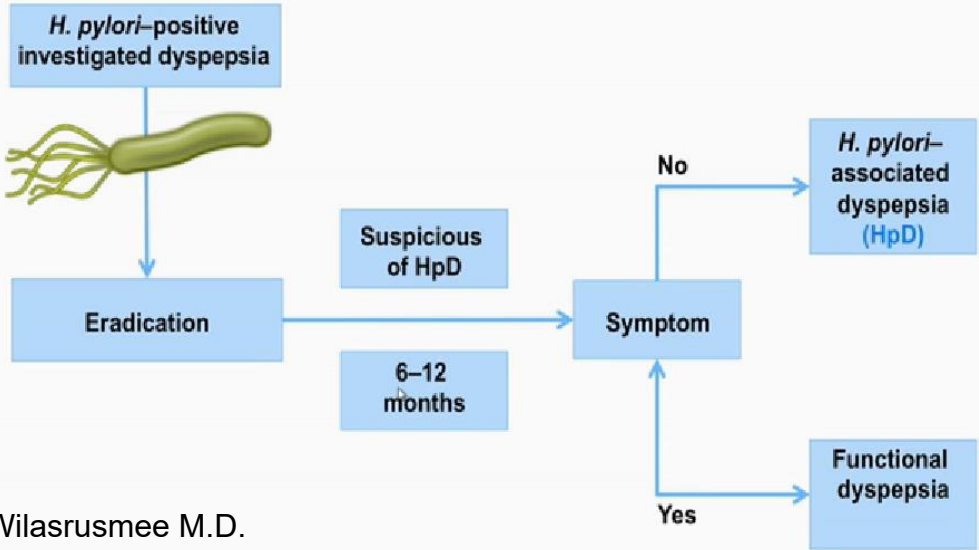
H. pylori Eradication and Resolution of Dyspepsia



Talley NJ, Vakil NB and Moayyedi P. Gastroenterology 2005;129:1756-80.

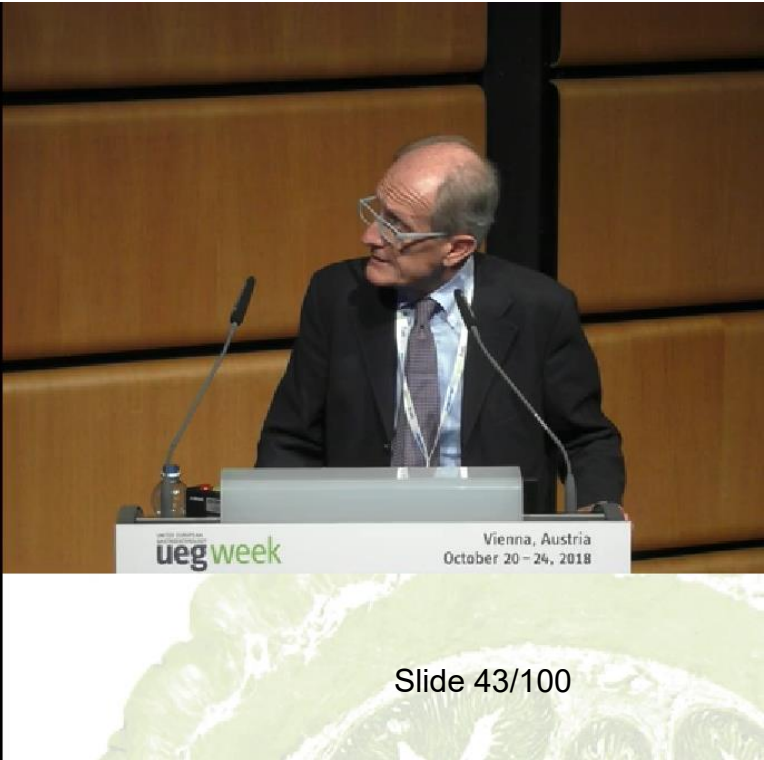


Differentiating H. pylori-Associated Dyspepsia from FD



GI-Vascular axis : Chumpon Wilasrusmee M.D.

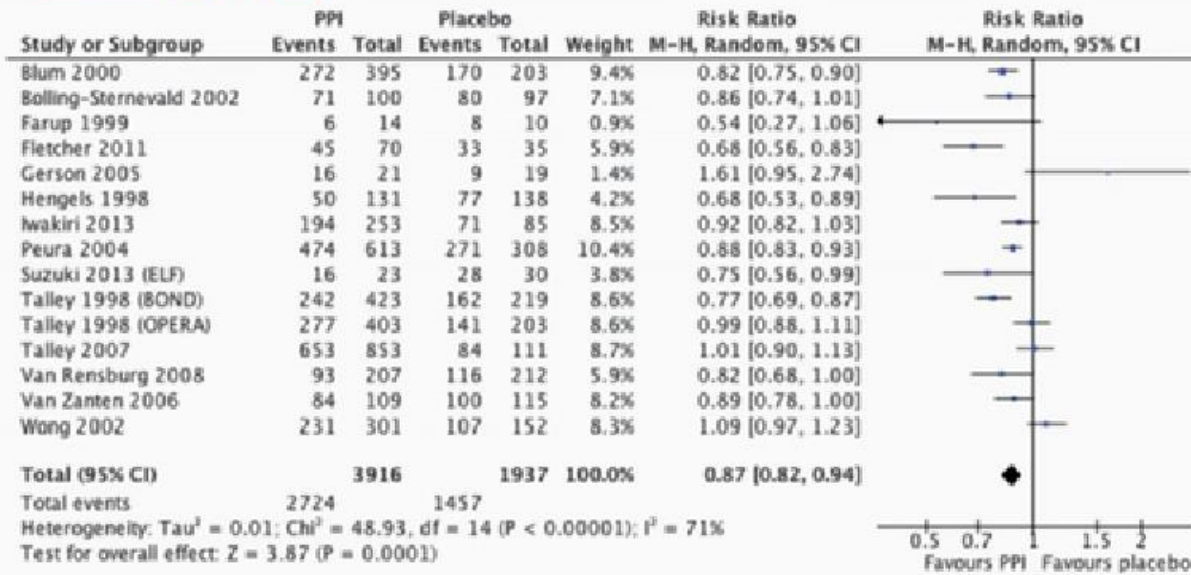
Stanghellini V. et al. Gastroenterology 2016;150:1380-92.



ACG and CAG Clinical Guideline: Management of Dyspepsia



PPI



PPI treatment of choice for all dyspeptics

dyspepsia defined as predominant pain ≥ 1 month
 \pm other symptoms including heartburn

Moayyedi et al, Am J Gastroenterol 2017;112:988-1013



- **Functional Dyspepsia**
Treatment



Mistake 6 Inappropriate treatment with proton pump inhibitors

Clinical guidelines recommend initial treatment of dyspepsia with a 2-week trial of PPI therapy.^{3,4} Supported by meta-analyses and a Cochrane review.²¹

- Additionally a test and treat approach to H. pylori infection is recommended.²³

Although effective, the absolute benefit of PPIs is modest (~10% > placebo).²⁴

- Unnecessary costs and exposure to side effects (e.g. GI infection)
- Symptoms related to acid rebound can make withdrawal difficult in FD patients.²⁵

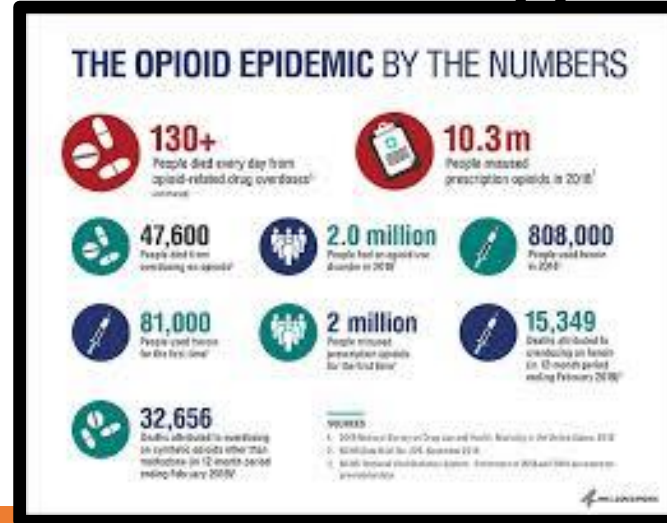
Alginate-based medications (e.g. Gaviscon) are effective for intermittent reflux type symptoms in FD,²² and can facilitate PPI withdrawal.²⁷



Pain management in abdominal surgery.

Langenbecks Arch Surg. 2018 Nov;403(7):791-803

- General shift from open, invasive surgery to MIS
- Pain management strategies changed: **US-guided abdominal wall blocks**
- Pain is **not less or less relevant** in **minimally invasive surgery**



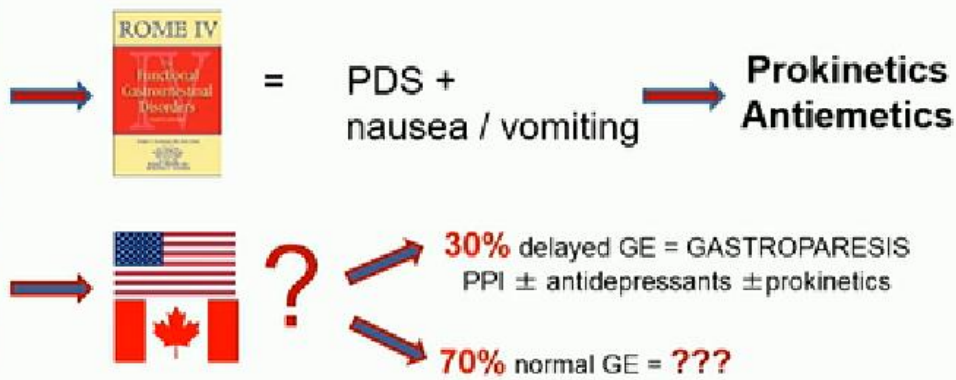
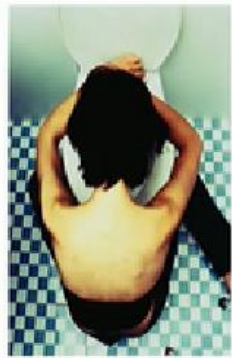
“Weaning a patient off a PPI can be one of the most challenging endeavors in medicine.”

Combating the Opioid Epidemic in Acute General Surgery: Reframing Inpatient Acute Pain Management.

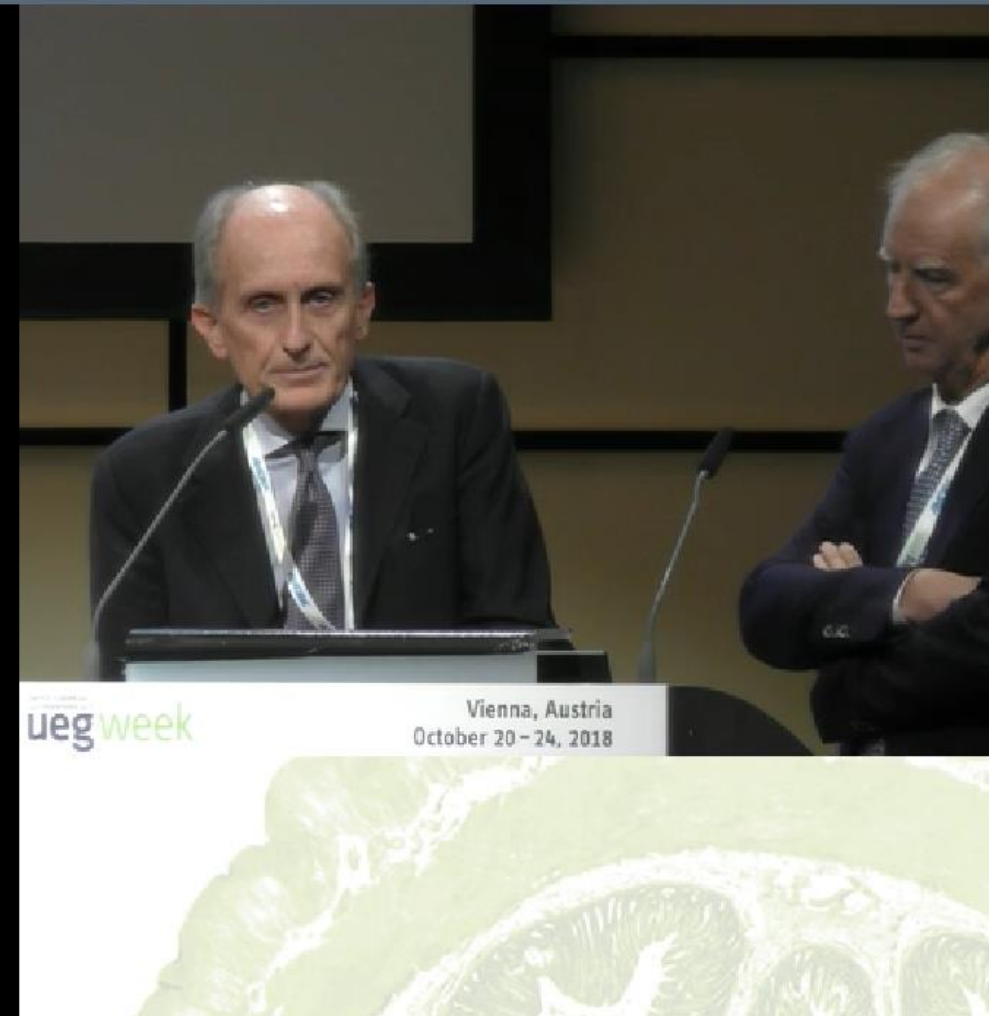
Opioid reduction initiative showed promise in lowering the number of opioids used during inpatient admission without affecting pain scores

Gastroduodenal (upper GI) symptoms

dyspepsia and dyspepsia subgroups ... an easy story ?

