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SAGIM

SVENSKA GASTRO DAGARNA

8-10 MAJ 2019 JÖNKÖPING

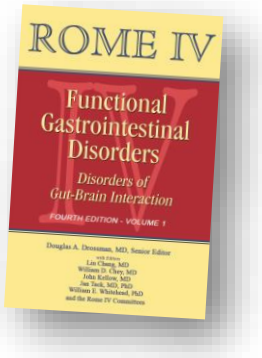
uib.no

En gang var refluks enkel …

- Alle hadde brystbrann …
- Alle hadde øsofagitt …
- Alle ble bra på omeprazole …

Today:

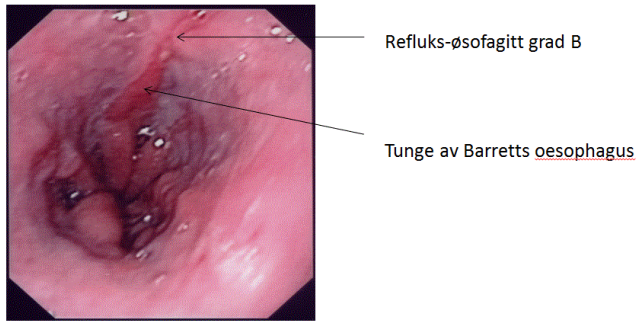
- The patient only partially responding to proton pump inhibitors …
- A standard approach to study patients
- … ending up with very different conclusions
- Functional disorders are common
  - Reflux sensitivity and
  - Functional heartburn



Case 1

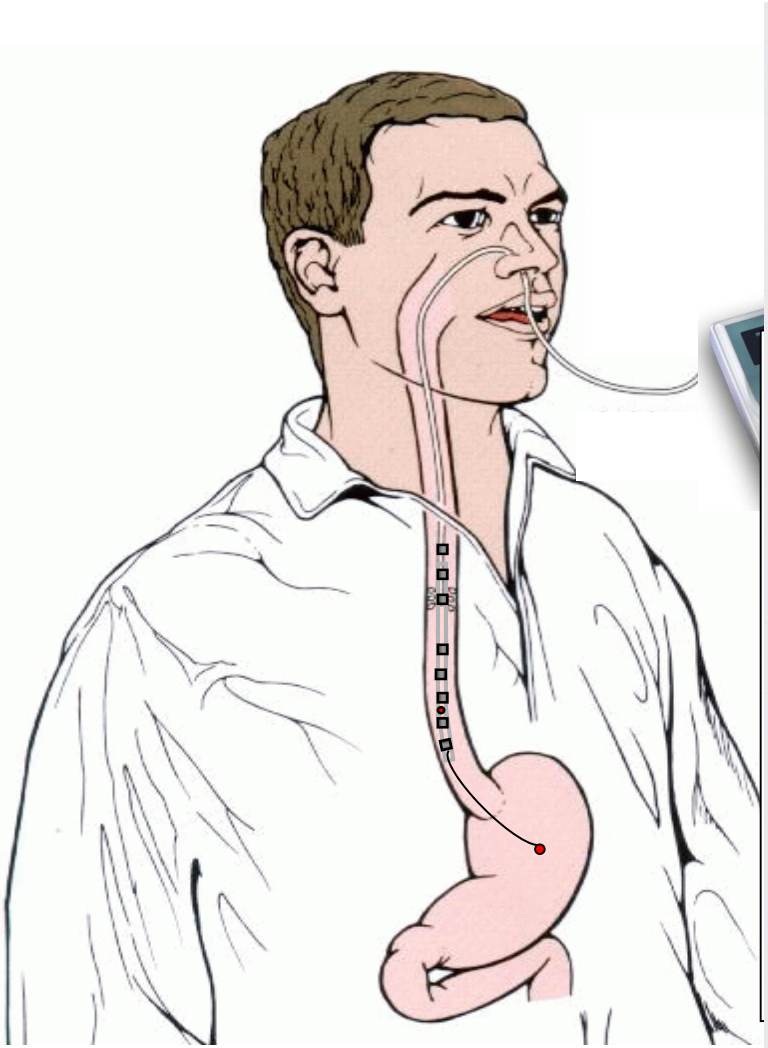
- 62y old male
- Carpenter
- 10y history, Losec 20mg (almost) daily
- Still heartburn on exertion and nighttime
- Did not heal – LA grade B, BE??

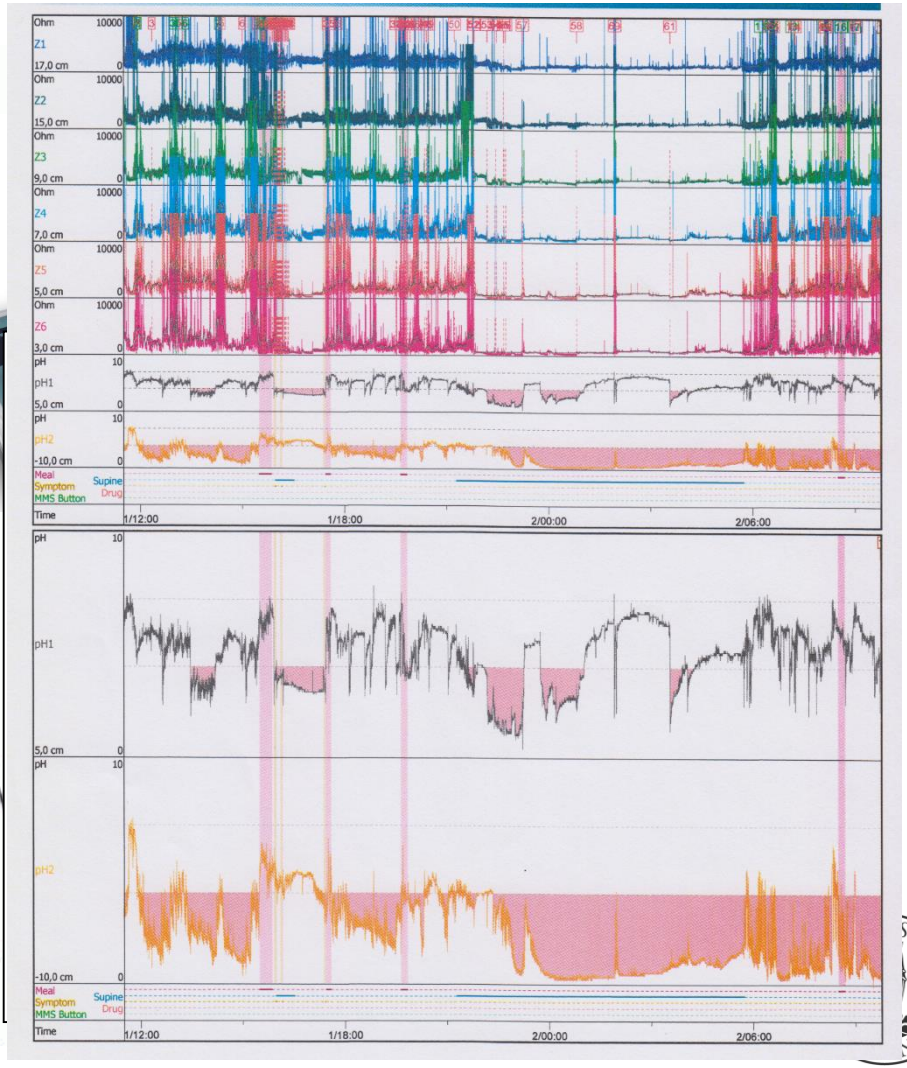
- Losec 20mg x 2, nighttime antacids
- Still grade B and (BE)



