endo-update® 2014

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Wissenschaftliche Leitung:

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P. Siersema, Utrecht/Niederlande
Diagnostische Endoskopie –
Die 5 wichtigsten Publikationen 2014

D. Hartmann, Berlin
ERCP – Die 5 wichtigsten Publikationen 2014

J. Hochberger, Strasbourg/Frankreich
Technische Innovationen und neue Produkte
in der Endoskopie

C. Meyenberger, St. Gallen/Schweiz
Sicherheit in der Endoskopie

S. Faiss, Hamburg
EUS – Die 5 wichtigsten Publikationen 2014

P. N. Meier, Hannover
Proktologie – Die 5 wichtigsten Publikationen 2014

I. Steinbrück, Hamburg
Enteroskopie und Kapselendoskopie –
Die 5 wichtigsten Publikationen 2014

P. Siersema

Diagnostische Endoskopie
Die 5 wichtigsten Publikationen 2014

Prof. Dr. Peter Siersema
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Diagnostische Endoskopie
Die 5 wichtigsten Publikationen 2014

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Diagnostic Endoscopy
What was hot in 2014?

University Medical Center Utrecht

- Esophagus
- Stomach
- HPB
- Colon

Overdiagnosis of BE in clinical practice

Barrett's esophagus is frequently overdiagnosed in clinical practice: results of the Barrett's Esophagus Endoscopic Revision (BEER) study

Robert A. Ganz, John I. Allen, Sam Leon, Kenneth P. Batts

Gastrointest Endosc 2014;79:565-73

Background

Published prevalence of Barrett's esophagus (BE) varies from 0.9% to 25%, in part because of differences in the endoscopic interpretation of the disease

Objective

What is the accuracy of diagnosis in 130 patients previously labeled as having BE?

Intervention

All patients underwent endoscopy+biopsy by 1 of 3 endoscopists; the video tapes/photos were also reviewed by the other 2 endoscopists

Overdiagnosis of BE in clinical practice

Results

Previous endoscopy results

Barrett's esophagus length, cm	Mean 1,82 (IQR 0-2)
Hiatal herna size, cm	Median 1

Total revised and nonrevised BE diagnosis

Revised	42/130 (32%)*#
Nonrevised	88/310 (68%)

*on 38/42 revised diagnoses all three endoscopists agreed

41/42 revised diagnoses included SSBE

Overdiagnosis of BE in clinical practice

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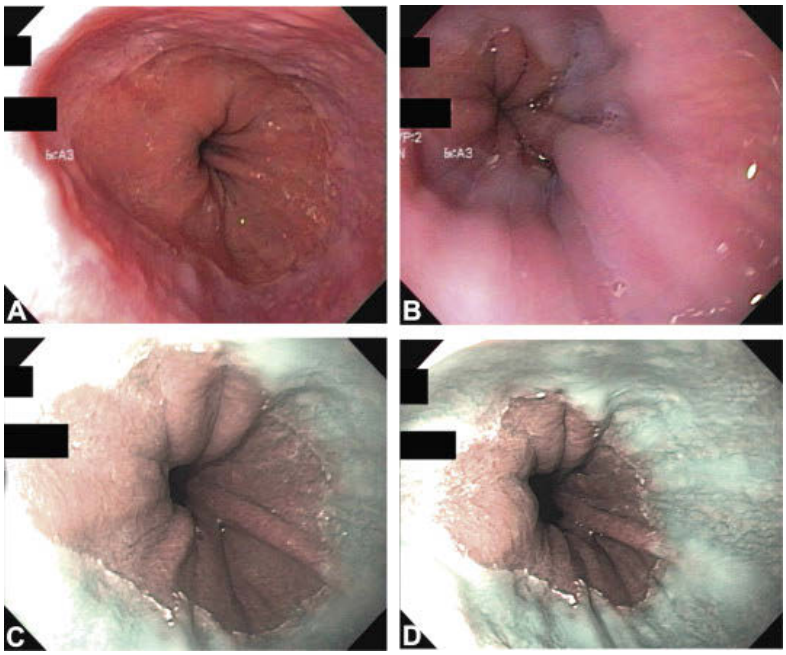
Utrecht Digestive Center

Results



Overdiagnosis of BE in clinical practice

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Results

Visible columnar-lined esophagus in 42 revised cases

No. of cases	Visible CE	Intestinal Metaplasia
5	-	+ (cardia)
18	-	-
19	+	-

Predictors of a revised dBE diagnosis

- Practice setting
- Younger age
- Female sex
- Shorter BE length
- Shorther length/ no HH

Overdiagnosis of BE in clinical practice

University Medical Center Utrecht

Utrecht digestive Center

Conclusion

- BE is overdiagnosed in clinical practice leading to increased costs, insurance issues and psychological stress
- The true BE cancer risk may also be underestimated

TAKE HOME MESSAGE

This study suggest that a diagnosis of BE can only be made with an optimal endoscopic technique (no overinsufflation!), taking into account the anatomical landmarks around the GEJ

Eosinophilic esophagitis Endoscopic findings

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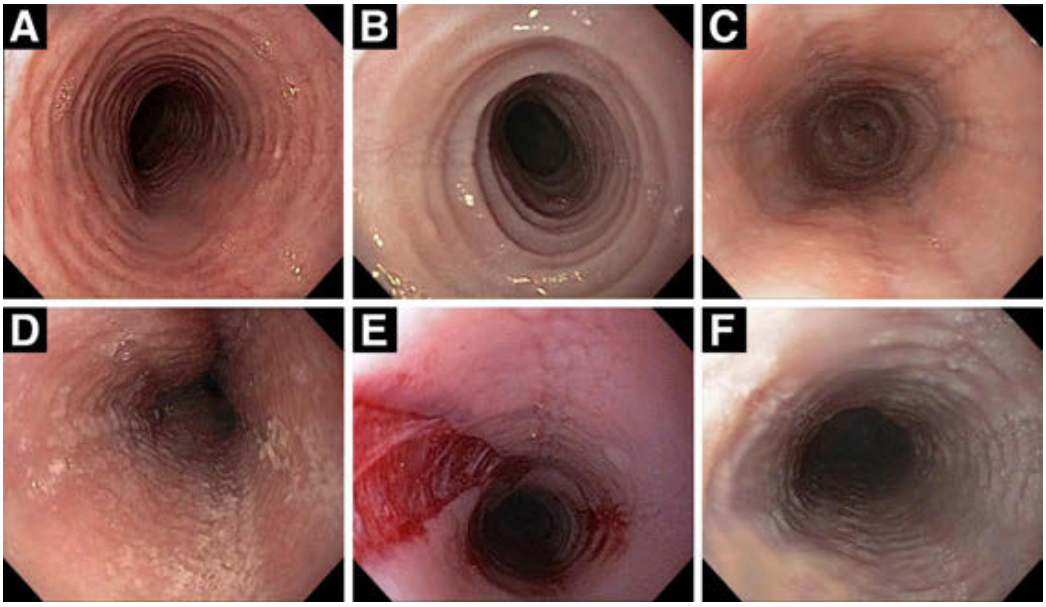