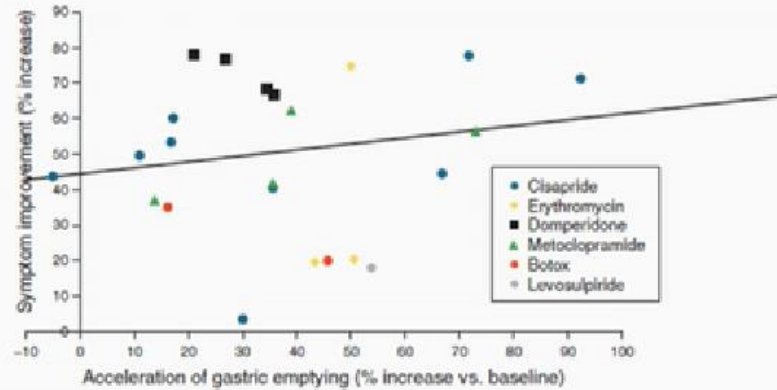


The largest subgroup (normal GE) of the most frequent clinical presentation of dyspepsia (PDS) simply forgotten ???



PDS = Prokinetic first????

Meta-regression analysis on the correlation between GE acceleration and symptom improvement in pts with gastroparesis



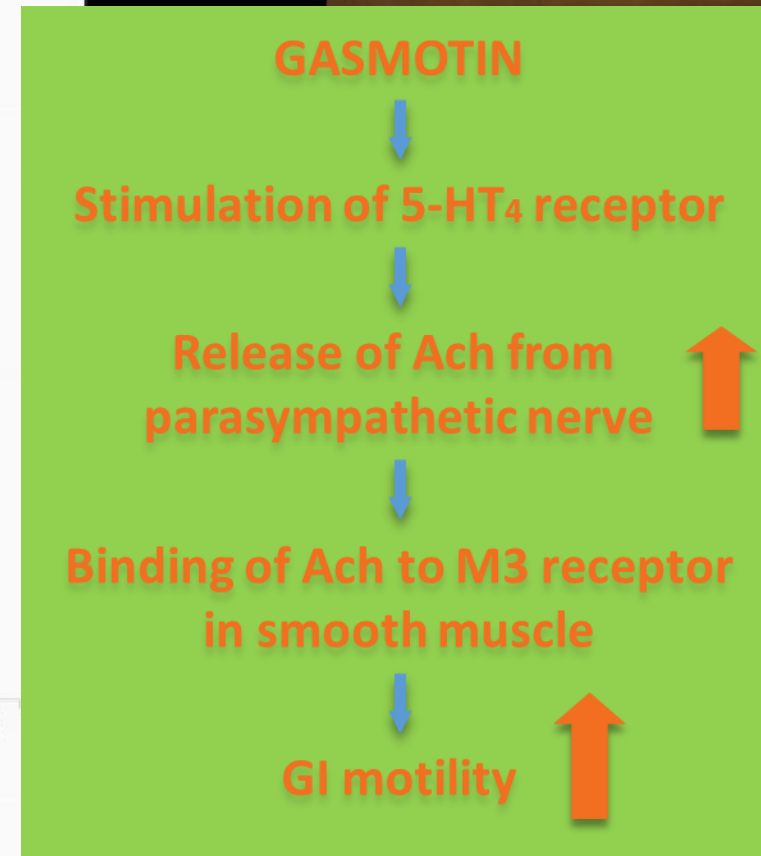
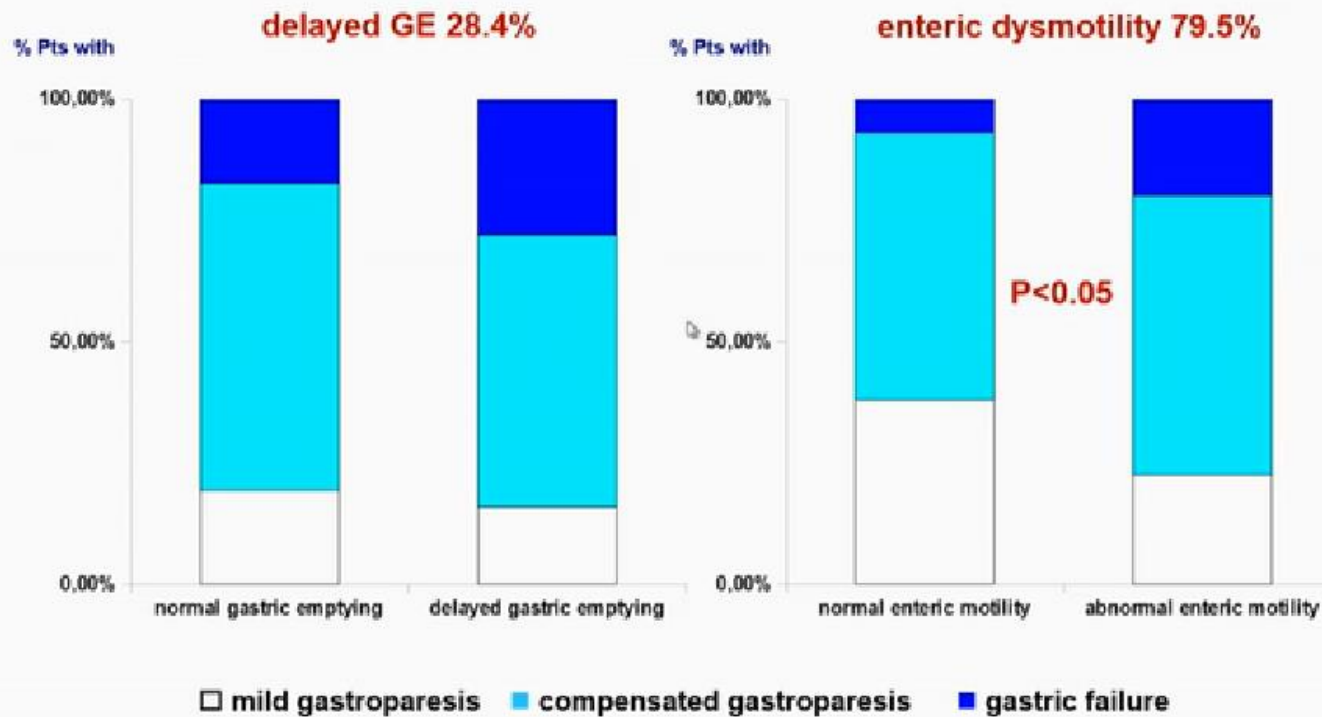
- Prokinetics accelerate GE and improve symptoms in pts with gastroparesis
- No convincing correlation between their effects on GE and symptoms
- No rationale in retesting GE after treatment is initiated
- No rationale for measuring GE in pts with gastroparesis-like symptoms before prescribing a prokinetic

Janssen P et al, Am J Gastroenterol 2013;108:1382-91



No need to investigate before prokinetic treatment

GI motor abnormalities and gastroparesis severity in 88 patients



No diff in gastric emptying but diff in enteric

Pharmacological Classes of Prokinetics

treatment of choice for gastroparesis

Motilin receptor agonists

Erythromycin
Mitemcinal
Alemcinal

Dopamine receptor antagonists

Domperidone
Metoclopramide (nasal spray)
Levosulpiride
Itopride

Cholinesterase inhibitors

Pyridostigmine
Itopride
Acotiamide

5-HT₄ agonists

Cisapride
Tegaserod
Renzapride
Clebopride
Mosapride
Prucalopride
Naropride
Velusetrag

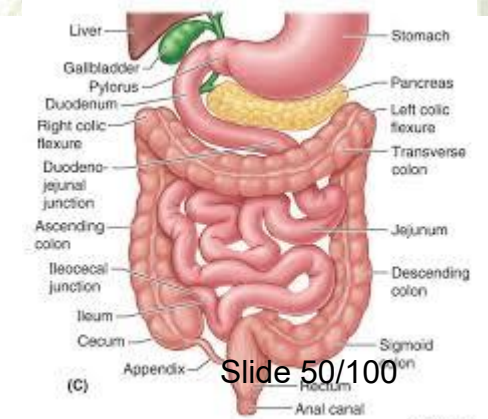
...



Mosapride

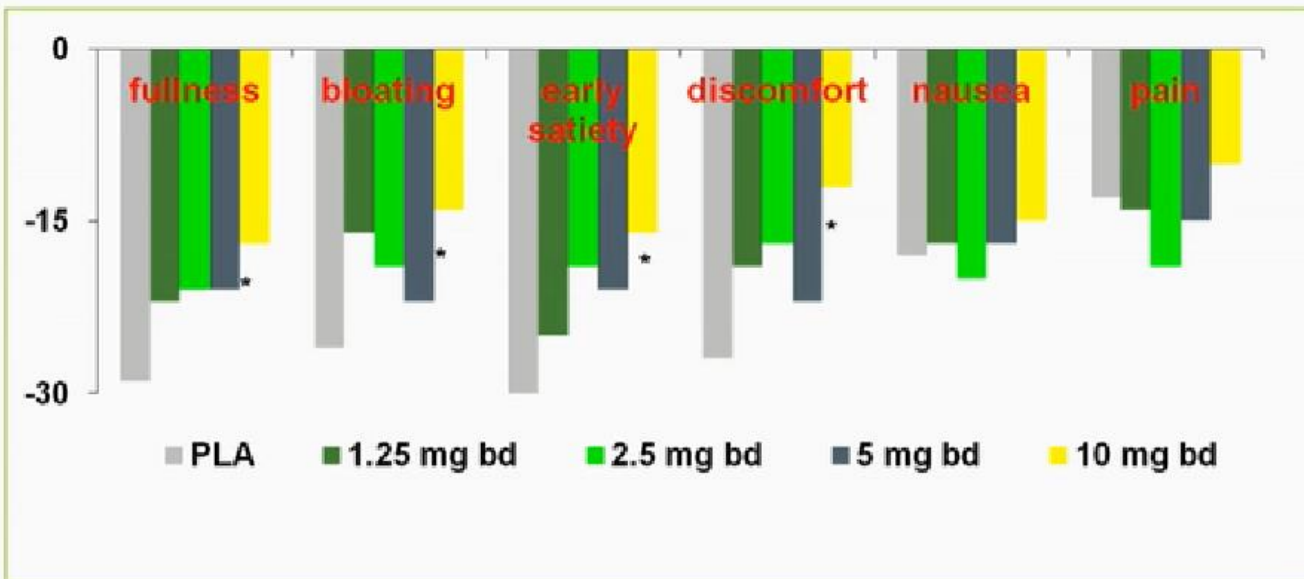


GI-Vascular axis : Chumpon Wilasrusmee M.D.



Slide 50/100

Mean change of symptoms from baseline in 551 dyspeptic patients treated with a motilin agonist (ABT-229)



Despite (unphysiologically) accelerated GE

Talley N, et al, Aliment Pharmacol, Therap 2000;14:1653-61



Motilin, erythromycin not work, empty stomach so rapidly, food move to unprepared duodenum and cause symptom

GI-Vascular axis : Chumpon Wilasrusmee M.D.

Slide 51/100

5HT₄ RECEPTOR AGONIST, A **MOSAPRIDE CITRATE**, FACILITATE BOTH GASTRIC ACCOMMODATION AND EMPTYING IN HEALTHY VOLUNTEERS

Introduction

Several studies have reported facilitated accommodation and significant delayed gastric emptying by 5-HT_{1B/D} receptor agonist, sumatriptan, in healthy subjects. However, little is known regarding the effect of 5-HT₄ receptor agonist, a mosapride citrate, on gastric accommodation and emptying. Accordingly, we examined its effects using gastric scintigraphy.

Method

10 healthy volunteers (male/female 8/2, mean age 30.6±6.8 years) were recruited in this study. The effect of mosapride on gastric accommodation and emptying was investigated by gastric scintigraphy. The experiments were done cross-over fashion; the subjects took the test three times in a random fashion, which are mosapride, sumatriptan and control (no-medicine). Sumatriptan was used as positive control. In the scintigraphic procedure, we used standard meal consisted of curry with rice and radiolabeled 99mTc (37MBq). This meal has an identical carbohydrates, proteins and fat with standard test meal defined by ANMS, SNM. The procedure was done by the fasting state of 4 hours. Scintigraphic camera images are obtained immediately and at 15, 30, 45, 60, 90, 120, 180 min after ingestion with the standing upright position in front of camera. For evaluation of accommodation, region of interest was defined as upper one third of the length of the image of stomach. The geometric mean of gastric count for each time points was calculated.