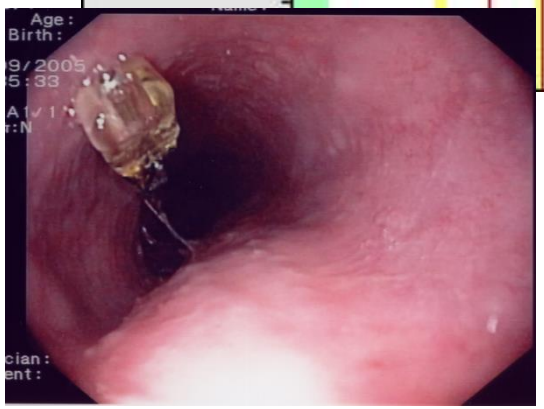
- What next? pH-monitoring on PPI

24-hour impedance pH-monitoring with two pH-channels (oesophagus, gastric)

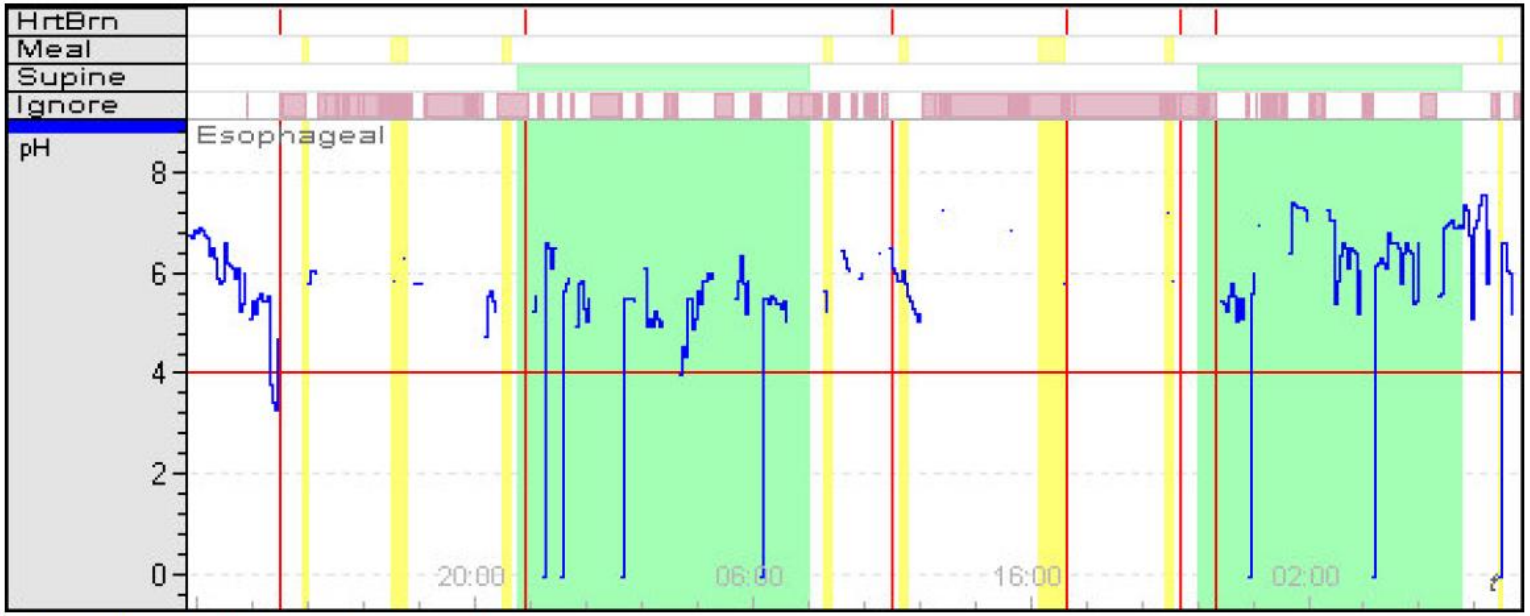




Bravo 48-h pH monitoring



Bravo ved esomeprazole 20mgx2



Reflux Table - Acid Reflux Analysis- Day 1

	Total	Upright	Supine	PostPr	HrtBrn
Duration of Period (min)	12:36	06:02	06:34	02:42	00:02
Number of Refluxes	21	11	10	2	0
Number of Long Refluxes>5 (min)	0	0	0	0	0
Duration of longest reflux (min)	3	2	3	0	0
Time pH <4 (min)	11	5	6	1	0
Fraction Time pH <4 (%)	1.5	1.5	1.5	0.4	0.0