Kim et al. Clin Gastroenterol Hepatol 2012; 10: 988-96

Eosinophilic esophagitis
Endoscopic classification and grading

	Endoscopic abnormality	N (%) of pairwise agreement (N = 5250)	κ (95% CI)
R	Fixed rings		
	Raw score	2933 (56%)	0.40 (0.29 to 0.54)
	Mild/moderate collapsed	3707 (71%)	0.50 (0.35 to 0.64)
E	Exudates		
	Raw score	3396 (65%)	0.46 (0.33 to 0.58)
	Mild/severe collapsed	4006 (76%)	0.51 (0.37 to 0.67)
F	Furrows		
	Raw score	3198 (61%)	0.38 (0.28 to 0.50)
	Mild/severe collapsed	4216 (80%)	0.54 (0.37 to 0.70)
E	Oedema		
	Raw score	2682 (51%)	0.23 (0.13 to 0.35)
	Mild/severe collapsed	4278 (81%)	0.43 (0.19 to 0.59)
S	Stricture	4168 (79%)	0.52 (0.36 to 0.68)
	Feline oesophagus	3578 (68%)	0.15 (0.03 to 0.33)
	Narrow calibre oesophagus	3896 (74%)	0.30 (0.20 to 0.41)
	Crepe paper oesophagus	4852 (92%)	0.58 (0.05 to 0.77)

Hirano et al. Gut 2013; 62: 489-95

Eosinophilic esophagitis
Evaluation of EREFS system

Evaluating the Endoscopic Reference Score for eosinophilic esophagitis: moderate to substantial intra- and interobserver reliability

van Rhijn BD, Warners MJ, Curvers WL, van Lent AU, Bekkali NL, Takkenberg RB, Kloek JJ, Bergman JJ, Fockens P, Bredenoord AJ

Endoscopy 2014 Sep 10. (Epub)

Objective

To evaluate the Endoscopic Reference Score for EoE in clinical practice

Methods

- Endoscopic images from 30 EoE patients (6 in remission)
- Scored using the EREFS by 4 expert and 4 trainee endoscopists
- After 4 weeks, images rescored for intraobserver agreement

Eosinophilic esophagitis
Evaluation of EREFS system

	Before EREFS: Peery et al		Hirano et al	After EREFS: van Rhijn et al	
	Inter-observer agreement (κ)	Intra-observer agreement (κ range)	Inter-observer agreement (κ)	Inter-observer agreement (κ)	Intra-observer agreement (κ range)
Number of endoscopists	77	33	21	8	8
Endoscopic findings					
Exudates	0.29	0 – 0.8	0.46	0.63	0.53 – 0.76
Rings	0.56	0.2 – 0.9	0.40	0.70	0.29 – 0.76
Edema	--	--	0.43	0.12	-0.05 – 0.42
Furrows	0.48	0.4 – 0.9	0.54	0.49	0.35 – 0.93
Strictures	--	--	0.52	0.54	0.26 – 0.80
No findings	0.34	0 – 1.0	--	--	--

Interpretation for kappa (κ): 1.0 = perfect agreement; > 0.75 = excellent agreement; 0.40 – 0.75 = fair to good agreement; < 0.40 = poor agreement; 0 = agreement expected by chance alone [23]

Van Rhijn et al. Endoscopy 2014 (Epub)

Eosinophilic esophagitis
Evaluation of EREFS system

Conclusion

The Endoscopic Reference Score (EREFS) system provides a quantifiable way to assess the presence/absence of EoE

→ comparable with Prague classification for Barrett's esophagus

TAKE HOME MESSAGE

Intra- and interobserver agreement for a diagnosis of EoE has improved with the EREFS System, but histological confirmation of EoE is still required

EUS for remnant stones in symptomatic patients after cholecystectomy

Utility of endoscopic ultrasound to diagnose remnant stones in symptomatic patients after cholecystectomy

Mehdi Mohamadnejad, Sayed Jalal Hashemi, Farhad Zamani, Massoud Baghai-Wadji, Reza Malekzadeh, Mohamad A. Eloubeidi

Endoscopy 2014; 46: 650-5

Background

Stones in the cystic duct stump (CDS) or gallbladder remnant after cholecystectomy are difficult to identify

Objective

To evaluate EUS in the diagnosis of stones in the CDS or gallbladder remnant in patients with postcholecystectomy syndrome

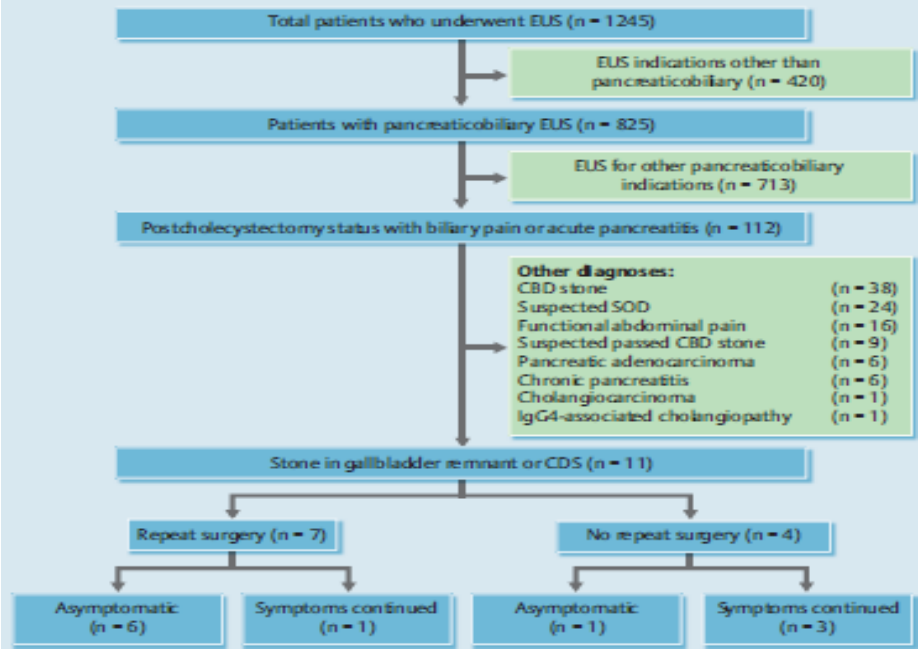
EUS for remnant stones in symptomatic patients after cholecystectomy