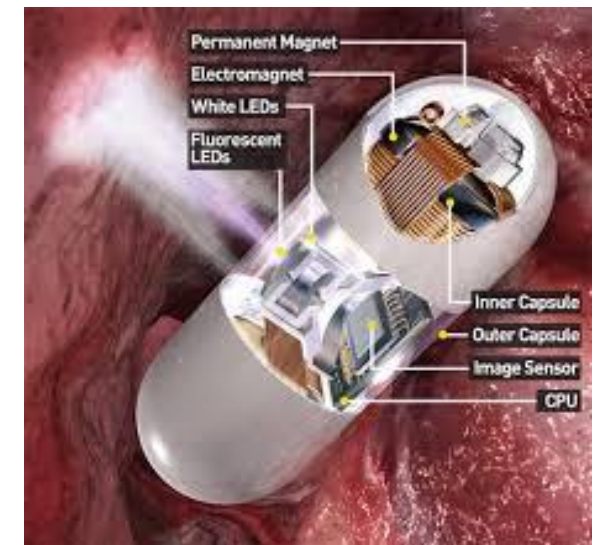
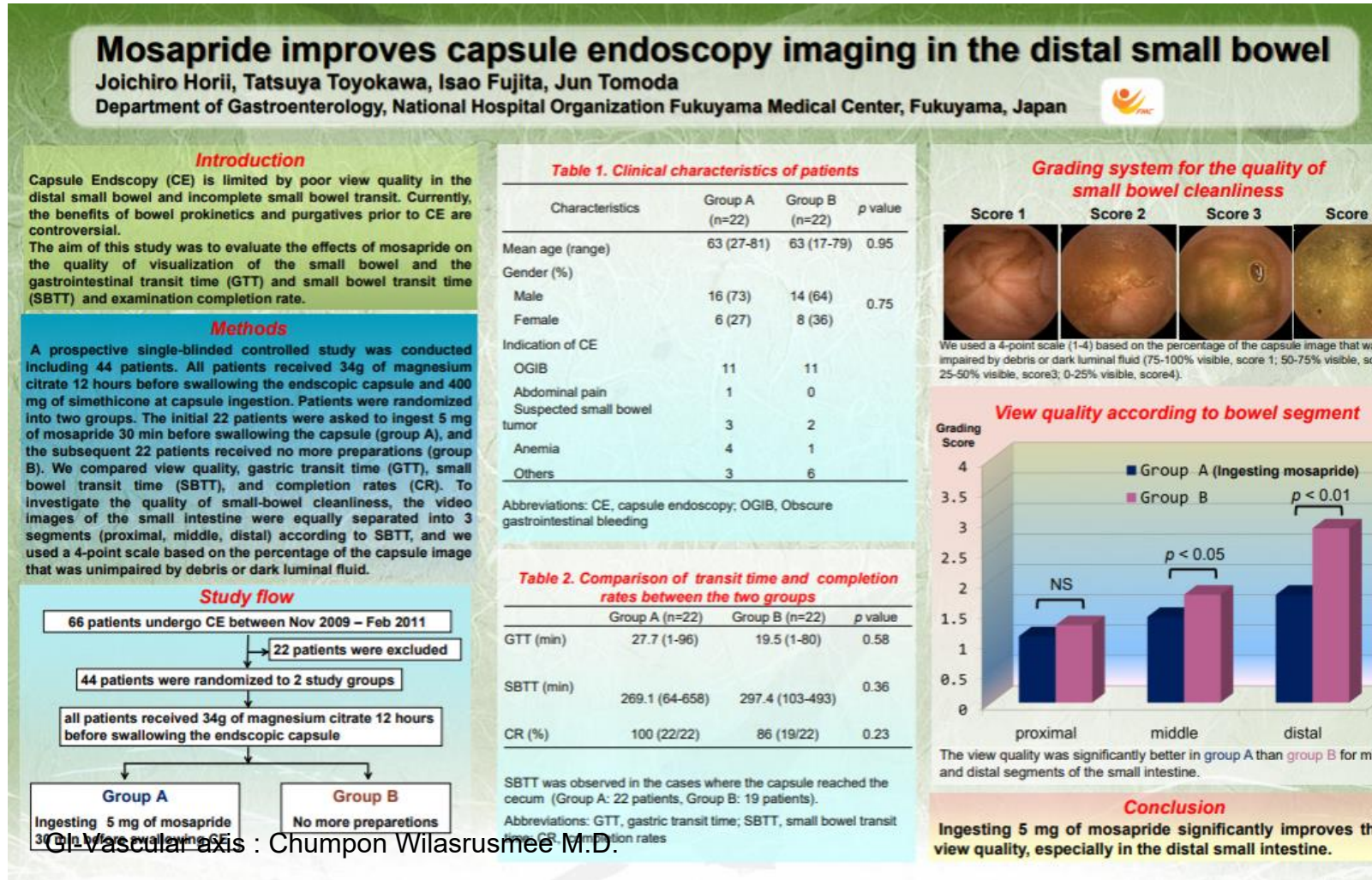
Results

Sumatriptan significantly increased (51.5±16.4%) the gastric accommodation compared to the control (38.4±13.7%) ($p < 0.05$), and significantly delayed the gastric emptying in 60, 90, 120, 150 minutes, respectively ($p < 0.05$). Interestingly, mosapride also increased (48.9±10.7%) the gastric accommodation compared to control (38.5±13.2%) ($p=0.06$), while gastric emptying was significantly accelerated in 150 minutes ($p < 0.05$).

Conclusion

5-HT₄ agonist, mosapride citrate, facilitated both gastric emptying and accommodation, while 5-HT_{1B/D} receptor agonist, sumatriptan, delayed gastric emptying and improved accommodation, suggesting unique mechanistic profile of mosapride citrate in prokinetic activity.

Ingesting 5 mg of mosapride significantly improves the CE view quality, especially in the distal small intestine



Mistake 2



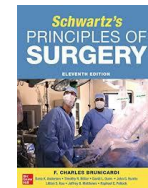
Failing to address the underlying constipation/straining in haemorrhoids/fissure

Mistake 7

Haemorrhoidectomy in middle- aged women with borderline continence

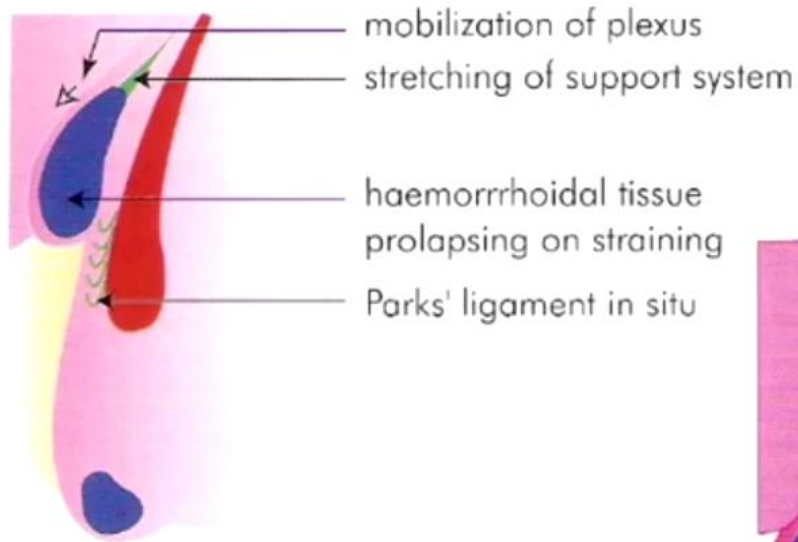


- Hemorrhoids are cushions of submucosal tissue containing venules, arterioles, and smooth muscle fibers
 - They are thought to play a role in maintaining continence



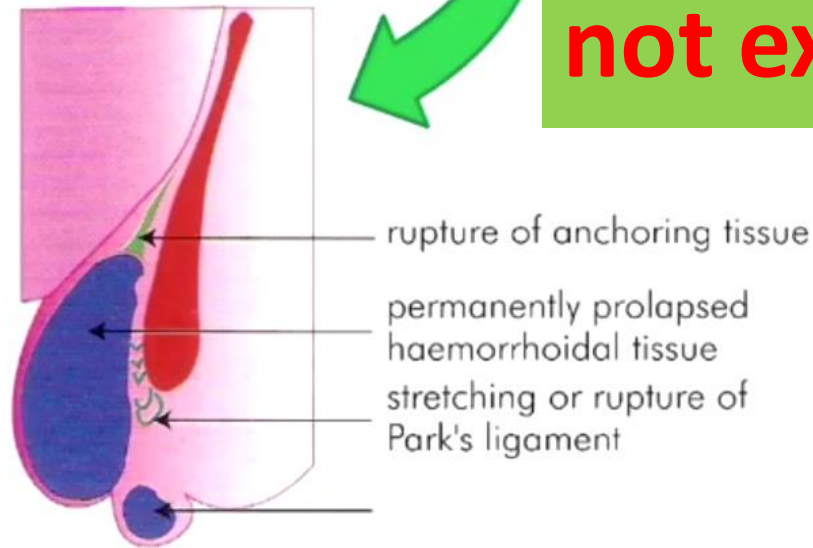
• **Resection is only indicated for refractory symptoms**

haemorrhoids in place but mobile



External hemorrhoids: not exit

This ligament was used as the lateral border of dissection



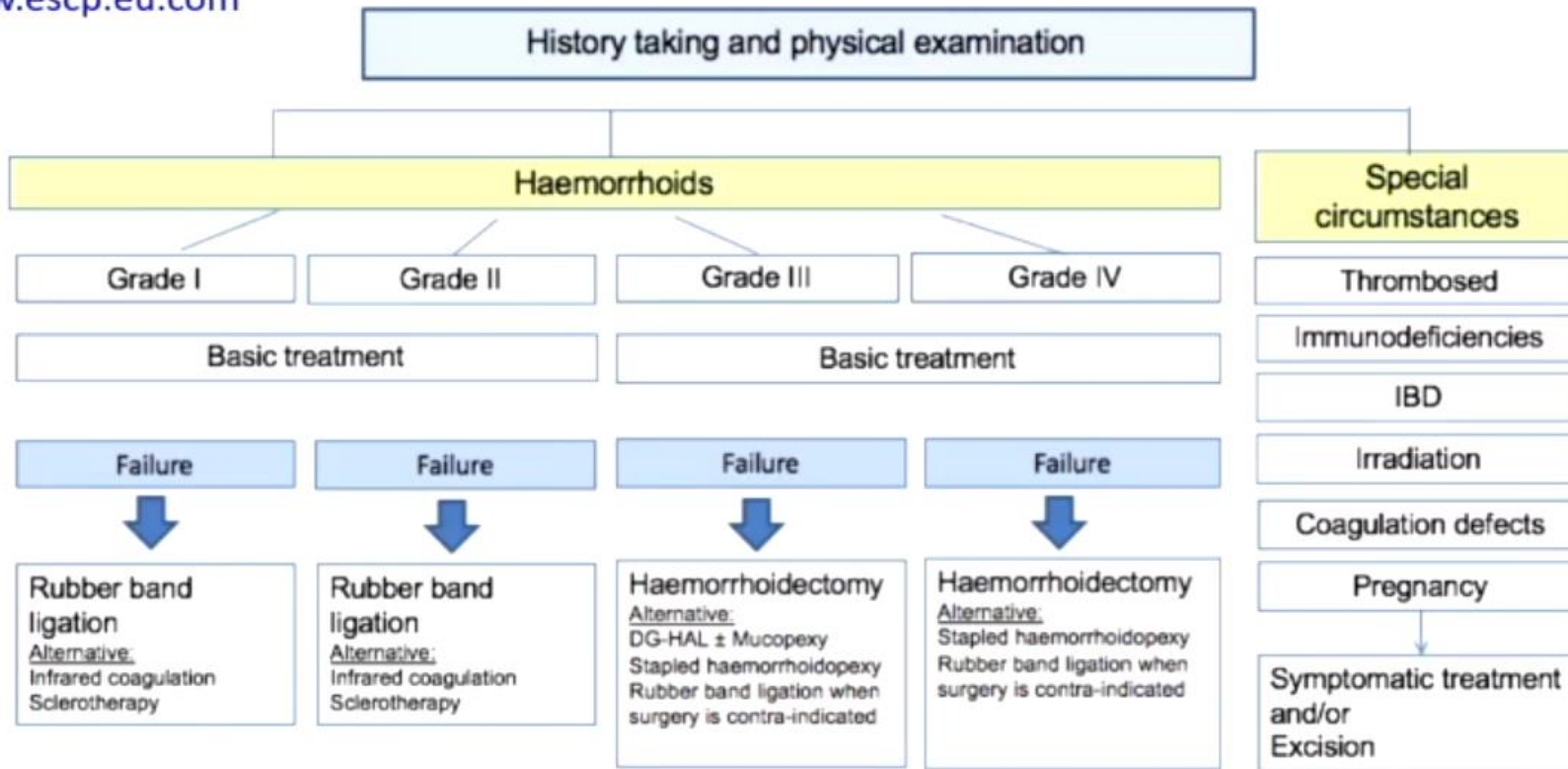
[Ann Med Surg.\(Lond\)](#). 2017 Dec; 24: 31–33.

Published online 2017 Oct 16. doi: [10.1016/j.amsu.2017.10.004](https://doi.org/10.1016/j.amsu.2017.10.004)

PMCID
F

The ligament of Parks as a key anatomical structure for safer hemorrhoidectomy: Anatomic study and a simple surgical note





Comparison of Hemorrhoidal Treatment Modalities

A Meta-Analysis

Helen M. MacRae, M.D., F.R.C.S.C., Robin S. McLeod, M.D., F.R.C.S.C.

From the Department of Surgery and Samuel Lunenfeld Research Unit, Mount Sinai Hospital and University of Toronto, Toronto, Ontario, Canada

GI-Vascular axis : Chumpon Wilasrusmee M.D.