Guidelines on Esophageal Function Testing and Interpretation

THE LYON CONSENSUS MEETING

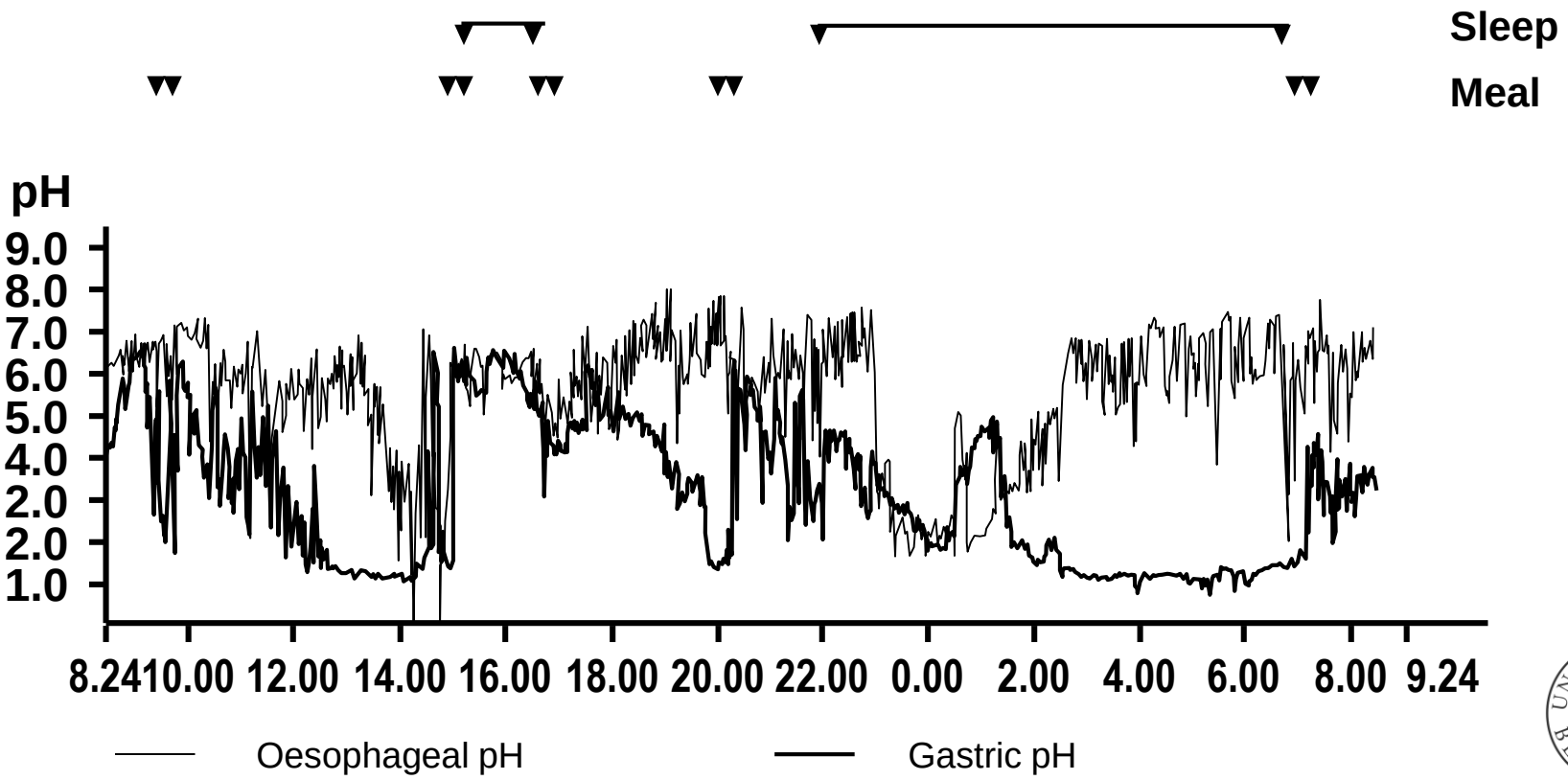
November 10, 2017

- Record for a duration of >16 hours (48h?)
- Limits of physiological gastro-oesophageal reflux is not well established;
  - Proposal: <4% time pH<4.0 is normal, 4-6% is «borderline abnormal», >6% is abnormal
- Interpretation of impedancemetry is still controversial
  - total number of (reflux) episodes
  - bolus exposure?
  - Separate SAP for acid and weakly acidic reflux

Savarino E et al. Nat Rev Gastroenterol Hepatol 2018;15:323

In a patient taking a PPI twice daily …

- control of gastric acidity >4 >50% of time?
- control of oesophageal acid exposure to <4-6% of time?
- control of oesophageal bolus exposure to <2.1% of time?
- symptom / reflux episode time association (SAP)?



Tailored therapy for insufficient PPI response

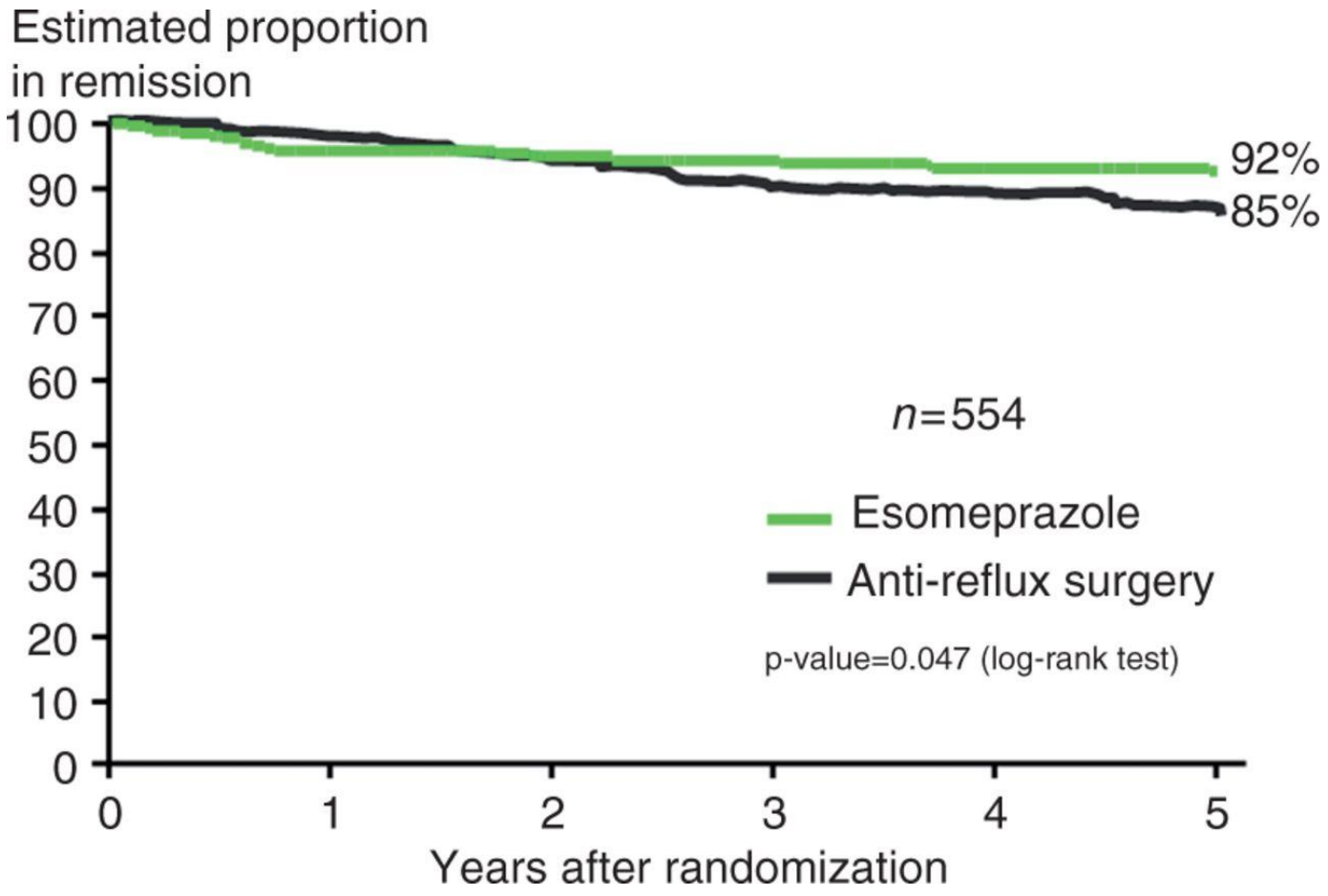
- Further increase each PPI dose?
- Individual response – may require repeated testing

- Add an H_2 receptor antagonist at bedtime for NAB?

- Add alginates at bedtime …
- Remind of lifestyle advice!
- Elevate head of bed (Bedge®)

- Or think fundoplication?