Methods

- Consecutive patients with pancreaticobiliary-type pain or acute pancreatitis (n=112) following cholecystectomy
- Diagnostic modalities including EUS were used to diagnose the cause of postcholecystectomy syndrome
- A final diagnosis was based on the results of clinical findings, CT scan, MRCP, EUS, liver biochemical tests, pathology results, and patient follow-up
- A tentative diagnosis of SOD was made if the patient had biliary-type abdominal pain, dilated CBD on EUS with no CBD stone

EUS for remnant stones in symptomatic patients after cholecystectomy

Results



EUS for remnant stones in symptomatic patients after cholecystectomy

Conclusion

EUS should be considered in the study of patients with symptoms after cholecystectomy, as the diagnosis or residual stones in the CDS or gallbladder remnant is frequently missed by other imaging modalities

TAKE HOME MESSAGE

Stones in the CDS or gallbladder remnant are a frequently missed cause of PCS and should be considered in patients with normal liver enzyme levels and a recent open cholecystectomy

Reassessment of the Forrest classification peptic ulcer rebleeding

University Medical Center Utrecht

Utrecht digestive Center

Reassessment of the predictive value of the Forrest classification for peptic ulcer rebleeding and mortality: can classification be simplified?

Nicolette L. de Groot, Martijn G. H. van Oijen, Koen Kessels, et al.

Endoscopy 2014; 46: 46-52

Background

- Rebleeding is a frequently observed complication of peptic ulcer bleeds
- Potential occurrence of rebleeding often prevents early discharge from the hospital

Objective

- To reassess whether the Forrest classification is still useful for the prediction of rebleeding and mortality in peptic ulcer bleedings
- Based on this, whether the classification could be simplified

Reassessment of the Forrest classification peptic ulcer rebleeding

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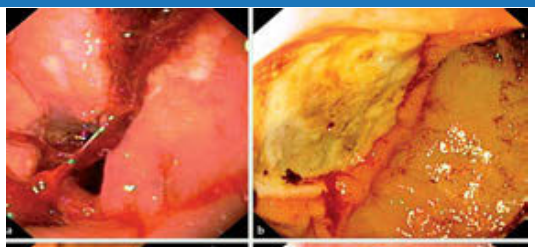
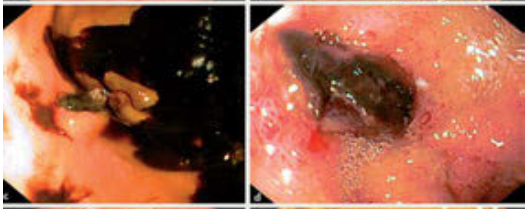
Forrest Ia:
spurting hemorrhage



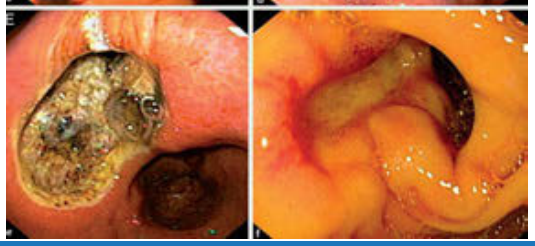
Forrest Ib:
oozing hemorrhage

Forrest IIa:
visible vessel



Forrest IIb:
Adherent clot

Forrest IIc:
hematin on ulcer base



Forrest III:
clean ulcer base

Reassessment of the Forrest classification peptic ulcer rebleeding

University Medical Center Utrecht

Utrecht digestive Center

Methods

•Prospective registry data on peptic ulcer bleedings were collected and categorized according to the Forrest classification

•Primary outcomes were 30-day rebleeding and all-cause mortality rates

•ROC curves were used to test whether simplification of the Forrest classification into:

- high risk (Forrest Ia)
- increased risk (Forrest Ib –IIc)
- low risk (Forrest III)

classes could be an alternative to the original Forrest classification

Reassessment of the Forrest classification peptic ulcer rebleeding

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Results

- In total, 397 patients with peptic ulcer bleeding were included, with:
  - Forrest Ia: 18 (4.5%)
  - Forrest Ib: 73 (18.4%)
  - Forrest IIa: 86 (21.7%)
  - Forrest IIb: 32 (8.1%)
  - Forrest IIc: 59 (14.9%)
  - Forrest III: 129 (32.5%)

- Rebleeding occurred in 74 patients (18.6%) and were highest in Forrest Ia peptic ulcers (59%)

Reassessment of the Forrest classification peptic ulcer rebleeding

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Results

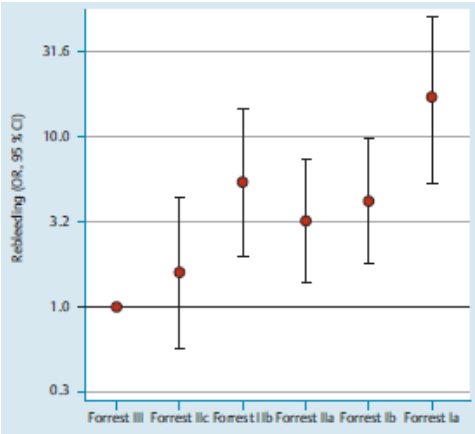

Fig. 2 Association between Forrest classification and rebleeding. OR, odds ratio; CI, confidence interval.

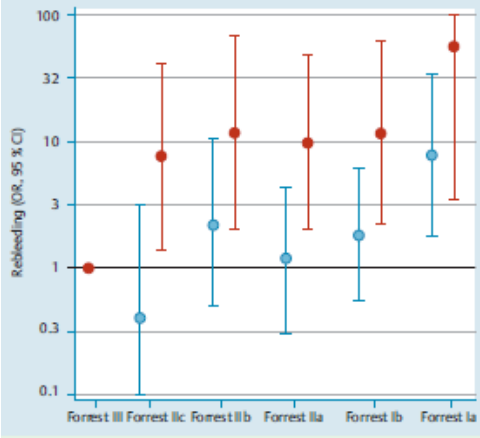

Fig. 3 Results of subgroup analysis. Association between Forrest classification and rebleeding in gastric (black stacks) and duodenal (blue stacks) ulcers. OR, odds ratio; CI, confidence interval.