- Treatment response: RBL > SCL
- Complications: no difference
- Pain: RBL > SCL = IRC

- Less need of further therapy with RBL






Chapter 25: Esophagus

Blair A. Jobe; John G. Hunter; David I. Watson

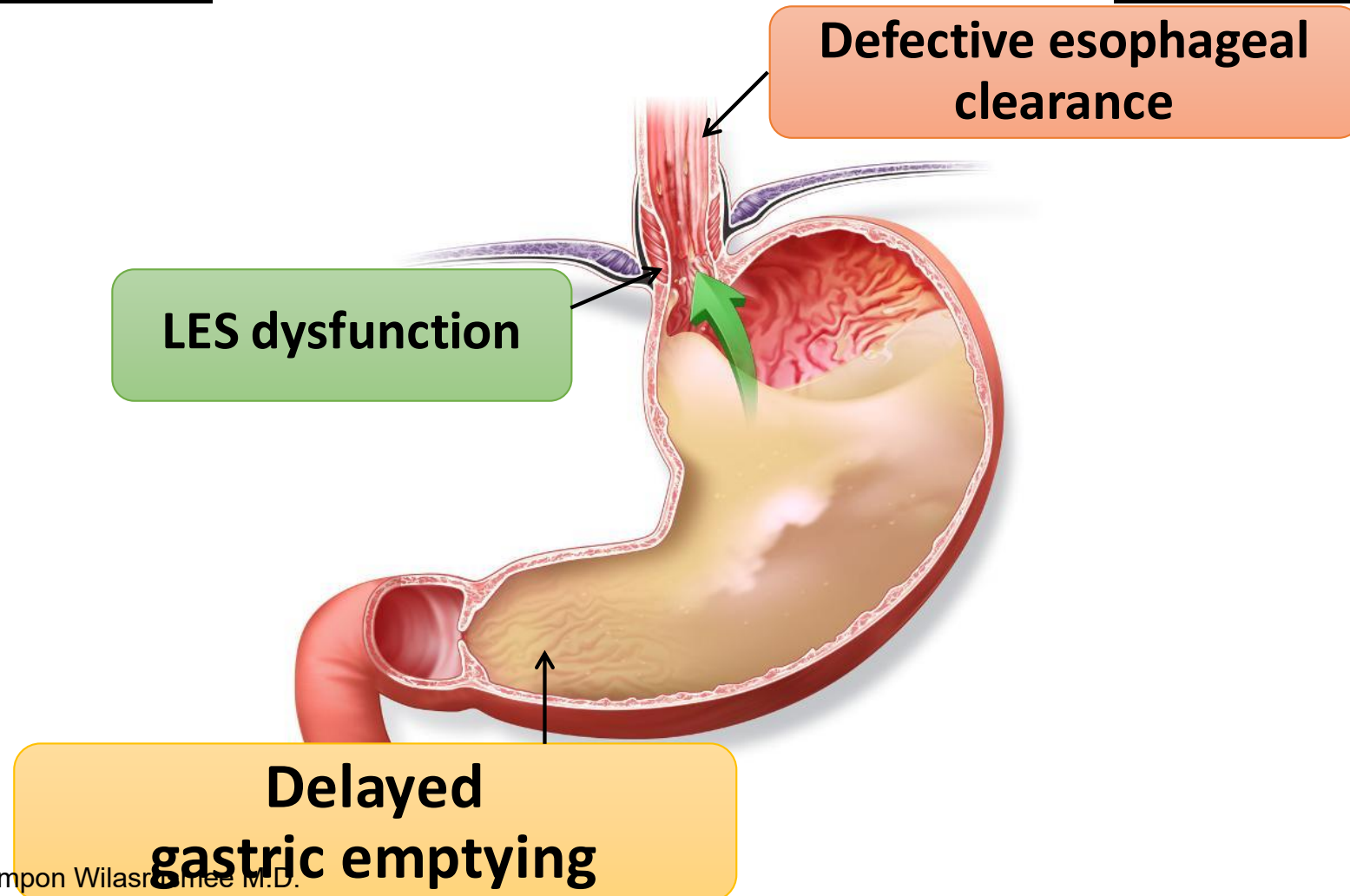
 Sections

 Download Chapter PDF

Key Points

- 1▶ Benign esophageal disease is common and is best evaluated with thorough physiologic testing (high resolution esophageal motility, 24-hour ambulatory pH measurement, and/or esophageal impedance testing) and anatomic testing (esophagoscopy, video esophagography, and/or computed tomography [CT] scanning).
- 2▶ Gastroesophageal reflux disease (GERD) is the most common disease of the gastrointestinal tract for which patients seek medical therapy. When GERD symptoms (heartburn, regurgitation, chest pain, and/or supraesophageal symptoms) are troublesome despite adequately dosed PPI, surgical correction may be indicated.
- 3▶ Barrett's esophagus is the transformation of the distal esophageal epithelium from squamous to a specialized columnar epithelium capable of further neoplastic progression. The detection of Barrett's esophagus on endoscopy and biopsy increases the future risk of cancer by >40x compared to individuals without Barrett's esophagus.
- 4▶ Giant hiatal hernia, otherwise known as paraesophageal hernia, should be repaired when symptomatic or associated with iron deficiency anemia. Laparoscopic hiatal hernia repair with fundoplication is the most common approach to repair.

Causes of Increased exposure of esophagus to gastric refluxate



Effect of Mosapride on esophageal motor activity

Healthy volunteers (n = 8)
Mosapride 40 mg

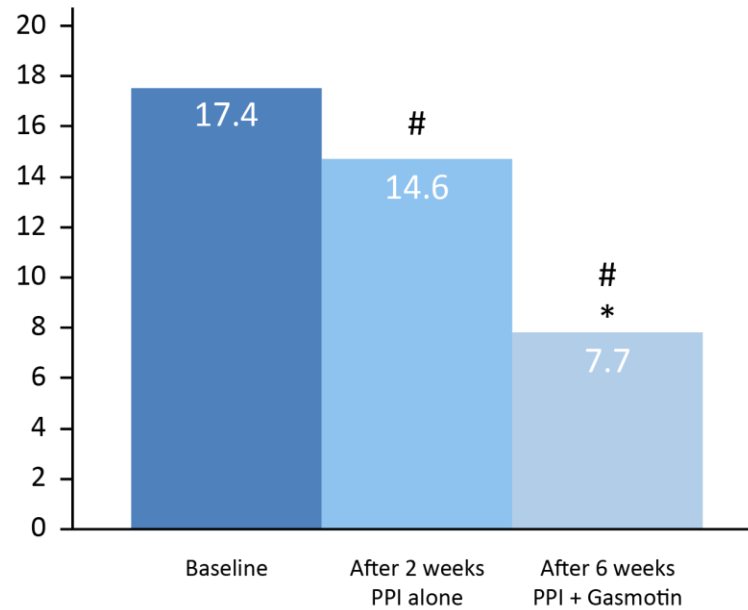
	Before administration	After administration
Maximal peristaltic contraction		
Segment 1 (mm Hg)	77.2 \pm 13.1	83.5 \pm 17.2
Segment 2 (mm Hg)	112.0 \pm 15.2	131.1 \pm 22.3
Segment 3 (mm Hg)	130.0 \pm 18.8	147.7 \pm 23.7*
Resting LES pressure (mmHg)	25.0 \pm 2.5	28.9 \pm 3.7*

Values are expressed as the mean \pm SE

* vs. before administration ($P < 0.05$)

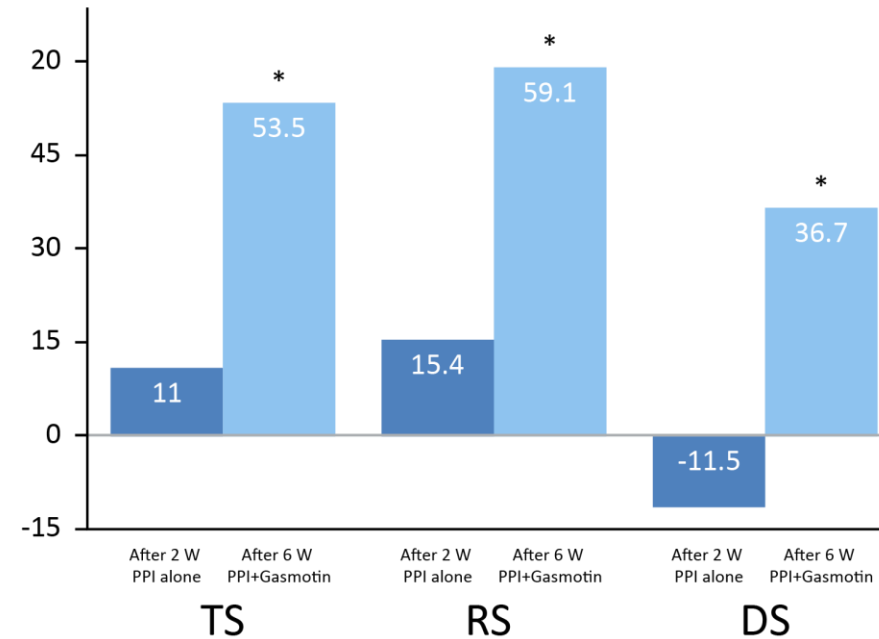
Additional of GASMOTIN[®] for PPI refractory NERD patients

points



vs baseline $p < 0.0001$ / * vs after 2 weeks $p < 0.0001$

Effect of Gasmotin with PPI on PPI refractory
in NERD FSSG-TS

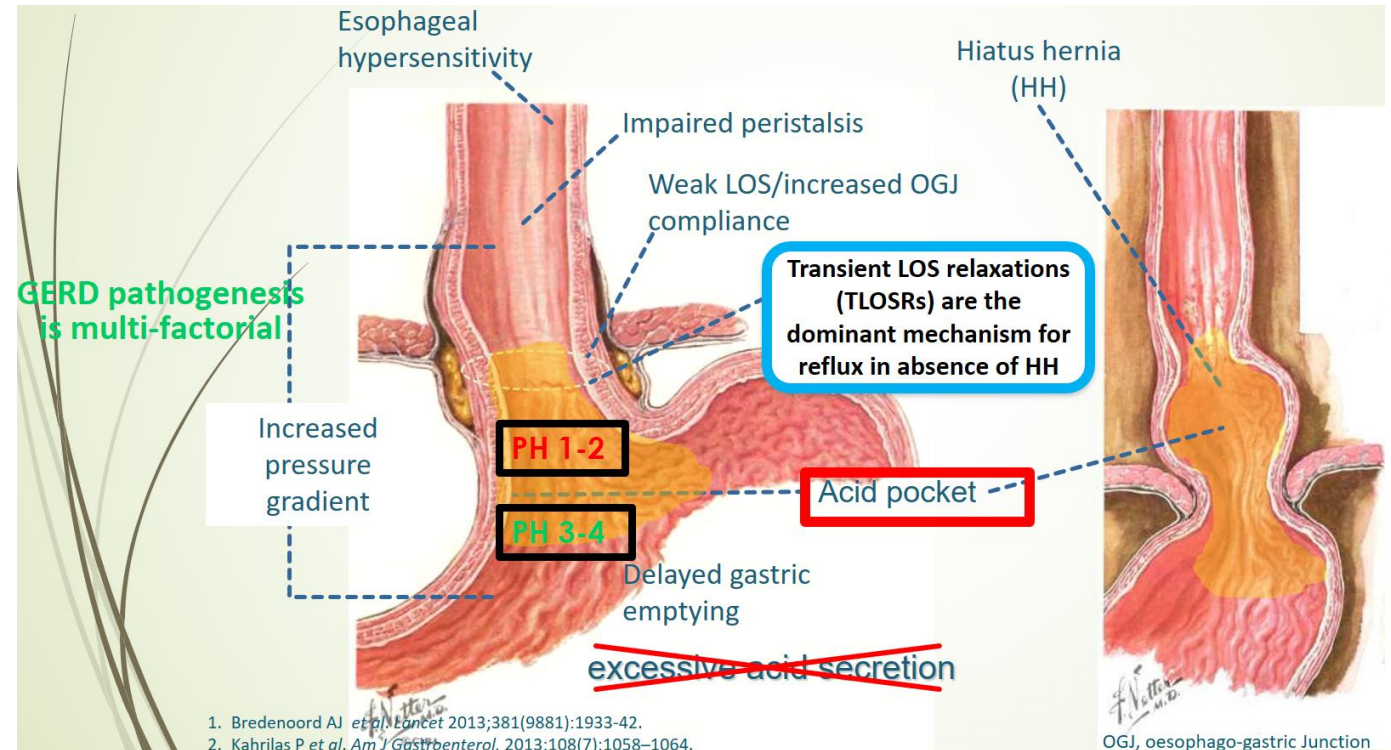


* vs after 2 weeks $p < 0.05$

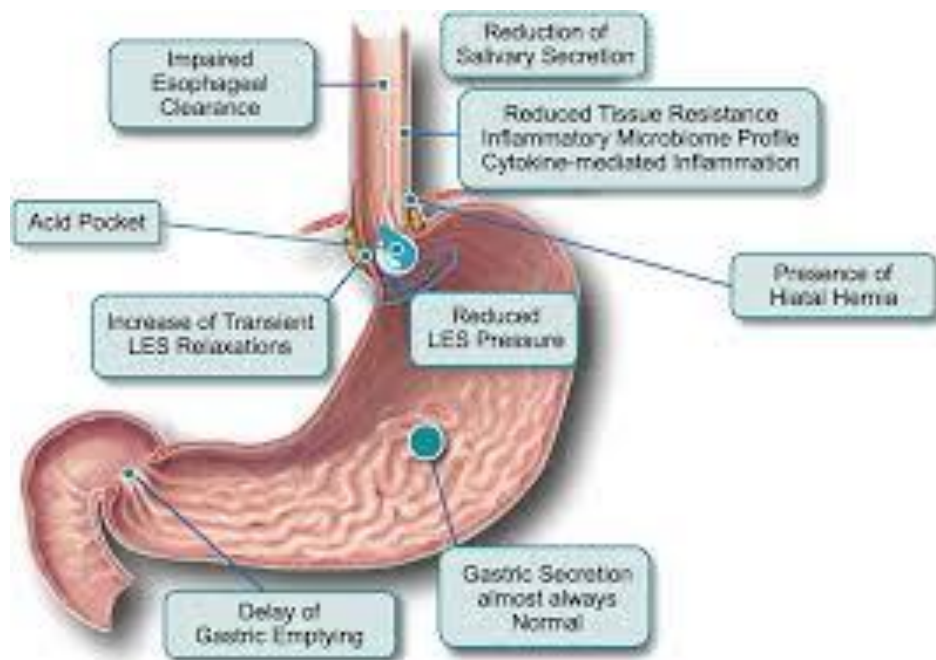
Effect of Gasmotin with PPI on PPI refractory
in NERD FSSG-TS, RS, DS

Mosapride Improves Lower Esophageal Sphincter and Esophageal Body Function in Patients With Minor Disorders of Esophageal Peristalsis

- Mosapride **improved esophageal symptoms** and significantly increased LES respiratory mean pressure and distal contractile integral
- Mosapride enhance LES and esophageal body contraction pressures



Effect of Proton Pump Inhibitor and Mosapride on Acid Pocket in Gastroesophageal Reflux Disease



GI-Vascular axis : Chumpon Wilasrusmee M.D.