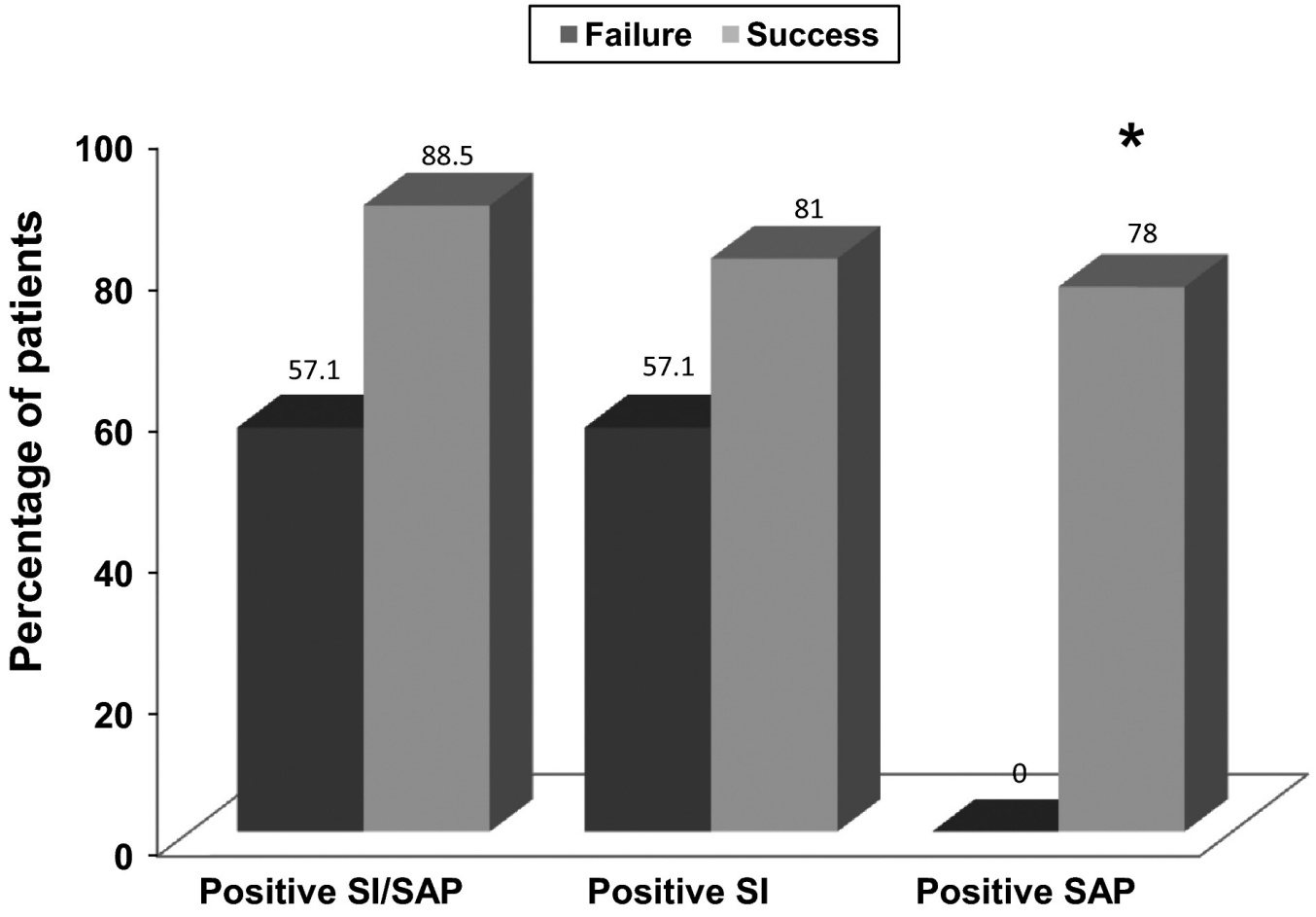
LOTUS - laparoskopic fundoplication compared with long-term PPI



Galmiche J-P et al.. JAMA 2012

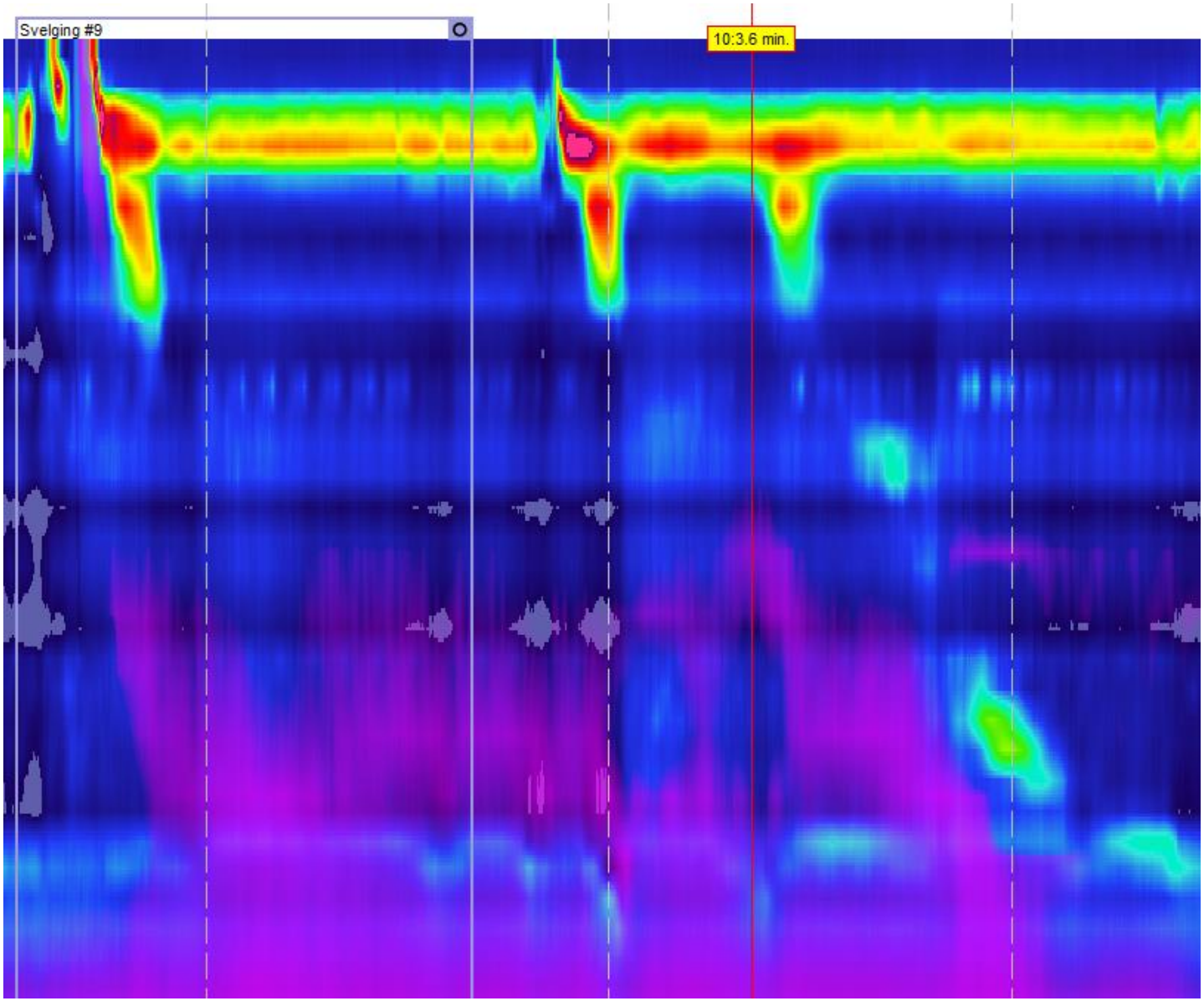
The importance of Symptom Association Probability