Reassessment of the Forrest classification peptic ulcer rebleeding

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Results

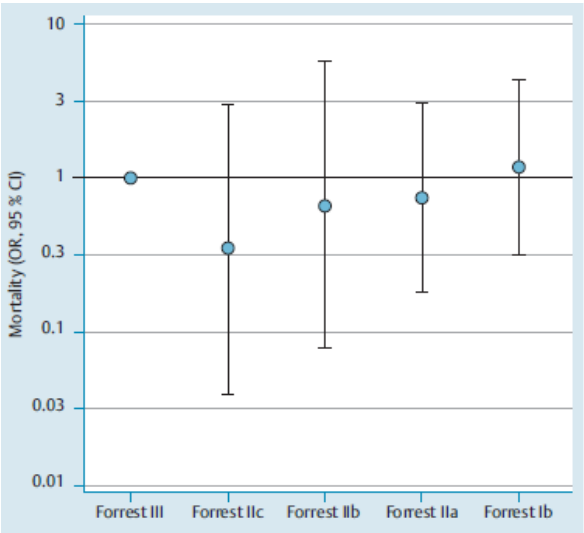

Fig. 5 Association between Forrest classification and mortality. OR, odds ratio; CI, confidence interval.

Reassessment of the Forrest classification peptic ulcer rebleeding

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Results

Risk of rebleeding	Description of ulcer (equivalent Forrest category)
Low risk	Patients with a clean ulcer base (Forrest III)
Increased risk	Patients with oozing hemorrhages or ulcers with stigmata of recent hemorrhage (Forrest IIc–Ib)
High risk	Patients with spurting hemorrhages (Forrest Ia)

The simplified Forrest classification had similar test characteristics to the original Forrest classification

Reassessment of the Forrest classification peptic ulcer rebleeding

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CONCLUSION

- The Forrest classification is still clinically useful to identify patients at an increased risk of rebleeding, with the highest prognostic significance for gastric ulcers.
- Reclassifying and simplifying the Forrest classification into low risk (Forrest III), increased risk (Forrest Ib –IIc) and high risk (Forrest Ia ulcers) of rebleeding is possible

TAKE HOME MESSAGE

Peptic ulcer bleeds should be classified according the (simplified) Forrest classification as it helps in predicting which patients can be discharged early from the hospital

ADR and risk of CRC and death

University Medical Center Utrecht

N= 314,872 colonoscopies by 136 colonoscopists

Kaiser Permanente Northern California database (3.3 million people)

712 interval cancers:

- 255 advanced-stage cancers
- 147 deaths from interval CRCs

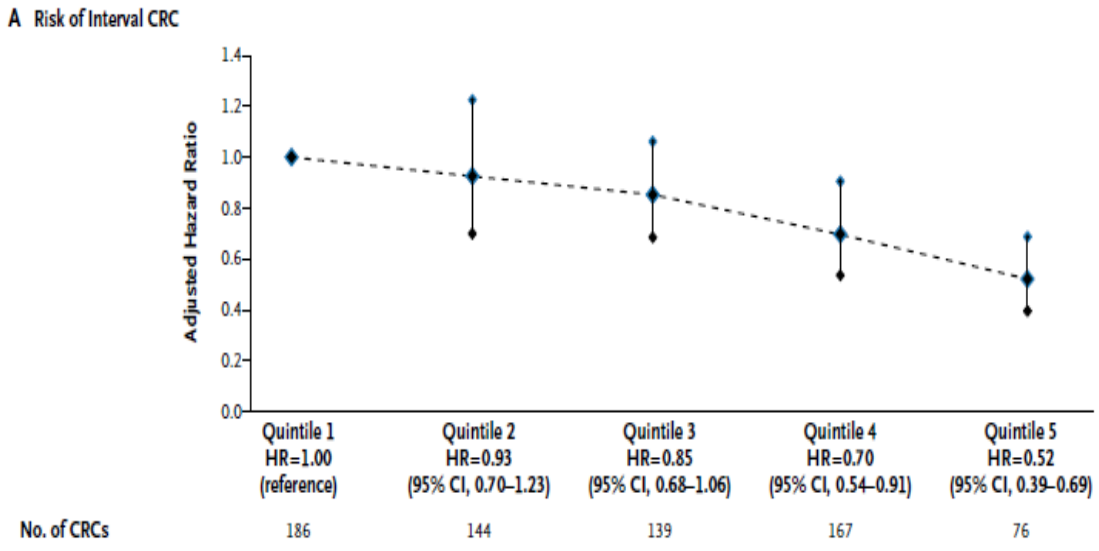
ADR quintiles

- Q1: 16.56% (7.35-19.05%)
- Q2: 21.50% (19.06-23.85%
- Q3: 25.70% (23.86-28.40%)
- Q4: 30.96% (28.41-33.50%)
- Q5: 38.86% (33.51-52.51%)

Corley et al. New Engl J Med 2013

ADR and risk of CRC and death

University Medical Center Utrecht



Corley et al. New Engl J Med 2013

New developments

University Medical Center Utrecht

EndoCuff

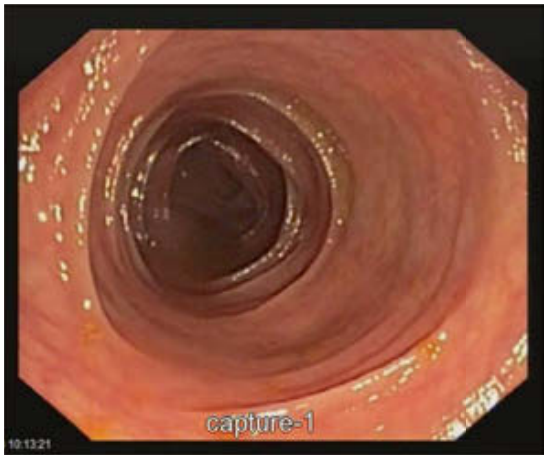
New developments

University Medical Center Utrecht

G-Eye

New developments

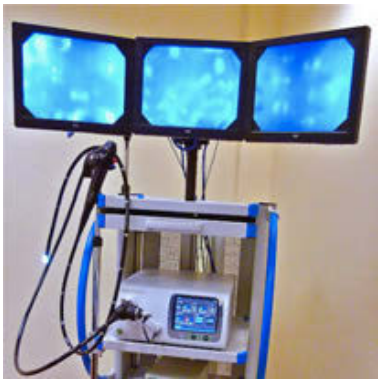
University Medical Center Utrecht



EndoRings

New developments

University Medical Center Utrecht



Full Spectrum Endoscopy FUSE colonoscopy

Standard forward-viewing colonoscopy versus full-spectrum endoscopy: an international, multicentre, randomised, tandem colonoscopy trial