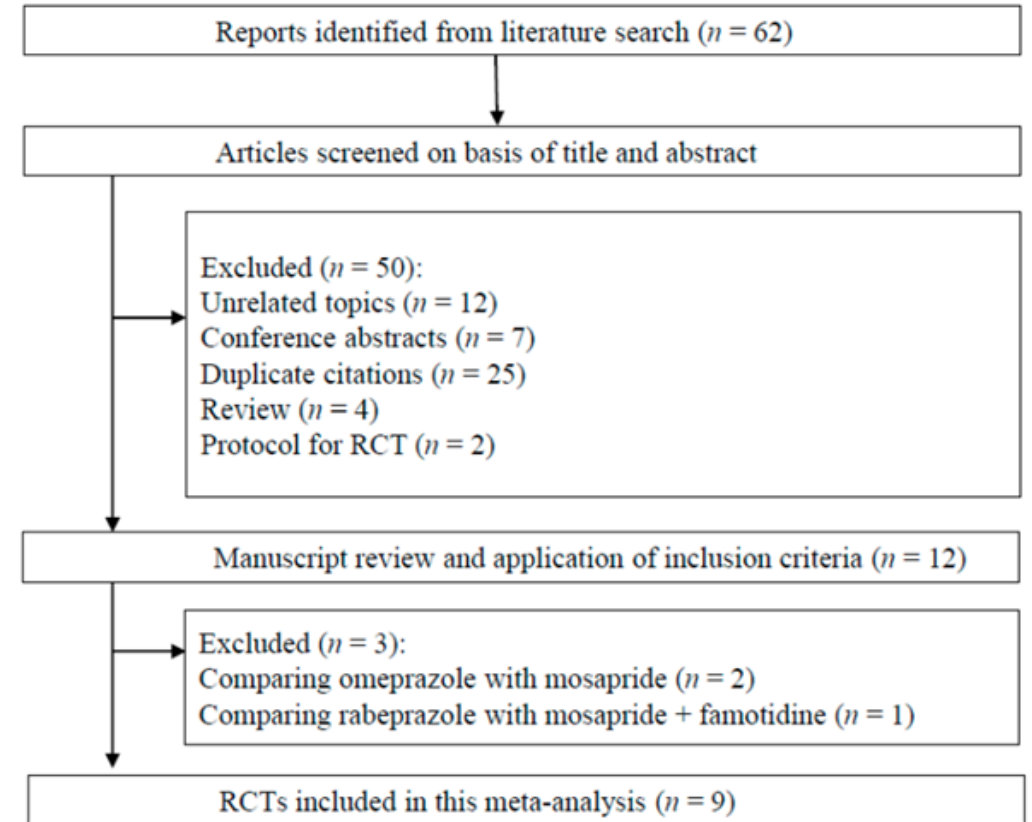
“Weaning a patient off a PPI can be one of the most challenging endeavors in medicine.”



Slide 62/100

Additional Mosapride to Proton Pump Inhibitor for Gastroesophageal Reflux Disease: A Meta-Analysis

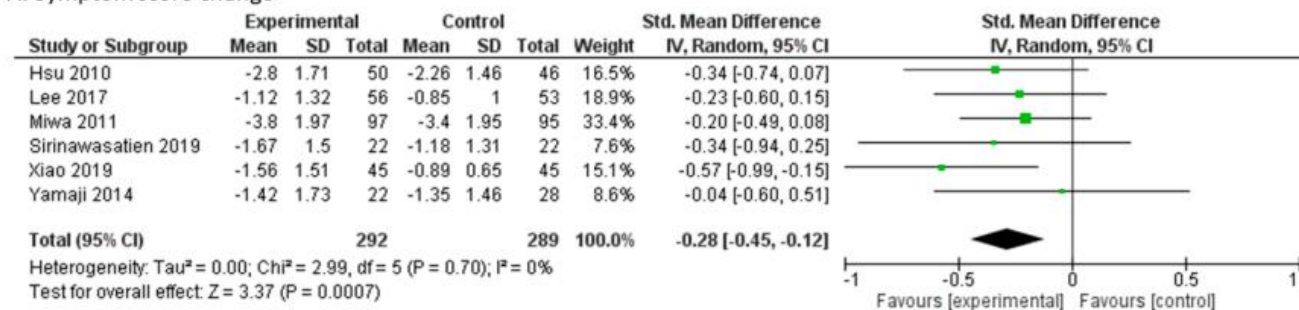
- GERD, the additive effect of mosapride to a proton pump inhibitor (PPI) is still controversial
- Meta-analysis integrated randomized controlled trials (RCTs) in which mosapride combined with a PPI was compared with a PPI alone in GERD treatment



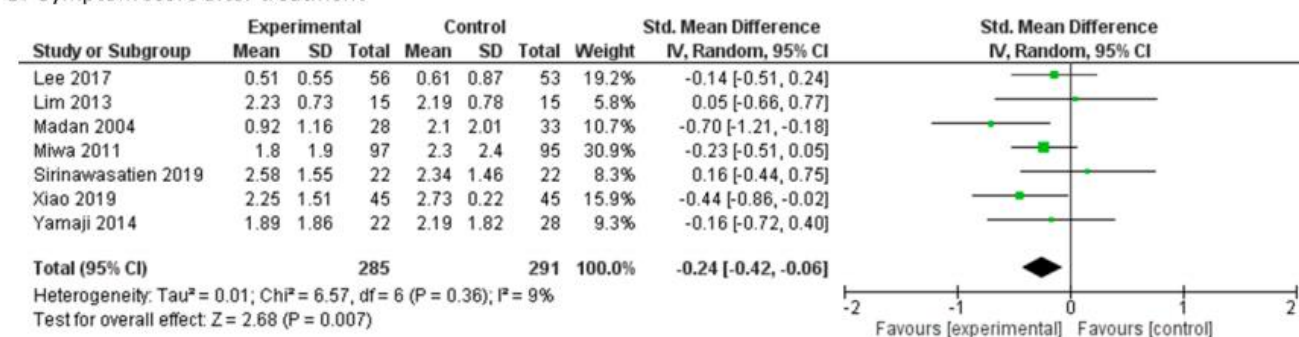
Mosapride: GERD

- 9 RCTs
- Mosapride combined PPI
- **Improvement** symptom score significantly greater without significant heterogeneity (SMD: -0.28, 95% CI: -0.45 to -0.12, $p = 0.0007$)
- Symptom score after treatment **lower than** (SMD: -0.24, 95% CI: -0.42 to -0.06, $p = 0.007$).

A: Symptom score change



B: Symptom score after treatment



Efficacy of the 4 weeks treatment of omeprazole plus mosapride combination therapy compared with that of omeprazole monotherapy in patients with proton pump inhibitor-refractory GERD: RCT

- 44 pt, omeprazole 20 mg once daily plus either mosapride 5 mg or placebo three times daily for 4 weeks
- Most of the study population had non-erosive reflux disease (91.0% in the combination group and 81.8% in the control group)
- Most Los Angeles grade C or D erosive esophagitis
- **No significant differences** in improvement between the groups
- Combining mosapride for four weeks with a standard dose of PPI is not more effective than PPI alone in patients with **PPI-refractory GERD**.

A Double-blind, Randomized, Multicenter Clinical Trial Investigating the Efficacy and Safety of Esomeprazole Single Therapy Versus Mosapride and Esomeprazole Combined Therapy in Patients with Esophageal Reflux Disease.



- 116 ERD pt
- Endoscopic healing rates according to the Los Angeles classification was 32 (66.7%) in the E+M group and 26 (60.5%) in the E only group
- Only at 4 weeks, the total **GERD symptom score changes** relative to the baseline significantly improved in the E+M group
- **Upper abdominal pain and belching** score changes showed significantly improved in the E+M
- Combination with mosapride show tendency for upper abdominal pain, belching, and total GERD symptoms scores to improve more rapidly

Efficacy of three proton-pump inhibitor therapeutic strategies on laryngopharyngeal reflux disease; a prospective randomized double-blind study.



- 100 pt, 3 months: group A, ilaprazole 10 mg, once a day 29; group B, ilaprazole 10 mg, twice a day, n = 27; group C, ilaprazole 10 mg BID plus mosapride citrate 5 mg three times a day (TID), n = 44.
- Improved significantly at 3-month follow-up in all groups
- Add prokinetic resulted in improvements in specific endoscopic findings, such as **vocal cord oedema and diffuse laryngeal oedema**
- And beneficial for overweight or obese patients.

Early effect on intragastric pH of oral administration of rabeprazole with mosapride compared with rabeprazole alone.



- Intragastric pH after rabeprazole 1 h **after mosapride significantly higher** than after rabeprazole alone
- No significant difference between the median 6-h pH after

Effects of Prokinetics on Esophageal Motor Functions



	TLESR	LES pressure	Esophageal peristalsis	Duration of acid exposure	
Domperidone	↔	↑	↔	↔	
Metoclopramide	↔	↑	↔	↔	
Itopride	↓	↔	↔	NA	
Cisapride	↓	↑	↑	↓	QT prolongation
Mosapride	↓	↑	↑	↓	
Prucalopride	↔	↔	↔	↓	

Ruth M, et al. Eur J Gastro Hepatol 2003; Scarpellini E, et al. Aliment Pharmacol Ther 2011
Pehlivanov N. Aliment Pharmacol Ther 2002; Champion MC. Can J Gastroenterol 1997
Chen CL, et al. Scand J Gastroenterol 2013; Fukazawa K, et al. J Gastroenterol 2013
Kessing BF, et al. Neurogastroenterol Motil 2014

Meta-analysis of randomized controlled trials of other pro-kinetics

Gasmotin

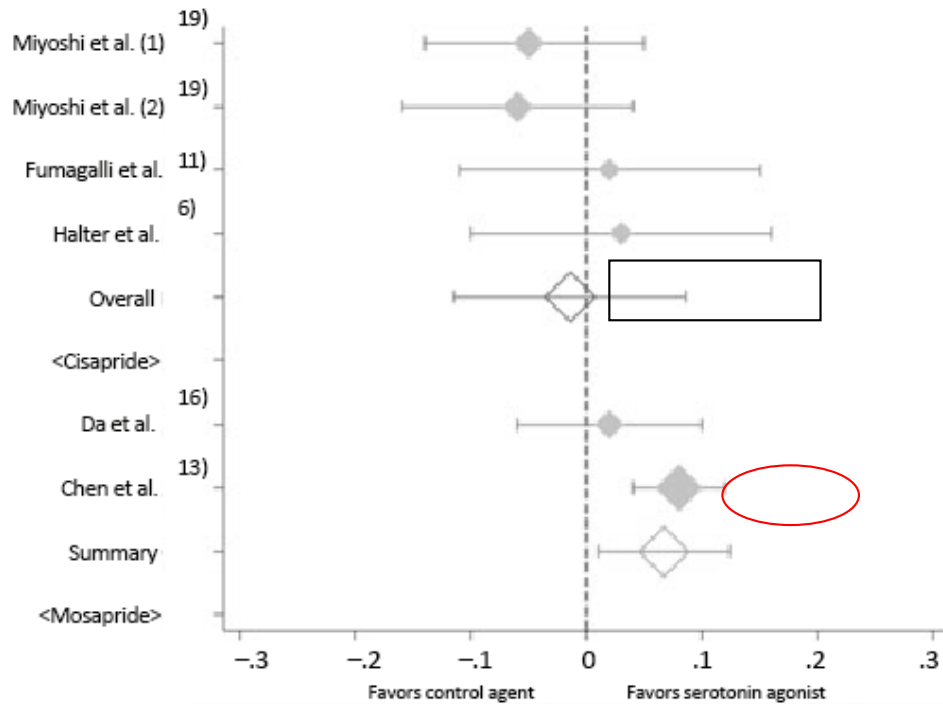


Figure 2 Meta-analysis of randomized controlled trials of cisapride and mosapride. Mosapride has a 6.7% greater probability of producing a response compared with control agents (summary statistic: 0.067; 95% CI: 0.010–0.124; $P = 0.021$), whereas no significant effects are observed with cisapride.

- Mosapride has a 6.7% greater probability of producing a response compared with control agents (summary statistic: 0.067; 95% CI: 0.010–0.124; $p = 0.021$)
- whereas no significant effect is observed with cisapride

EFFECTS OF METOCLOPRAMIDE ON ESOPHAGEAL MOTOR ACTIVITY AND ESOPHAGOGASTRIC JUNCTION COMPLIANCE IN HEALTHY VOLUNTEERS

Bookmark 

PDF

Text

UNITED EUROPEAN
GASTROENTEROLOGY
ueg week
22nd United European Gastroenterology Week
October 18 – 22, 2014 | Vienna, Austria

Effects of metoclopramide on esophageal motor activity and esophagogastric junction compliance in healthy volunteers

Hironobu Mikami¹⁾, Norihisa Ishimura¹⁾, Kousuke Fukazawa²⁾, Masahito Aimi¹⁾, Goichi Uno¹⁾, Yoshikazu Kinoshita¹⁾

1) Second Department of Internal Medicine, Shimane University Faculty of Medicine, Izumo, Japan

2) Department of Gastroenterology and Hepatology, Kasai city hospital, Kasai, Japan.

INTRODUCTION

- Presently, proton pump inhibitors are used as first-line treatment against gastroesophageal reflux disease (GERD). However, approximately 30% of GERD patients fail to respond.
- Esophageal motor activities and compliance of the esophagogastric junction (EGJ) are important for prevention of GER. Measurement of EGJ cross-sectional area (CSA) and distensibility distinguished between GERD patients and healthy volunteers (Figure 1[1]).
- Thus prokinetic agents, such as mosapride and metoclopramide, are often used as second-line therapy for patients with GERD in clinical settings, though their beneficial effects remain unclear.
- We previously showed that high-dose mosapride not only augmented peristaltic contractions and mean resting lower esophageal sphincter (LES) pressure, but also significantly reduced EGJ compliance (Figure 2[2]).
- Although metoclopramide has been reported to increase LES pressure, its effects on EGJ compliance have not been evaluated.
- The aim of this study was to investigate the effects of metoclopramide on esophageal motor activities and EGJ compliance.