Impedance pH monitoring parameters predict failure of fundoplication



Desjardin M et al. Neurogastroenterol Motil 2016;28:146-52

Ineffective eosohageal motility

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Case 2

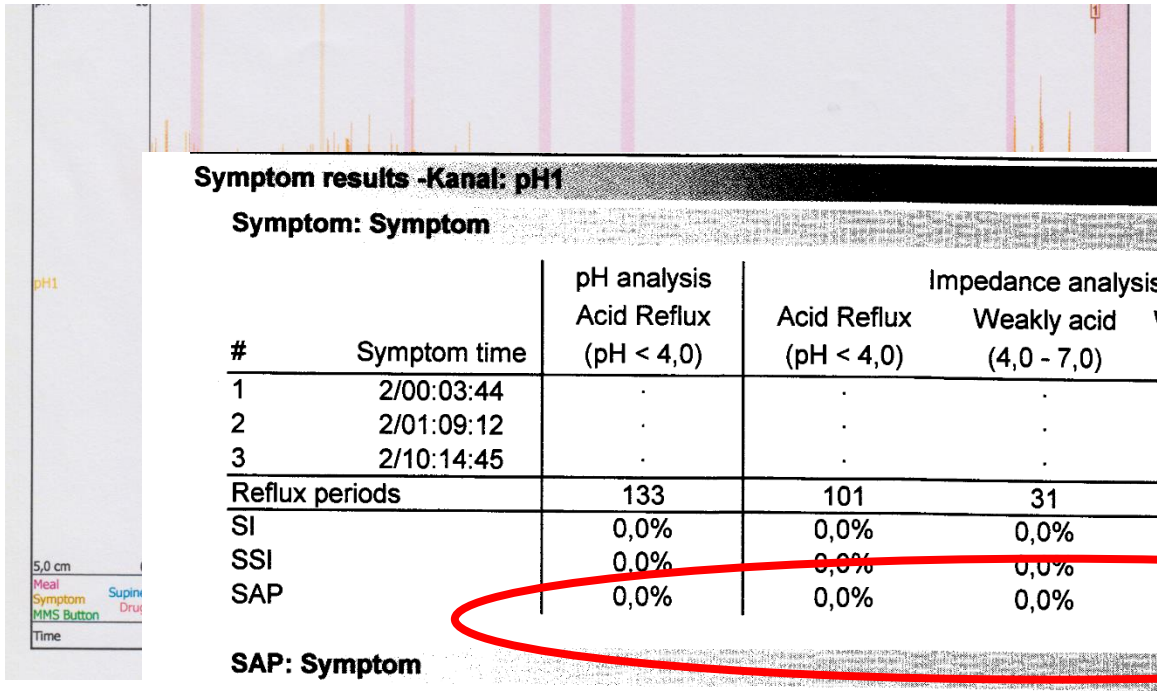
- Woman aged 34
- Retrosternal, burning pain
- Present every day, but with exacerbations

- Nighttime ok

- Different PPIs with little effect
- Zantac worked better

- Gastroscopy normal
- Manometry
- pH-metry **off** PPIs

Normal impedance pH-metry



Symptom results -Kanal: pH1

Symptom: Symptom

#	Symptom time	pH analysis Acid Reflux (pH < 4,0)	Impedance analysis Acid Reflux (pH < 4,0)	Impedance analysis Weakly acid (4,0 - 7,0)	Impedance analysis Weakly alkaline (7,0 < pH)	Total
1	2/00:03:44	.	.	.	.	.
2	2/01:09:12	.	.	.	.	.
3	2/10:14:45	.	.	.	.	.
Reflux periods		133	101	31	0	132
SI		0,0%	0,0%	0,0%	0,0%	0,0%
SSI		0,0%	0,0%	0,0%	- %	0,0%
SAP		0,0%	0,0%	0,0%	0,0%	0,0%