Ian M Gralnek*, Peter D Siersema*, Zamir Halpern, Ori Segol, Alaa Melhem, Alain Suissa, Erwin Santo, Alan Sloyer, Jay Fenster, Leon M G Moons, Vincent K Dik, Ralph B D'Agostino Jr, Douglas K Rex

Lancet Oncol 2014; 15: 353–60

Summary

Background Although colonoscopy is the accepted standard for detection of colorectal adenomas and cancers, many adenomas and some cancers are missed. To avoid interval colorectal cancer, the adenoma miss rate of colonoscopy needs to be reduced by improvement of colonoscopy technique and imaging capability. We aimed to compare the adenoma miss rates of full-spectrum endoscopy colonoscopy with those of standard forward-viewing colonoscopy.

Methods We did an international, multicentre, randomised trial at three sites in Israel, one site in the Netherlands, and two sites in the USA between Feb 1, 2012, and March 31, 2013. Patients aged 18–70 years referred for colorectal cancer screening, polyp surveillance, or diagnostic assessment underwent same-day, back-to-back tandem colonoscopy with standard forward-viewing colonoscope and the full-spectrum endoscopy colonoscope. The patients were randomly assigned (1:1), via computer-generated randomisation with block size of 20, to which procedure was done first. The endoscopist was masked to group allocation until immediately before the start of colonoscopy examinations; patients were not masked. The primary endpoint was adenoma miss rates. We did per-protocol analyses. This trial is registered with ClinicalTrials.gov, number NCT01549535.

Findings 197 participants were enrolled. 185 participants were included in the per-protocol analyses: 88 (48%) were randomly assigned to receive standard forward-viewing colonoscopy first, and 97 (52%) to receive full-spectrum endoscopy colonoscopy first. By per-lesion analysis, the adenoma miss rate was significantly lower in patients in the full-spectrum endoscopy group than in those in the standard forward-viewing procedure group: five (7%) of 67 *vs* 20 (41%) of 49 adenomas were missed (p<0·0001). Standard forward-viewing colonoscopy missed 20 adenomas in 15 patients; of those, three (15%) were advanced adenomas. Full-spectrum endoscopy missed five adenomas in five patients in whom an adenoma had already been detected with first-pass standard forward-viewing colonoscopy; none of these missed adenomas were advanced. One patient was admitted to hospital for

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See Online/Comment
http://dx.doi.org/10.1016/S1470-2045(14)70065-8

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Study Aims

University Medical Center Utrecht

1. Primary: Adenoma Miss Rates

2. Secondary:
   - Polyp Miss Rates
   - Advanced Adenoma Miss Rates
   - Time to Cecal Intubation
   - Colonoscope Withdrawal Time
   - Adverse Events

Study Design

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Randomized (concealed allocation)

- Tandem colonoscopy design
- Same day, back-to-back, by the same endoscopist
- 170º SFV vs. Fuse 330º

All polyps removed when identified

- Except hyperplastic rectal polyps (1mm-2mm)
- All adenomas and cancers confirmed by pathology

Multicenter

- Israel (3) Netherlands (1) USA (2)
- February 1, 2012 – March 31, 2013

Subject Demographics

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- **Mean age 55.8 ± 9.7 years**
- **101 female (54.6%) / 84 male (45.4%)**
- **Baseline characteristics**
  - Age, gender, reason for colonoscopy were similar
- **Indications for colonoscopy**
  - CRC screening = 103 (55.7%)
  - Polyp surveillance = 36 (19.5%)
  - Diagnostic evaluation = 46 (24.8%)

Procedure Times Comparable

University Medical Center Utrecht

	Time to Cecum (median time)	Withdrawal Time (median time)
SFV Colonoscopy	5.1 minutes	5.6 minutes
Fuse™ Colonoscopy	4.8 minutes	6.2 minutes
	p=NS	p<0.0001

Fuse™ Study Conclusions

University Medical Center Utrecht

FUSE colonoscopy

- found an additional **69%** more adenomas after SFV
- had a significantly lower adenoma miss rate **(7%)** compared to SFV **(41%)**
- Fuse had no negative colonoscopies; whereas, **6%** of patients with SFV first had a false negative colonoscopy.
- Fuse shortened the interval recommendations in **53%** of the exams where SFV colonoscopy failed to identify all polyps present in **9%** of total patient population.

Diagnostic Endoscopy 2014 Conclusions

Diagnostic Endoscopy 2014 Conclusions

D. Hartmann

ERCP
Die 5 wichtigsten Publikationen 2014

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ERCP:
Die 5 wichtigsten Publikationen 2014

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RFA VS. PDT

Sana Klinikum Lichtenberg

1 CHOLANGIOZELLULÄRES KARZINOM RFA VS. PDT

- 2 randomisierte Studien zur photodynamischen Therapie (PDT) bei nicht resezierbarem CCC
- Vergleich PDT plus Stenting versus Stenting alleine

Autor	n	Sensitizer	Überleben		p-Wert
			PDT + Stenting	Stenting	
Ortner 2003	39	Photofrin	16,5 Monate	3,5 Monate	<0,0001
Zöpf 2005	32	Photosan-3	21 Monate	7 Monate	<0,01

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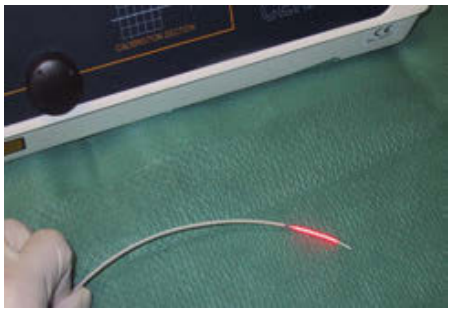
Ortner et al., Gastroenterology 2003
Zöpf et al., Am J Gastroenterol 2005