METHODS

- Nine healthy male volunteers without abdominal symptoms were enrolled.
- Peristaltic esophageal contractions and LES pressure were measured using high resolution esophageal manometry (ManoScan360™, Sierra Scientific Instruments).
- EGJ compliance was evaluated with an endoluminal functional lumen-imaging probe (EndoFLIP®, Cropton Ltd).
- After obtaining baseline values for esophageal motor activities and EGJ compliance, metoclopramide (10mg) was intravenously administered, then all measurements were repeated at 15 minutes after administration in each subject.
- Esophageal motor activity was evaluated by determining maximum peristaltic contraction pressure in each segment, and resting LES pressure.
- EGJ compliance was determined based on diameter (Dmin), cross-sectional area (CSA), and distensibility index (DI; mm²/mmHg) values, as previously reported.

RESULTS

Figure 3. Esophageal motor activity

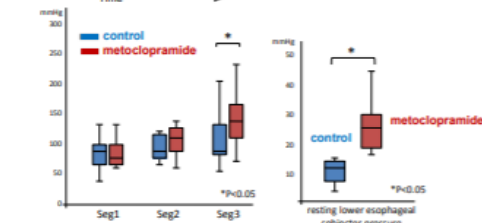
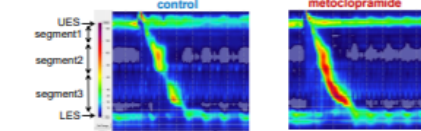
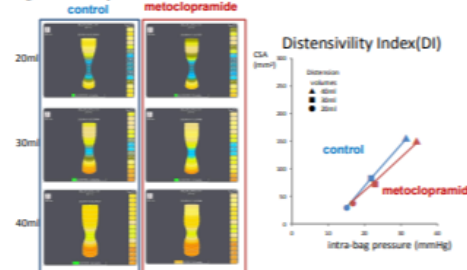


Figure 4. EGJ compliance



DI did not change after administration of metoclopramide (5.2mm²/mmHg vs. 5.8 mm²/mmHg), suggesting no significant difference in EGJ compliance caused by its administration.

SUMMARY AND CONCLUSIONS

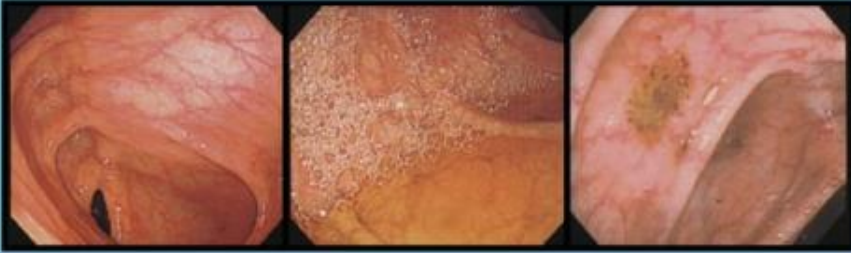
- This is the first study to evaluate the effects of metoclopramide on esophageal motor activity and EGJ compliance in healthy volunteers using high resolution esophageal manometry and an EndoFLIP device.
- Although metoclopramide significantly augmented esophageal motor activities, no significant effect on EGJ compliance was seen in healthy volunteers, unlike mosapride.
- Our findings indicate that the effect on EGJ compliance differs between these prokinetic agents, despite their similar pharmacological characteristics.
- This difference may be derived from the mechanism between the dopamine D₂ receptor antagonist and serotonin 5-HT₄ receptor agonist, and may also explain, at least in part, the different effects of these prokinetic agents on GERD.

• Although metoclopramide significantly augmented esophageal motor activities, no significant effect on EGJ compliance was seen in healthy volunteers, unlike mosapride

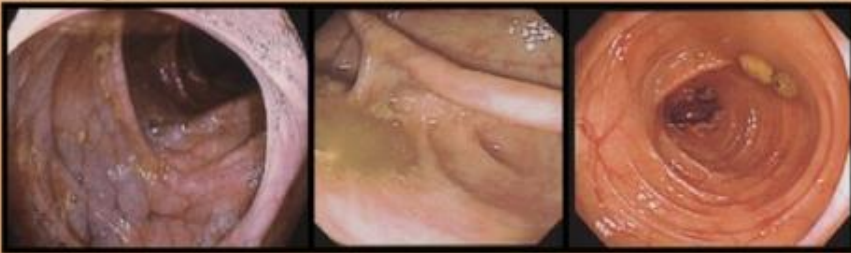
• Our findings indicate that the effect on EGJ compliance differs between these prokinetic agents, despite their similar pharmacological characteristics

• This difference may be derived from the mechanism between the dopamine D₂ receptor antagonist and serotonin 5-HT₄ receptor agonist, and may also explain, at least in part, the different effects of these prokinetic agents on GERD

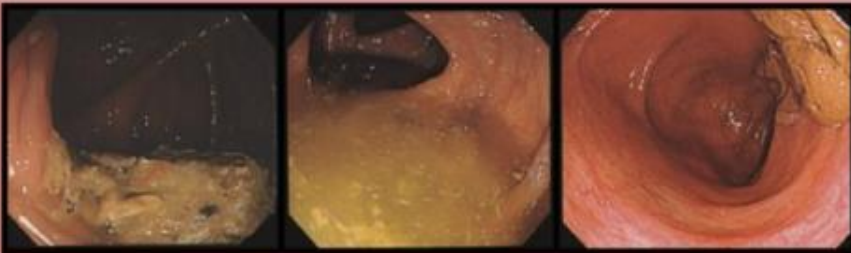
1. "Excellent" (greater than 90% of the mucosa was clearly seen; mostly liquid stool with minimal suctioning needed for adequate visualization)



2. "Good" (greater than 90% of the mucosa was clearly seen; mostly liquid stool, but significant suctioning needed for adequate visualization)



3. "Fair" (greater than 90% of the mucosa was clearly seen; a mixture of liquid and semisolid stool could be suctioned or washed)



4. "Poor" (less than 90% of the mucosa was seen together with a mixture of semisolid and solid stool that could not be suctioned or washed)



Figure 4: Cases in which lumps of stool were not eliminated by the 1,000-mL and 2,000-mL methods.

Efficacy of mosapride citrate with a split dose of PEG plus ascorbic acid for bowel preparation in **elderly** patients

- 257 pts
- Total BBPS score higher in mosapride
- BBPS scores of the right colon and mid-colon were 2.75 vs 2.61 ($P = .044$) and 2.89 vs 2.79 ($P = .030$), respectively
- The rate of adequate bowel preparation (BBPS ≥ 6) was similar
- Excellent bowel preparation (BBPS = 9) was higher
- Adverse, particularly abdominal fullness, was lower (11.9% vs 30.5%, $P < .001$).

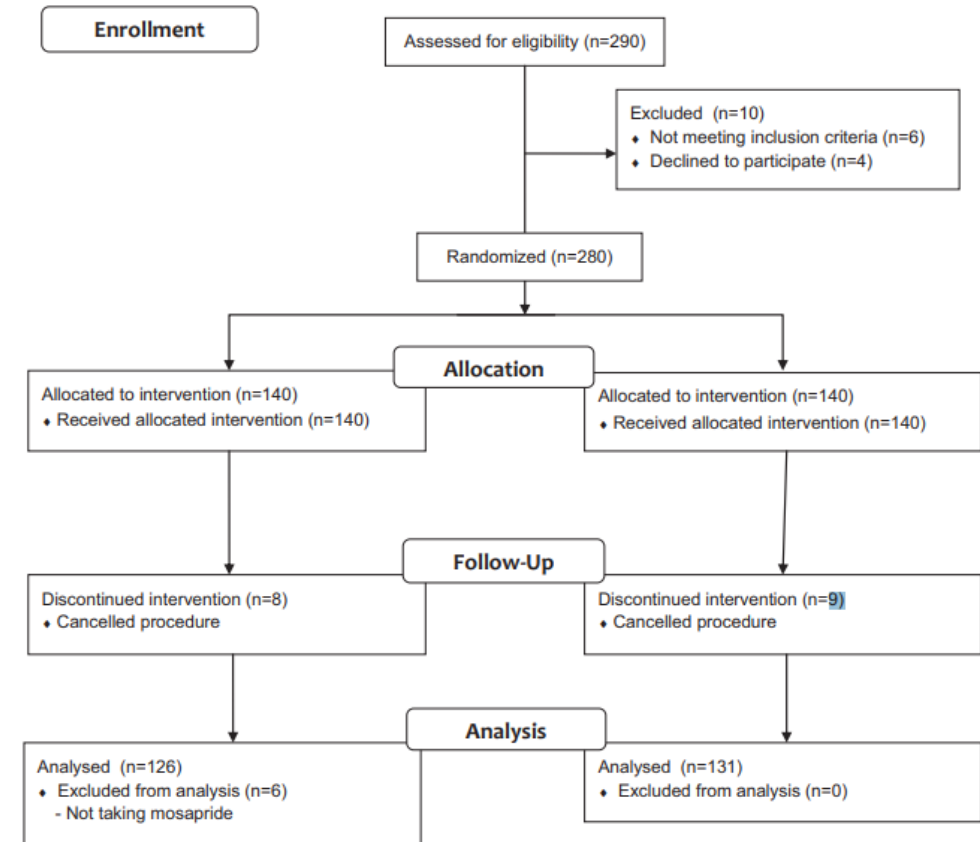
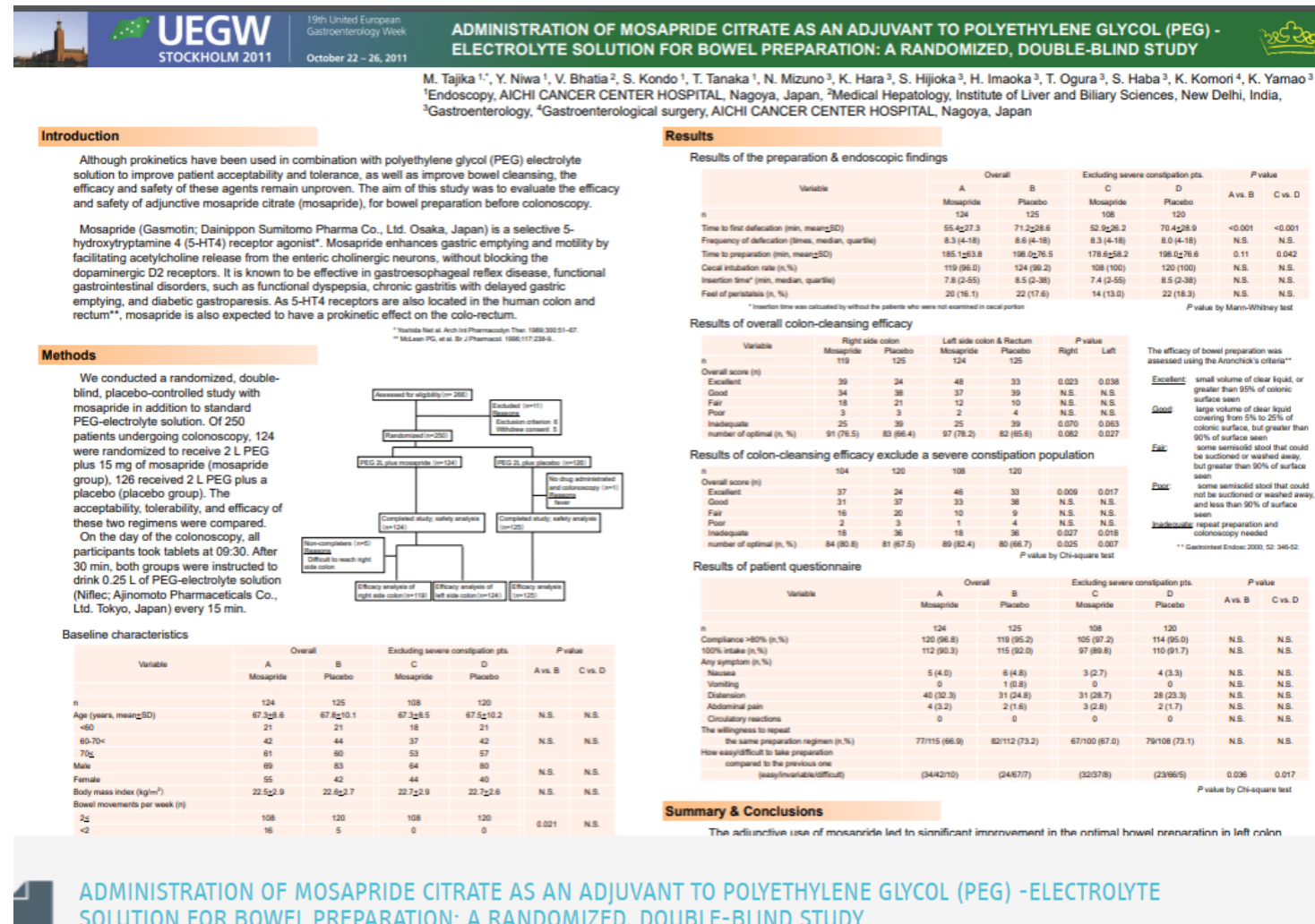


Figure 1. Consort flow diagram.

- The adjunctive use of mosapride led to significant improvement in the optimal bowel preparation in left colon, **but not in right colon**
- However, in patients without severe constipation, mosapride may be an effective and safe adjunct to PEG-electrolyte solution leading to an improved quality of bowel preparation for colonoscopy

GI-Vascular axis : Chumpon Wilasrusmee M.D.