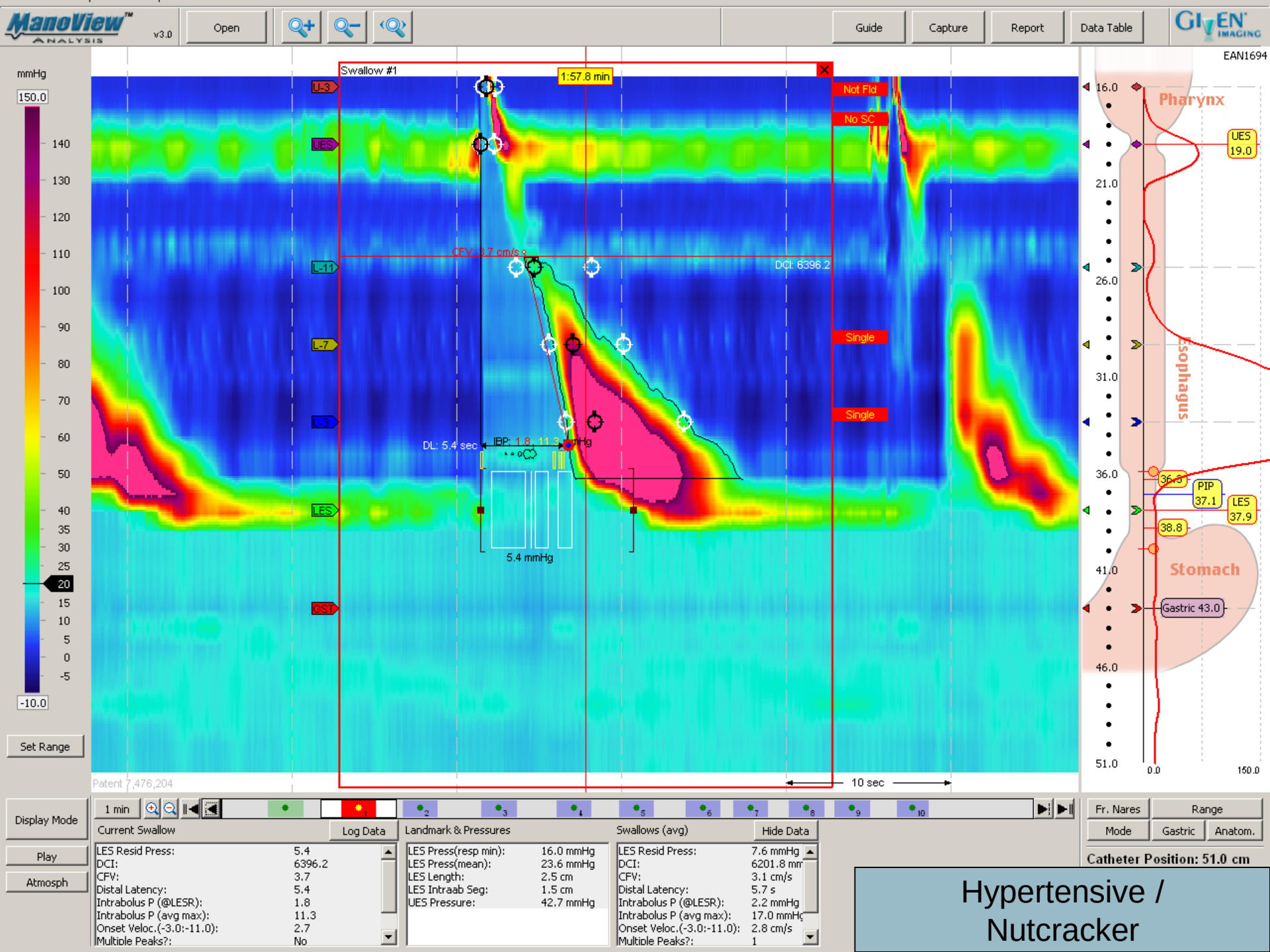
SAP: Symptom

pH — p = 1,0000

	S+	S-	Total
R+	0	85	85
R-	3	565	568
Total	3	650	653

Impedance — p = 1,0000

	S+	S-	Total
R+	0	80	80
R-	3	570	573
Total	3	650	653


ManoView™ ANALYSIS
v3.0
Open
Guide
Capture
Report
Data Table
GIVEN IMAGING
EAN1694
mmHg
150.0
-10.0
Set Range
Swallow #1
1:57.8 min
Not Fld
No SC
Single
Single
U-3
UES
L-11
L-7
L-3
LES
GST
CFV: 3.7 cm/s
DCI: 6396.2
DL: 5.4 sec
IBP: 1.8, 11.3 mmHg
5.4 mmHg
10 sec
Patent 7,476,204
Pharynx
Esophagus
Stomach
UES 19.0
PIP 37.1
LES 37.9
38.8
Gastric 43.0
Display Mode
Play
Atmosph
1 min
Current Swallow
Log Data
LES Resid Press: 5.4
DCI: 6396.2
CFV: 3.7
Distal Latency: 5.4
Intrabolus P (@LESR): 1.8
Intrabolus P (avg max): 11.3
Onset Veloc.(-3.0:-11.0): 2.7
Multiple Peaks?: No
Landmark & Pressures
LES Press(resp min): 16.0 mmHg
LES Press(mean): 23.6 mmHg
LES Length: 2.5 cm
LES Intraab Seg: 1.5 cm
UES Pressure: 42.7 mmHg
Swallows (avg)
Hide Data
LES Resid Press: 7.6 mmHg
DCI: 6201.8 mm
CFV: 3.1 cm/s
Distal Latency: 5.7 s
Intrabolus P (@LESR): 2.2 mmHg
Intrabolus P (avg max): 17.0 mmHg
Onset Veloc.(-3.0:-11.0): 2.8 cm/s
Multiple Peaks?: 1
Fr. Nares
Range
Mode
Gastric
Anatom.
Catheter Position: 51.0 cm
Hypertensive / Nutcracker

A. Functional Oesophageal Disorders ROME IV

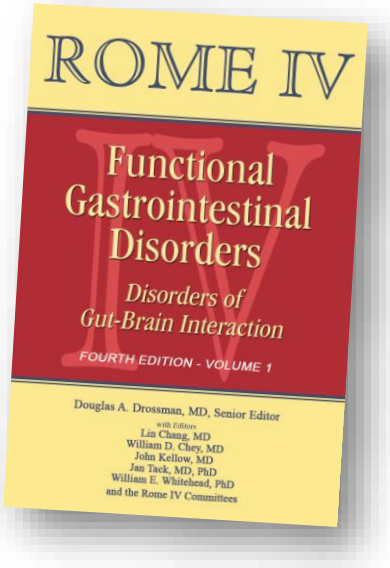
A1. Functional chest pain

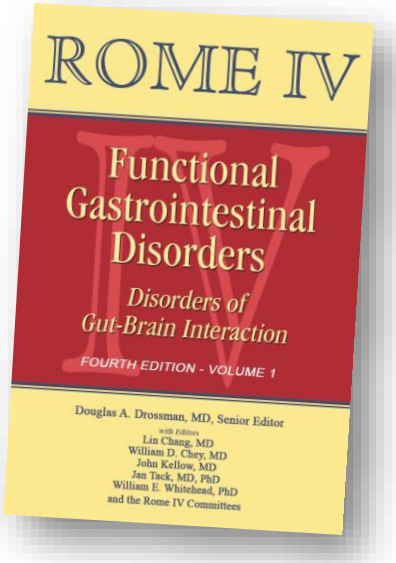
A2. Functional heartburn

A3. Reflux hypersensitivity

A4. Globus

A5. Functional dysphagia



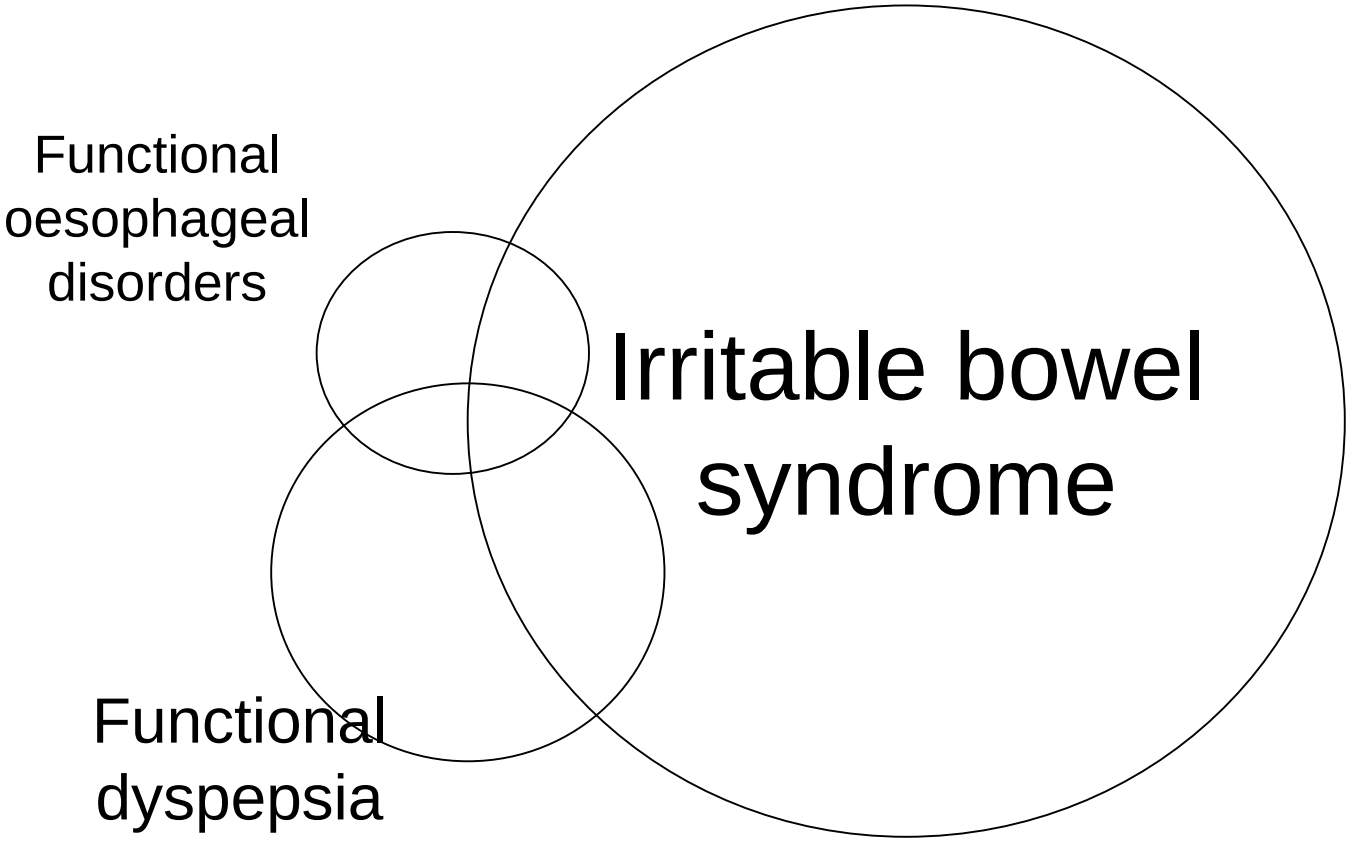


A2 - Functional heartburn

- Physiological gastro-oesophageal reflux
- No time-relationship to episodes of gastro-oesophageal reflux
- Low SAP (<0.95) and SI (<50%)