1 CHOLANGIOZELLULÄRES KARZINOM RFA VS. PDT

Nachteile der PDT

- ✓ Vermeidung von Sonnenlicht für 4-6 Wochen
- ✓ sehr aufwendige Endoskopie
- ✓ Applikation des Sensitizers 48h vorher notwendig
- ✓ Hohe Kosten für den Photosensitizer und das Equipment



Vorteile RFA

- ✓ einfache Handhabung
- ✓ Einbringen über Draht
- ✓ Betrieb mit konventionellem HF-Generator

Sana Klinikum Lichtenberg

1 CHOLANGIOZELLULÄRES KARZINOM RFA VS. PDT

ORIGINAL ARTICLE: Clinical Endoscopy

ERCP-directed radiofrequency ablation and photodynamic therapy are associated with comparable survival in the treatment of unresectable cholangiocarcinoma

Daniel S. Strand, MD,[1] Natalie D. Cosgrove, MD,[1] James T. Patrie, MS,[2] Dawn G. Cox, RN,[1] Todd W. Bauer, MD,[3] Reid B. Adams, MD,[3] James A. Mann, MD,[1] Bryan G. Sauer, MD, MSc,[1] Vanessa M. Shami, MD, FASGE,[1] Andrew Y. Wang, MD, FASGE[1]

Charlottesville, Virginia, USA

- retrospektive Kohorten Studie
- keine Randomisierung
- vergleichbare Gruppen

Sana Klinikum Lichtenberg

Strand et al., Gastrointest Endosc 2014

1 CHOLANGIOZELLULÄRES KARZINOM RFA VS. PDT

TABLE 1. Baseline characteristics of patients with unresectable cholangiocarcinomas

Characteristic	RFA (n = 16)	PDT (n = 32)	*P* value
Demographic			
Age, y, mean (SD); median (interquartile range)	64.3 (11.9); 64.0 (55.5-71.5)	69.5 (13.6); 73.0 (64.8-79.0)	.098
Sex, male, no. (%)	10 (62.5)	19 (59.4)	1.000
Tumor location (includes all cancers by AJCC classification), no. (%)			
Intrahepatic/proximal	1 (6.2)	0 (0)	.333
Hilar	13 (81.2)	32 (100)	.032
Extrahepatic/distal	2 (12.5)	0 (0)	.106
Bismuth-Corlette classification (includes only perihilar cancers), no. (%)			
Bismuth I	1 (6.2)	1 (3.1)	1.000
Bismuth II	0 (0)	0 (0)	1.000
Bismuth IIIa or IIIb	5 (31.5)	11 (34.4)	1.000
Bismuth IV	7 (43.7)	20 (62.5)	.355
Initial AJCC staging, no. (%)			
N1	7 (43.7)	12 (37.5)	.759
M1	6 (37.5)	6 (18.7)	.178
Chemoradiation therapy, no. (%)	7 (43.7)	20 (62.5)	.289

RFA, Radiofrequency ablation; *PDT*, photodynamic therapy; *SD*, standard deviation; *AJCC*, American Joint Committee on Cancer.

Sana Klinikum Lichtenberg

Strand et al., Gastrointest Endosc 2014

1 CHOLANGIOZELLULÄRES KARZINOM RFA VS. PDT

TABLE 1. Baseline characteristics of patients with unresectable cholangiocarcinomas

Characteristic	RFA (n = 16)	PDT (n = 32)	P value
Demographic			
Initial AJCC staging, no. (%)			
N1	7 (43.7)	12 (37.5)	
M1	6 (37.5)	6 (18.7)	
Extrahepatic/distal	2 (12.5)	0 (0)	.106
Bismuth-Corlette classification (includes only per			
Bismuth IV	7 (43.7)	20 (62.5)	.355
Initial AJCC staging, no. (%)			
N1	7 (43.7)	12 (37.5)	.759
M1	6 (37.5)	6 (18.7)	.178
Chemoradiation therapy, no. (%)	7 (43.7)	20 (62.5)	.289

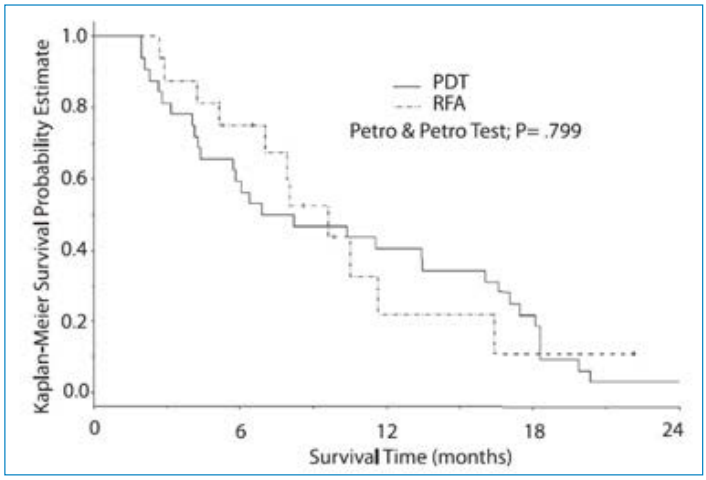
RFA, Radiofrequency ablation; *PDT*, photodynamic therapy; *SD*, standard deviation; *AJCC*, American Joint Committee on Cancer.

Gruppe RFA: 13/16 (81%) mit Metastasen
Gruppe PDT: 18/32 (56%) mit Metastasen

Sana Klinikum Lichtenberg

Strand et al., Gastrointest Endosc 2014

1 CHOLANGIOZELLULÄRES KARZINOM RFA VS. PDT



Überleben

PDT-Gruppe
7,5 Monate

RFA-Gruppe
9,6 Monate

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Strand et al., Gastrointest Endosc 2014

1 CHOLANGIOZELLULÄRES KARZINOM RFA VS. PDT

! **RFA bei CCC ist technisch machbar (einfache Handhabung)**

! **RFA scheint vergleichbar mit PDT in Bezug auf das Überleben**

! **Aktuell keine randomisierten Studien**

Sana Klinikum Lichtenberg

BENIGNE STRIKTUREN

Sana Klinikum Lichtenberg

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

Benigne Gallengangstenosen:

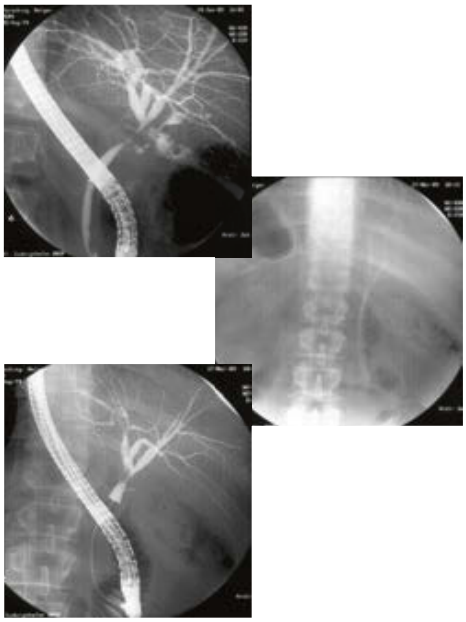
- ✓ Chronsiche Pankreatitis: 10-30%
- ✓ Lebertransplantation: 4-9%
- ✓ Postoperativ: 0,3 bis 0,4%

Endoskopische Therapie:

- ✓ Plastikstents in aufsteigender Anzahl
- ✓ Wechsel alle 3 Monate
- ✓ Therapie über 1 Jahr

Therapiealternativen:

- ✓ voll gecoverter SEMS
- ✓ bisher nur wenige Daten



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2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

Gastroenterology 2014;147:385–395

CLINICAL—BILIARY

Successful Management of Benign Biliary Strictures With Fully Covered Self-Expanding Metal Stents

Jacques Devière,[1] D. Nageshwar Reddy,[2] Andreas Püspök,[3] Thierry Ponchon,[4] Marco J. Bruno,[5] Michael J. Bourke,[6] Horst Neuhaus,[7] André Roy,[8] Ferrán González-Huix Lladó,[9] Alan N. Barkun,[10] Paul P. Kortan,[11] Claudio Navarrete,[12] Joyce Peetermans,[13] Daniel Blero,[1] Sundeep Lakhtakia,[2] Werner Dolak,[3] Vincent Lepilliez,[4] Jan W. Poley,[5] Andrea Tringali,[14] and Guido Costamagna,[14] for the Benign Biliary Stenoses Working Group

- ✓ Prospektve Studie
- ✓ 13 Institutionen aus 11 Ländern
- ✓ Entfernung FCSEMS nach 10-12 Monate bei chronischer Pankreatitis bzw. postoperativ
- ✓ Entfernung FCSEMS nach 4-6 Monate bei Patienten nach OLT

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Deviere et al., Gastroenterology 2014

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

Primärer Endpunkt:

✓ Erfolgreiche Stententfernung („Removal Success“) definiert als:

- *termingerechte Stententfernung ohne Komplikationen*
  oder
- *spontane Stentpassage ohne die Notwendigkeit eines sofortigen Re-Stentings*

Sekundäre Endpunkte:

✓ Erfolgreiche Behandlung der Stenose (mittl. Follow-up 19 Monate)

✓ Stenoserezidiv

✓ Komplikationen durch den Stent oder die Entfernung

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Deviere et al., Gastroenterology 2014

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

187 Patienten eingeschlossen
chronische Pankreatitis (CP): 127
Lebertransplantation (OLT):42
Postoperativ (CCY): 18

10 x keine Stententfernung
Tod aus anderer Ursache: 8
Palliation bei Malignität: 1
Keine Einverständnis: 1

177 Patienten
Indikation zur Stententfernung
(geplante Stententfernung)

Erfolgreiche Stententfernung („removal success“)

alle:	**132/177 (74,6%)**
CP:	95/127 (80,5%)
OLT:	25/42 (63,4%)
CCY:	11/18 (61,1%)

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Deviere et al., Gastroenterology 2014

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

Und die anderen 45/177 Patienten……??

✓ Frühe endoskopische Entfernung wegen Komplikationen: n=25

Cholangitits: *14*
Cholestase: *3*
Cholecysitits: *1*
Andere: *7*

✓ Lost of Follow-up: n=5

✓ Komplette Stentmigration: n=16

ohne Notwendigkeit des Re-Stentings: *8 („removal success“)*
mit Notwendigkeit des Re-Stentings: *8*

✓ SAE nach Stententfernung: n=7

Cholangitits: *5*
Blutung: *1*
Pankreatitis: *1*

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Deviere et al., Gastroenterology 2014

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

Stentmigration

- Gesamt: 55 Patienten
- komplett: 16 Patienten
- partiell distal: 20 Patienten
- partiell proximal: 19 Patienten

Stententfernung

- beim ersten Versuch: 149/155 Patienten
- beim zweiten oder dritten Versuch: 6/155 Patienten
  Stent in Stent Technik: *3/6 Patienten*

Bei allen Patienten konnte der Stent wieder entfernt werden, überwiegend problemlos und einfach.

Sana Klinikum Lichtenberg

Deviere et al., Gastroenterology 2014

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

Type	Group, n (%)[a]			
	CP (n = 127)	OLT (n = 42)	CCY (n = 18)	Total (n = 187)
Cholangitis/fever	11 (8.7)	10 (23.8)	5 (27.8)	26 (13.9)
Abdominal pain	6 (4.7)	4 (9.5)	0 (0.0)	10 (5.3)
Pancreatitis	4 (3.1)	0 (0.0)	1 (5.6)	5 (2.7)
Cholecystitis	3 (3.0)[b]	0 (0.0)	0 (0.0)	3 (3.0)[b]
Cholestasis	2 (1.6)	1 (2.4)	0 (0.0)	3 (1.6)
Other[c]	6 (4.7)	2 (4.8)	1 (5.6)	9 (4.8)
Total[d]	28 (22.0)	16 (38.1)	7 (38.9)	51 (27.3)

- ✓ Cholangitis ist die häufigste Komplikation (13,9%)
- ✓ Pankreatitis und Cholecystitis selten (2,7% und 3,0%)

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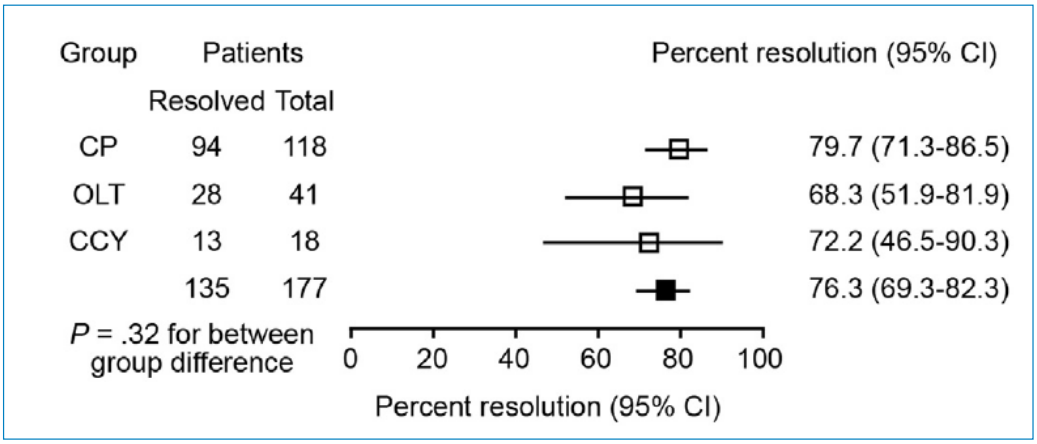
Deviere et al., Gastroenterology 2014