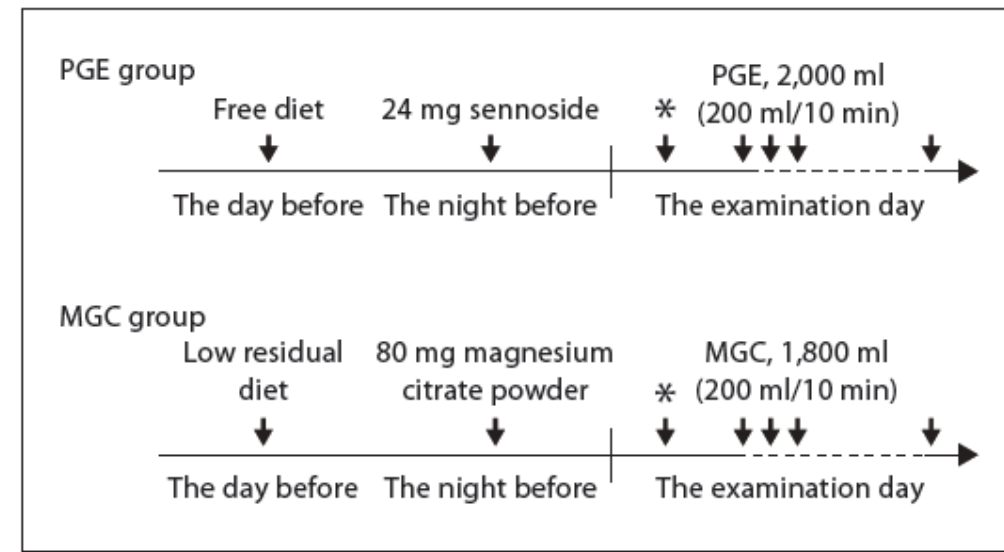
Combination could be another tool for bowel preparation?



- Optimal bowel preparation
- high-volume polyethylene glycol (PEG) solution, patients are often unwilling to take PEG solution due to its large volume, poor palatability, and high incidence of adverse events, such as abdominal bloating and nausea
- A combination of **PEG with an osmotic, stimulant, or prokinetic agent could effectively reduce the PEG solution volume and increase patients' adherence**
- Some such solutions have been found in several published studies to not be inferior to PEG alone in terms of bowel cleansing quality
- Although combination methods showed similar efficacy and safety, the value of these studies is limited by shortcomings in study design
- New effective and well-tolerated combination preparations are required, in addition to rigorous new validated studies.

Combination of PEG and prokinetics

- adjuvant agent for bowel preparation
- Cisapride, has been used in an attempt to improve colonic cleansing
- Combined regimen of cisapride and PEG improved colonoscopy visualization and alleviated symptoms such as vomiting
- Mishima et al showed that patients who received **50 mg itopride hydrochloride 30 min before administration of PEG solution** had fewer uncomfortable abdominal symptoms than those who received placebo
- A randomized controlled study showed that a 2 L PEG plus **15 mg of mosapride citrate regimen had significantly higher optimal bowel cleansing in left-sided colon** than 2 L PEG plus placebo



Reduction in colonic fluid



<i>Ottawa BPS rating for each colon segment</i>	
4=	Inadequate (solid stool not cleared with washing and suctioning)
3=	Poor (necessary to wash and suction to obtain a reasonable view)
2=	Fair (necessary to suction liquid to adequately view segment)
1=	Good (minimal turbid fluid in segment)
0=	Excellent (mucosal detail clearly visible)
<i>Ottawa BPS rating for the amount of fluid in the whole colon</i>	
2=	Large amount of fluid
1=	Moderate amount of fluid
0=	Small amount of fluid

- **RESULTS:**

- Patients in the prokinetics with split-dose PEG group showed significantly lower total Ottawa and segmental fluid scores compared with patients in the split-dose of PEG alone group.

- **CONCLUSION:**

- A sufficient dose of prokinetics with a split-dose of PEG showed efficacy in bowel cleansing for morning colonoscopy, largely due to the **reduction in colonic fluid**

Efficacy and Acceptability of 1 Liter of Polyethylene Glycol with Ascorbic Acid vs. 2 Liters of Polyethylene Glycol Plus Mosapride and Sennoside for Colonoscopy Preparation

- No differences between the groups in colon-cleansing efficacy or in the adenoma detection rate (ADR)
- **Favored PEG-Asc over PEG**
- 1 L PEG-Asc regimen and standard 2 L PEG





Enlighten and Illuminate



GI-Vascular axis : Chumpon Wilasrusmee M.D.



Evaluation of the antianxiety and antidepressant activities of mosapride in Wistar albino rats



- 5HT₄ receptor agonists are antidepressants with a unique mode of action
- Elevated plus maze (EPM) and open field (OF) tests
- **Mosapride-treated** animals showed significant anxiolytic behavior at both high and low doses
- Mosapride reduced immobility
- Climbing behavior was prominent at a high dose of mosapride
- Swimming was prominent at a low dose

รู้สึกเหมือนถูกหนัวยางรัดที่กระเพาะ

เมื่อเราปวดท้องเวลาทานข้าว เหมือนถูกหนัวยางรัดที่กระเพาะ

สวัสดีค่ะ มีครั้งหนึ่ง เราปวดท้องเวลาทานข้าว เหมือนถูกหนัวยางรัดที่กระเพาะ กระเพาะ
แน่นมาก เหมือนไม่ยอมขยายออก อึดอัดเหลือเกิน เป็นมา 2 วัน
ตอนนั้นยังทานยาชุด miracid+molitilium+gabapentin
งมาก กินยาอยู่ยังไม่หาย

ท้องมันอึดอัด เราก็กะเลยไปเดินรอบสวนลุมพินี วันละ 1 รอบ
ก็ยังไม่หาย วัากกก !!?!&!?!!!! จะบ้าตาย

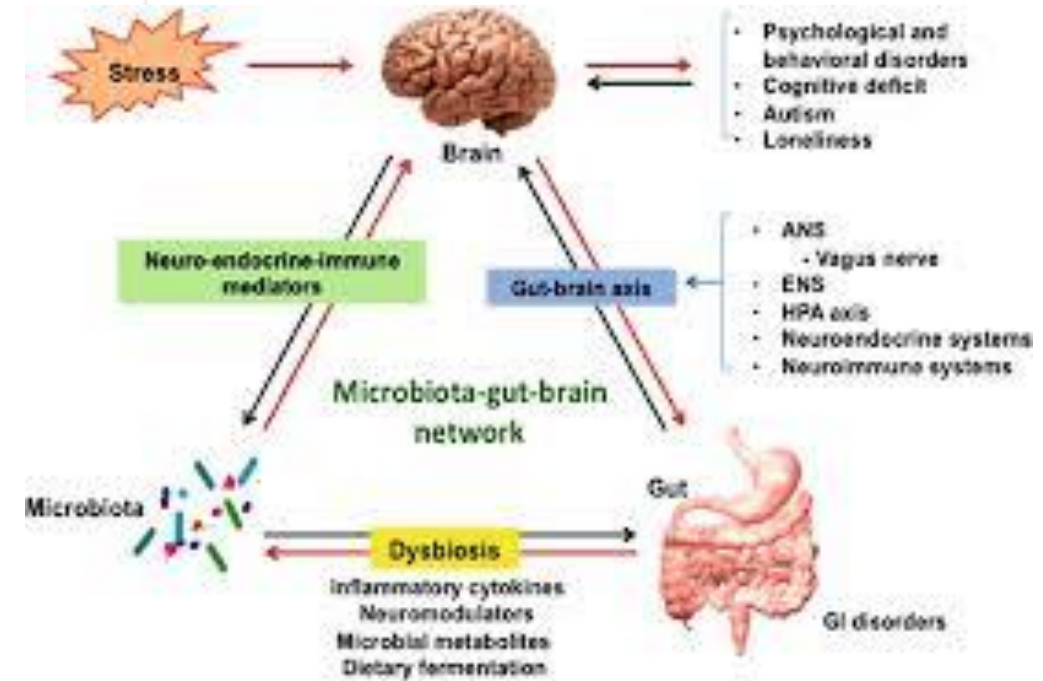
ไปปรึกษาเพื่อน ยาชุดที่ทานอยู่ ยังไม่เหมาะกับเรา
เพื่อนบอกลองเปลี่ยนหมอ เปลี่ยนโรงพยาบาลดีไหม

เราเลยเปลี่ยนโรงพยาบาล เอาประวัติส่องกล้อง+ultrasound ช่องท้องด้านบน
เล่าประวัติตัวเอง พฤติกรรม ยาที่ทานอยู่

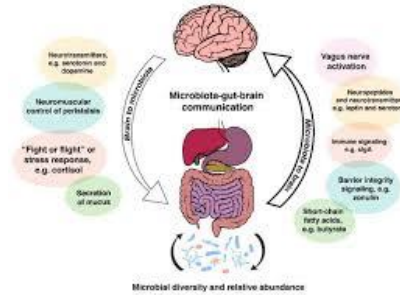
หมอเหมือนจะเข้าใจความคิดเรา

ได้ยา amitriptyline 10 mg + pariet 20 mg + gasmotin 5 mg
แต่เราทาน amitriptyline ตอนได้ยาเลย ทานตอนบ่าย ด้วยความอยากหายมาก ผล
ปรากฏว่าง่วงสุดๆ ผื่นขึ้นรถกลับบ้าน ทานไรตอนเย็นนิดหน่อย

ตื่นมา ไปทำงาน ทานข้าวเช้า กระเพาะดีขึ้นเยอะ
ทานข้าวเที่ยง กระเพาะไม่รู้สึกแน่น

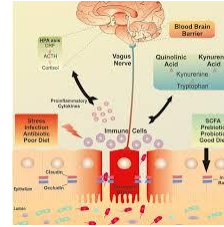


The treatment of gastroparesis, constipation and small intestinal bacterial overgrowth syndrome in patients with Parkinson's disease.



- Gastrperesis (GP) and small intestinal bacterial overgrowth syndrome (SIBO) with motilin agonists, dopamine receptor antagonists, Ghrelin agonists muscarinic agonists, **5-HT4 receptor agonists**, antibiotics, **probiotics** and herbal formulation such as iberogast.
- Various prokinetics and laxatives is paramount in achieving improvements in patient's motor function

Mosapride Stabilizes Intestinal Microbiota to Reduce Bacterial Translocation and Endotoxemia in CCl₄-Induced Cirrhotic Rats



- Mosapride treatment to cirrhotic rats significantly **reduced plasma endotoxin level** and incidence of BT, accompanied by increased intestinal transit rate (ITR)
- Cirrhotic rats suffered from BT exhibited significantly lower
- Negative correlation between the plasma endotoxin level and ITR
- Mosapride did **not** improve hepatic and intestinal damages and ileal expressions of **occludin** and ZO-1.
- Mosapride increases intestinal motility in cirrhotic rats, thus to recover the **disordered intestinal microbiota**

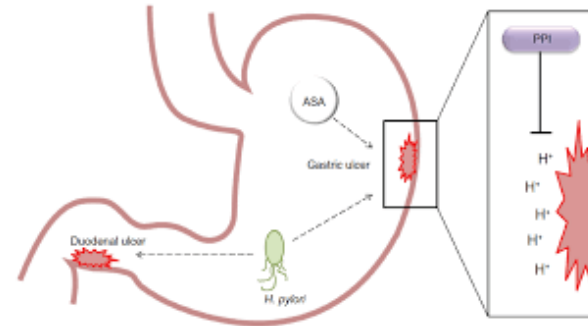
Mosapride combined with probiotics on gastrointestinal function and growth in premature infants.



- **240 premature infants**

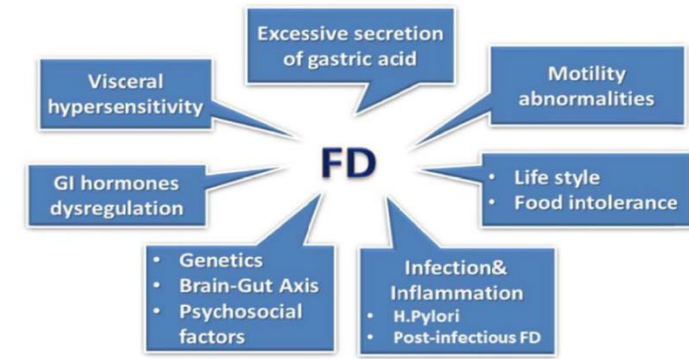
- Group A received routine treatment, group B received routine treatment combined with live *B. subtilis* and *E. faecium* granules with multivitamins (Medilac-Vita), and group C received routine treatment and *Saccharomyces boulardii* sachets (Bioflor)
- **Mosapride** was administered to patients in groups B and C to promote intestinal peristalsis
- By day 14, **gastrin concentrations** in groups B and C were significantly higher than those in group A
- Serum **bilirubin** levels in groups B and C showed a progressive **decline** from day 7 to day 14, and jaundice duration in group A was significantly longer
- Furthermore, at 2 weeks, the average weight **growth rate** and head circumference were significantly greater in groups B and C, weight loss recovery time was shorter, and EUGR incidence was lower
- Incidence rate of **gastric retention** were lower in groups B and C
- Neonatal hyperbilirubinemia, parenteral nutrition-associated **cholestasis**, necrotizing enterocolitis, and **neonatal sepsis** incidence was significantly lower in groups B and C

Increased expression of tight junction protein **occludin** is associated with the protective effect of **mosapride** against aspirin-induced gastric injury



- **Anti-ulcerogenic effects** in gastric mucosal injury is unclear.
- GES-1 cells cultured
- Rats in the mosapride groups were pretreated with mosapride 1 h prior to aspirin administration
- **Cell viability was significantly increased in the mosapride** pretreatment groups

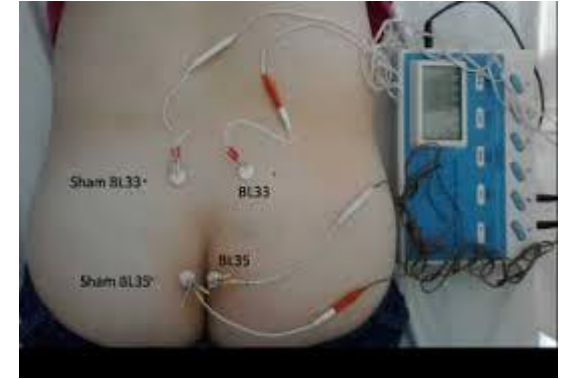
The usefulness of prokinetics in the treatment of acid-related disease



- ACID-RELATED SYMPTOMS WHETHER EXCESSIVE ACID SECRETION OR IMPAIRED GASTROINTESTINAL MOTILITY
- PROKINETIC AGENTS
 - REDUCTION GASTROESOPHAGEAL REFLUX EPISODES BY INCREASING LOWER ESOPHAGEAL SPHINCTER PRESSURE
 - IMPROVEMENT OF ESOPHAGEAL CLEARANCE BY STRENGTHENING ESOPHAGEAL PERISTALSIS
 - PREVENTION OF RISE IN INTRAGASTRIC PRESSURE BY AMELIORATING DELAYED GASTRIC EMPTYING AND IMPAIRED ACCOMMODATION, AND THE ATTENUATION OF VISCERAL HYPERSENSITIVITY BY HEIGHTENING THE THRESHOLD TO GASTRIC DISTENSION,
 - **CONCEIVABLE THAT PROKINETIC AGENTS RELIEF THE ACID-RELATED SYMPTOMS VIA A DIFFERENT MECHANISM OTHER THAN ACID SUPPRESSION AGENTS**



Electroacupuncture combined with mosapride alleviates symptoms in diabetic patients with gastroparesis.