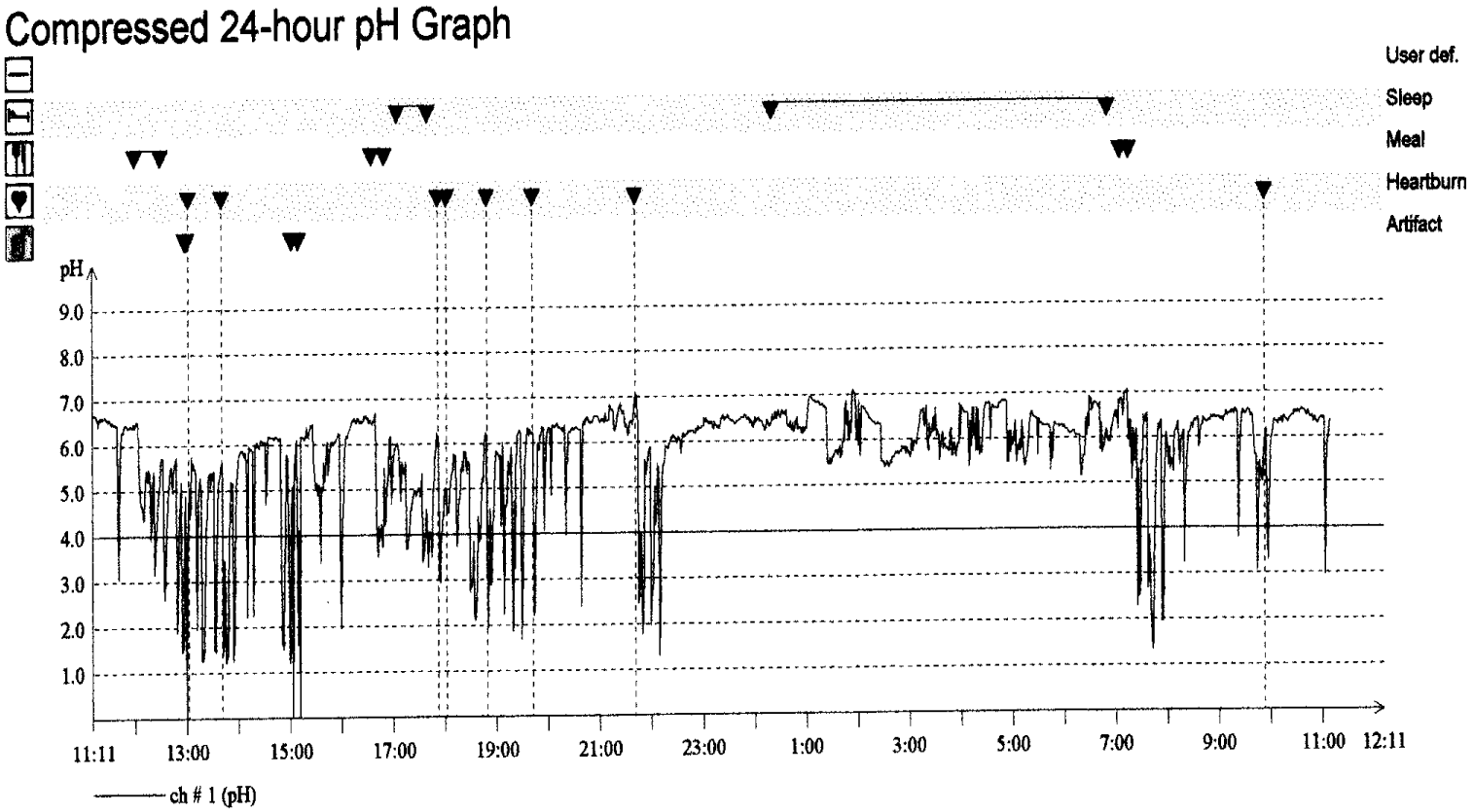
- Not GERD

Overlap in functional GI disorders:



Reflux sensitivity

pH Channel



% time pH < 4.0 = 2.3 SAP = 98.5 %

Symptom Association Probability

169	2/11:47:37	*	*	
170	2/11:51:57			
171	2/11:56:57		*	
172	2/11:57:07	*	*	
173	2/12:00:37			
174	2/12:03:57			
175	2/12:06:47	*	*	
176	2/12:06:57	*	*	
177	2/12:11:27			

Nr of symptoms analyzed	177
Nr of symptoms related to reflux	120
Nr of symptoms not related to reflux	57
Nr of reflux periods	50
Symptom index for reflux (SI)	67,8 %
Symptom sensitivity index (SSI)	240,0 %
Symptom association probability (SAP)	100,0 %

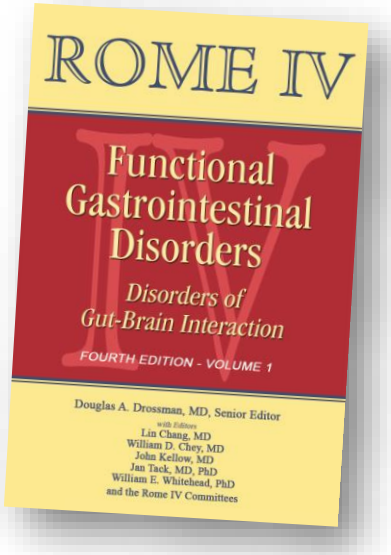
SAP

	S+	S-	Total
R+	108	165	273
R-	69	565	634
Total	177	730	907

p = 0,0000

SAP = 100 – p = 100%

SAP 95 – 100% viser økt sensitivitet

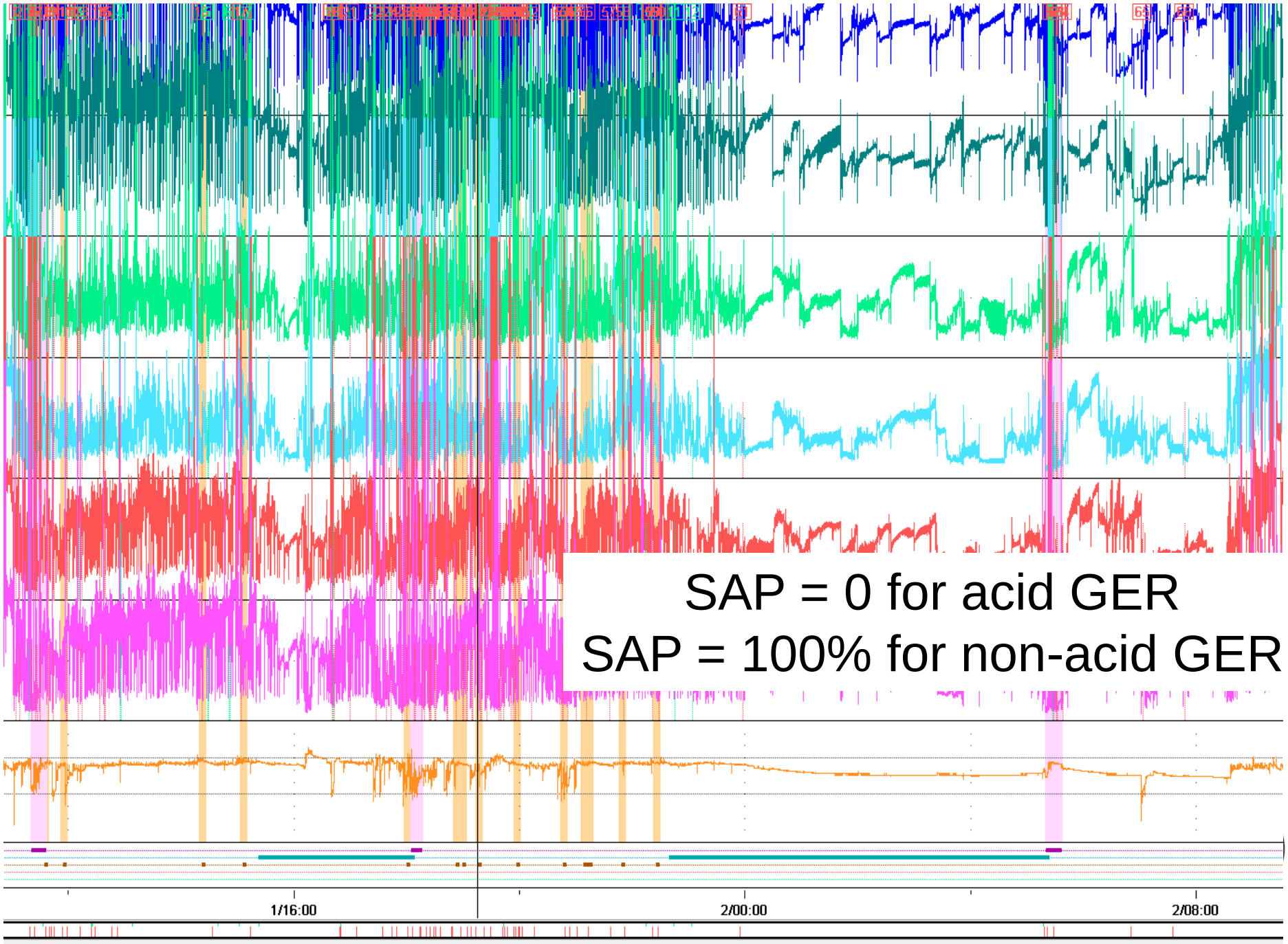


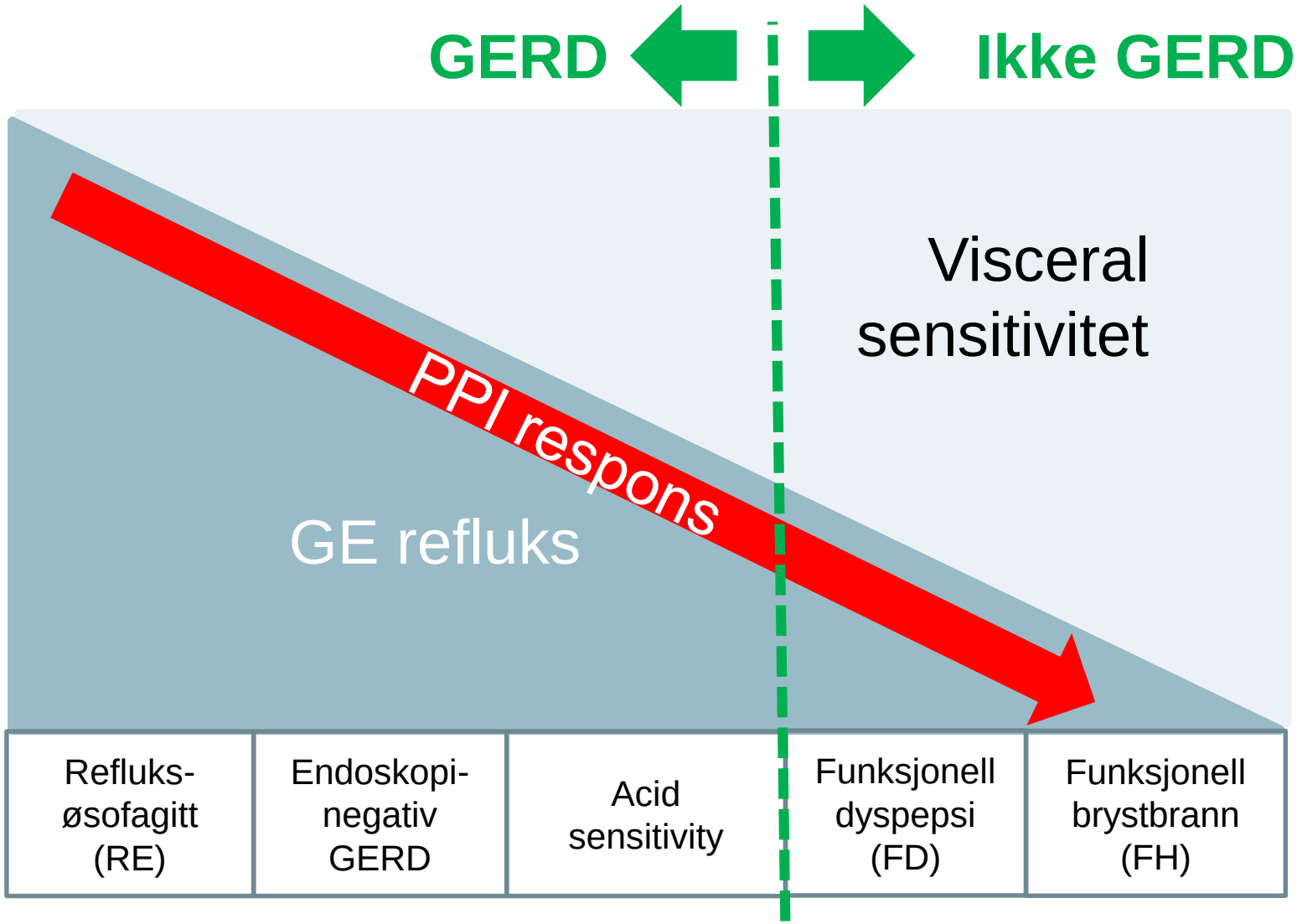
A3 - Reflux sensitivity

- Normal acid exposure, but high sensitivity
- Shown as a high SAP (>0.95) or SI value (>50%, >3 episodes) for acid or weakly acidic reflux

- Whether GERD or not is a matter of debate …

- The difference from functional heartburn is only the symptom – time relation to reflux


SAP = 0 for acid GER
SAP = 100% for non-acid GER
1/16:00
2/00:00
2/08:00



C.Jonasson etter Galmiche J-P et al, UEG journal 2013

Management of the partially responding patient …

- How well established is the GERD diagnosis?

- If well established …
  - optimize PPI therapy twice daily before meals
  - investigate while on medication
  - tailor therapy to response
- Investigate the time relationship of residual symptoms to reflux episodes

- SAP is predictive of response to therapy
- Laparoscopic anti-reflux surgery is possible only in selected patients!

Management of the partially responding patient …

- If not established GERD …
- Impedance pH-metry
  - Off PPIs, and
- Investigate time relationship of residual symptoms to reflux episodes

- Instruction for impedance pH-metry is critical!
- Combination of functional heartburn and functional gastrointestinal disorders is common