- 56 pt type 2 diabetes, gastroparesis for >3 months
- Combination therapy with **EA and mosapride showed clinically significant improvements**
- EA, an option for improving mild symptoms
- Combination therapy with mosapride is required in patients with severe symptoms.

MOSAPRIDE CITRATE INCREASES LEVELS OF POSTPRANDIAL PLASMA-ACTIVE GLUCAGON-LIKE PEPTIDE-1 AND SERUM INSULIN

Introduction

Mosapride citrate is a gastrointestinal prokinetic agent that is widely used in East Asia. Studies have indicated that mosapride citrate can reduce the levels of haemoglobin A1c (HbA1c) in patients with type 2 diabetes [1, 2]. Other reports have demonstrated that it increases sugar utilisation by enhancing insulin sensitivity within the muscles [1] and increases the mobilisation of glucose transporters from intracellular pools in muscles [3]; however, the causative mechanisms for these actions are unclear. L-cells in the gastrointestinal tract, which are enteroendocrine cells, secrete glucagon-like peptide-1 (GLP-1), which stimulates insulin secretion from beta cells of the pancreas and enhances insulin sensitivity within the muscles. Thus, we hypothesised that the effect of mosapride citrate on glucose metabolism was mediated through GLP-1 and tested this hypothesis in the present study.

Method

Twelve healthy men (mean age, 31.9 ± 7.8) consumed a test meal and active GLP-1, as well as the blood chemistry results in the test meal. After the oral administration of 5 mg of mosapride citrate 30 minutes before and after subjects consumed the test meal. This study

Mosapride might elicit improvement in the glycemic control in the patients with diabetic gastropathy.

Result

None of the subjects developed side effects or demonstrated a change in body weight. Postprandial plasma-active GLP-1 concentrations were significantly higher after the 14-day administration of mosapride citrate (4.8 ± 2.2 pmol/L) than those before administration (3.7 ± 1.2 pmol/L, $p < 0.05$, paired t-test). In addition, postprandial serum insulin concentrations were significantly higher after administration (45.6 ± 41.6 μ IU/mL) than those before administration (34.1 ± 28.4 μ IU/mL, $p < 0.05$, paired t-test). In contrast, the concentrations of preprandial plasma-active GLP-1 and serum insulin did not change after the 14-day administration of mosapride citrate.

Conclusion

Administration of a conventional dose of mosapride citrate increases postprandial concentrations of plasma-active GLP-1 and serum insulin in healthy men.

THE CHANGES OF NO-SYNTHASES ACTIVITY AND OXIDATIVE PROCESSES IN STOMACH AND COLON UNDER THE INFLUENCE OF 5-HT₄ RECEPTORS AGONIST MOSAPRID IN STREPTOZOCIN-INDUCED DIABETES MELLITUS

Alexander Sklyarov (1), Ostap Detsyk (1), Christina Nasadyuk (1), Natalya Panasyuk (1)

(1) DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Text

PDF

Preference of Gasmotin in DM



Introduction

Diabetes mellitus is assumed to cause the relaxation of the the smooth muscles of the digestive organs, resulting in the decrease of the gastric and colonic motility. The system of L-arginine/NO-synthases (NOS)/NO contributes to the processes of smooth muscles relaxation. One of the mechanisms of the digestive organs motility activation is associated with 5-HT₄ receptors, although their role in diabetes mellitus leaves much to be elucidated.

Conclusion

The increase of iNOS activity results in decrease of the smooth muscles tone and alterations of the motor-evacuating function of the stomach and colon. The activation of 5-HT₄ receptors by mosaprid in streptozocin induced hyperglycemia decreases inducible NO-synthase activity and oxidative processes and does not influence the glucose level in blood. Thus, 5HT₄-receptors agonists may be recommended for the improvement of the motor-avacuating function in patients with diabetes mellitus.

Women and functional dyspepsia



- The use of prokinetic agents in those patients who have dysmotility like symptoms appears to be intuitively appealing
- A subsequent **Japanese meta-analysis** from 2008 included studies of other prokinetic agents (metoclopramide, domperidone, trimebutine, cisapride, itopride or **mosapride**) of varying doses over 2–6 weeks. In this meta-analysis of 20 RCTs and seven crossover trials (1844 in the intervention group and 1591 in the placebo group), a **statistically significant difference in outcome was found favouring the intervention**, with an odds ratio of 0.295 (95% CI: 0.208–0.382; $p < 0.001$)

Prokinetics for functional dyspepsia.

- Significant effect of prokinetic treatment in reducing global symptoms of FD (NNTB =7, very low-quality evidence) with considerable heterogeneity
- After removing cisapride from the analysis, the effect still persisted
- Significantly better post-treatment symptom score in other prokinetics, compared to domperidone
- No difference in reducing global symptom and mean difference symptom scores
- Adverse events in individual prokinetics was not different from placebo
- Greater adverse effects in the active treatment group with cisaprid
- Diarrhoea, abdominal discomfort and nausea
- **AUTHORS' CONCLUSIONS: Unable to say**

Efficacy of serotonin receptor agonists in the treatment of functional dyspepsia: a meta-analysis

- 10 RCTs, 892 pt efficacy of serotonin receptor agonists, 640 placebo group
- Serotonin receptor agonists significantly higher response rate compared to placebo (pooled OR = 2.99; 95% CI: 1.15-7.77; $p = 0.025$)
- Improvement in symptom scores compared to the placebo group (pooled standardized mean difference = -0.43; 95% CI: -0.83 to -0.04; $p = 0.031$). Sensitivity analysis indicated that the pooled estimates for abdominal symptom score might be affected by the Yeoh *et al.* (1997) study.
- **CONCLUSIONS:**
- Serotonin receptor agonists had a **significantly higher efficacy** compared to placebo in the treatment of FD.

Acupuncture for patients with chronic functional constipation: A randomized controlled trial.



- Multicenter RCT
- Spontaneous bowel movements (SBMs) increased in all
- Acupuncture treatments were **as effective as mosapride** in improving stool frequency and stool consistency



Functional dyspepsia in primary care: therapeutic variety or helplessness?

- Data from 322 doctors
- Most common symptoms reported by patients were postprandial fullness (81.7%), epigastric pain or burning (77.3%) and regurgitation (75.0%)
- Prescribed drugs: phytotherapeutics (88.2%), proton-pump inhibitors (PPI, 73.6%) and prokinetics (61.5%)
- **Antacids, digestive enzymes** of the stomach and pancreas was 10-20%
- Functional dyspepsia is common in primary care practice
- Current recommendations for diagnosis and differential therapy are often not implemented

gasmotin กินแล้วปากแห้งถือว่าปกติหรือเปล่าคะ

ยา

กินได้ประมาณหนึ่งสัปดาห์ร่วมกับ pariet รู้สึกว่ากินแล้วปากแห้งค่ะถือว่าผิดปกติหรือเปล่าคะ

สามารถลดปริมาณยาจาก 3 เวลาก่อนอาหารเป็นเช้า เย็นได้ไหม

หรือเปลี่ยนไปใช้ยาตัวไหนแทนได้มั่ง

ปล. มั่นใจว่าเป็นตัวนี้เพราะเคยกิน pariet ตัวเดียวไม่มีอาการค่ะ

Adverse Reaction

**Adverse reactions were found 40 of
998 cases (4.0%)
in clinical trial**

Clinical

diarrhea/loose stools 1.8%

dry mouth 0.5%

malaise 0.3%

Laboratory

increased eosinophils 1.1%

increased triglycerides 1.0%

increased transaminases 0.4%



Effect on pharmacokinetics and ECG by concomitant use with Erythromycin

	Time	7days	14days	P - value
R - R	Before Administration	1.105±0.188	1.107±0.150	N.S.
	After 1hour	1.123±0.140	1.057±0.150	N.S.
	After 2hours	1.068±0.137	1.109±0.184	N.S.
	After 4hours	1.154±0.197	1.116±0.132	N.S.
QT(hr.)	Before Administration	0.389±0.019	0.394±0.021	N.S.
	After 1hour	0.384±0.012	0.384±0.016	N.S.
	After 2hours	0.387±0.013	0.390±0.023	N.S.
	After 4hours	0.389±0.020	0.386±0.021	N.S.
QTc	Before Administration	0.372±0.029	0.376±0.028	N.S.
	After 1hour	0.363±0.013	0.375±0.020	N.S.
	After 2hours	0.375±0.018	0.373±0.023	N.S.
	After 4hours	0.364±0.026	0.366±0.010	N.S.

Characteristic Profile of GASMOTIN

- ⌚ Selective 5-HT₄ receptor agonistic effect
Selectively acts on GI tract
- ⌚ Excellent efficacy in upper GI tracts
Effective for symptoms associated with NUD/FD (heartburn, nausea/vomiting), etc
- ⌚ Minimal QT prolongation
No serious arrhythmic side effects
- ⌚ No dopamine-D₂ receptor blocking effects
No extra pyramidal symptoms
- ⌚ Can be administered both before and after meals
Better compliance in concomitant use with other drugs

Indication and Dosage

Indication:

- ✦ Gastrointestinal symptoms, associated with Functional Dyspepsia chronic gastritis (heartburn, nausea/vomiting)

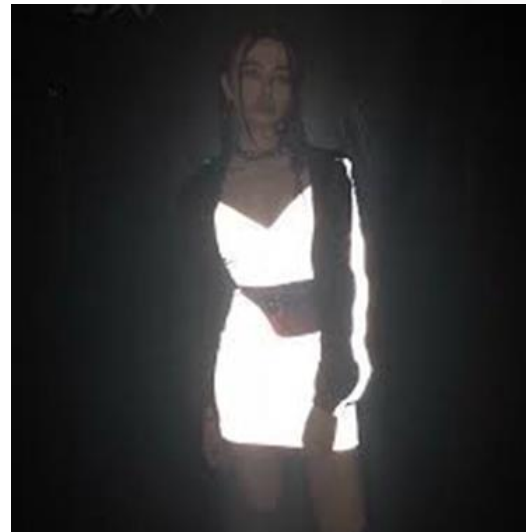
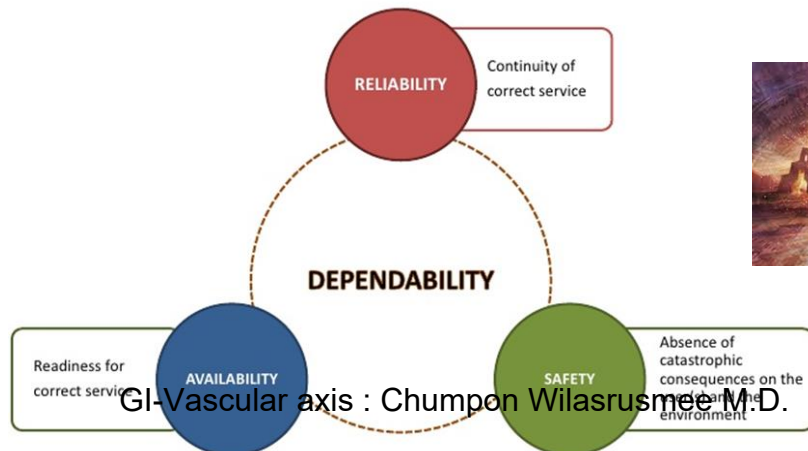
Standard dosage:

- ✦ Mosapride 5mg three times a day



GASMOTIN®:GI-vascular axis

“ The beautiful is a phenomenon which is never apparent of itself, but is reflected in a thousand different works of the creator. ” —Johann Wolfgang von Goethe



และนี่คือพวกเรา “ศัลยศาสตร์ทางเดินอาหารและศัลยศาสตร์ทั่วไป”

- “ตัวตนและวัฒนธรรมของพวกเรา”
- เพราะผลลัพธ์ที่ยั่งยืนคือจุดมุ่งหมาย ของพวกเรา
- เพราะการสร้างสมดุลของวิวัฒนาการใหม่ และการปรับปรุง ดำเนินการอย่างต่อเนื่องของกระบวนการเดิมเป็นแนวความคิดหลัก ของพวกเรา
- เพราะการทำงานที่ตรงเป้าหมายตามแผน เป็นแนวทางของพวกเรา ที่ทำให้เกิดการปฏิบัติงานอย่างมีประสิทธิภาพ “ทำน้อยได้ผลลัพธ์เป็นเลิศ” หรือ “ทำแบบถูกวิธี”
- เพราะพวกเรา จะเป็นส่วนหนึ่งที่จะไม่สร้างปัญหาให้กับส่วนรวม และจะดำเนินการเต็มความสามารถเพื่อภาควิชาศัลยศาสตร์ คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี และมหาวิทยาลัยมหิดล