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

Erfolgreiche Therapie mit FCSEMS



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Deviere et al., Gastroenterology 2014

2 BENIGNE GALLENGANGSTENOSEN FULLY COVERED SEMS

! **FCSEMS bei benignen Stenosen sind sicher und effektiv.**

! **Die Entfernung des Stents ist quasi immer möglich.**

! **Bei chronischer Pankreatitis scheinen FCSEMS dem Multistenting überlegen.**

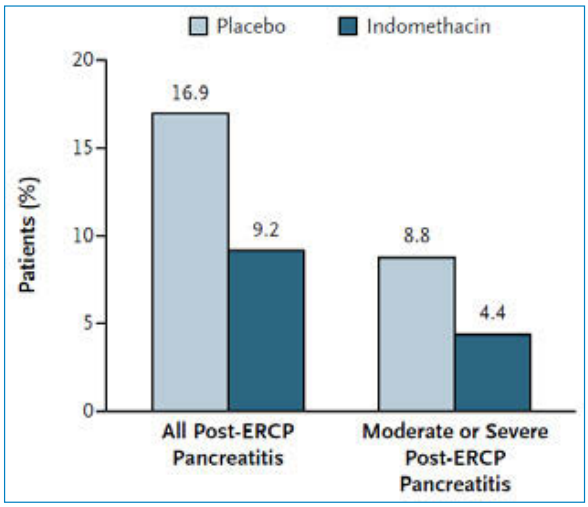
Sana Klinikum Lichtenberg

POST-ERCP PANKREATITIS

Sana Klinikum Lichtenberg

3 POST-ERCP PANKREATITIS INDOMETHACIN

- Randomisierte, Placebo-kontrollierte Studie zum Einsatz von 100 mg Indomethacin rektal zur Vermeidung einer Post-ERCP Pankreatitis (n=602)



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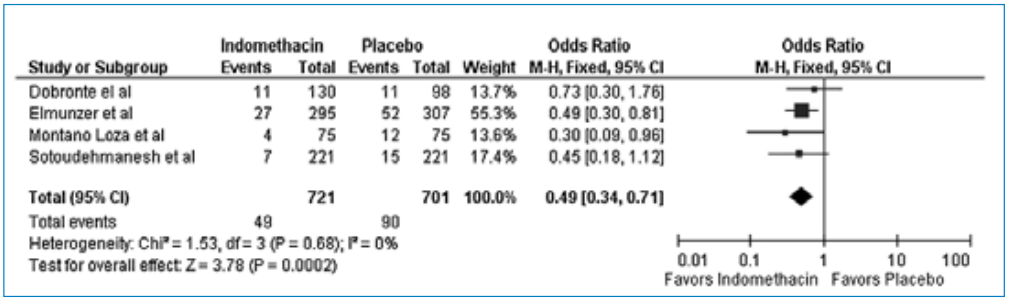
Elmunzer et al., N Engl J Med 2012

3 POST-ERCP PANKREATITIS INDOMETHACIN

- Metaanalyse zum Einsatz von Indomethacin zur Vermeidung der Post-ERCP Pankreatitis



ESGE-Guideline: Prophylaxis of post-ERCP pancreatitis: Update 2014

ESGE recommends routine rectal administration of 100 mg of diclofenac or Indomethacin immediately before or after ERCP in all patients without contraindication (Recommendation grade A)

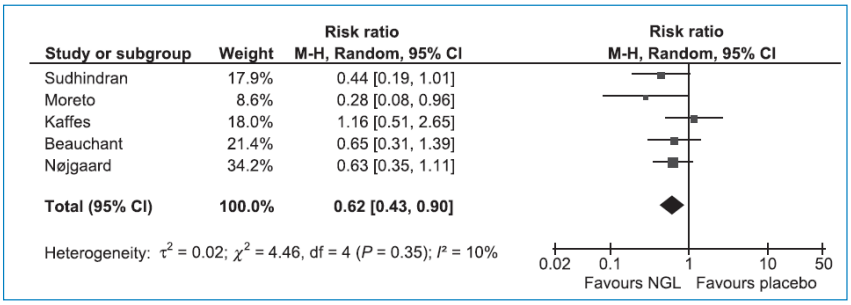
Dumonceau et al., Endoscopy 2014

Sana Klinikum Lichtenberg

Ahmad et al., Pancreas 2014

3 POST-ERCP PANKREATITIS NITRATE

- Metaanalyse zum Einsatz von Nitroglycerin zur Vermeidung der Post-ERCP Pankreatitis (1662 Patienten)



Vorteil nur bei sublingualer nicht bei transdermaler Applikation

ESGE-Guideline: Prophylaxis of post-ERCP pancreatitis: Update 2014

Nitroglycerin may be effective in preventing PEP when administered sublingually. ESGE does not recommend the routine use of GTN for PEP prophylaxis.

Dumonceau et al., Endoscopy 2014

Sana Klinikum Lichtenberg

Bang et al., Aliment Pharmacol Ther 2009

3 POST-ERCP PANKREATITIS INDOMETHACIN PLUS NITRAT

A Randomized Trial of Rectal Indomethacin and Sublingual Nitrates to Prevent Post-ERCP Pancreatitis

Rasoul Sotoudehmanesh, MD[1], Mohamad Ali Eloubeidi, MD, MHS[2], Ali Ali Asgari, MD[1], Maryam Farsinejad, MD[1] and Morteza Khatibian, MD[1]

- ✓ 300 Patienten (150 Patienten in jeder Gruppe)
- ✓ Gruppe A: 100 mg Indomethacin rektal plus 5 mg Isosobiddinitrat sublingual
- ✓ Gruppe B: 100 mg Indomethacin plus Placebo
- ✓ Applikation 5 Minuten vor der ERCP

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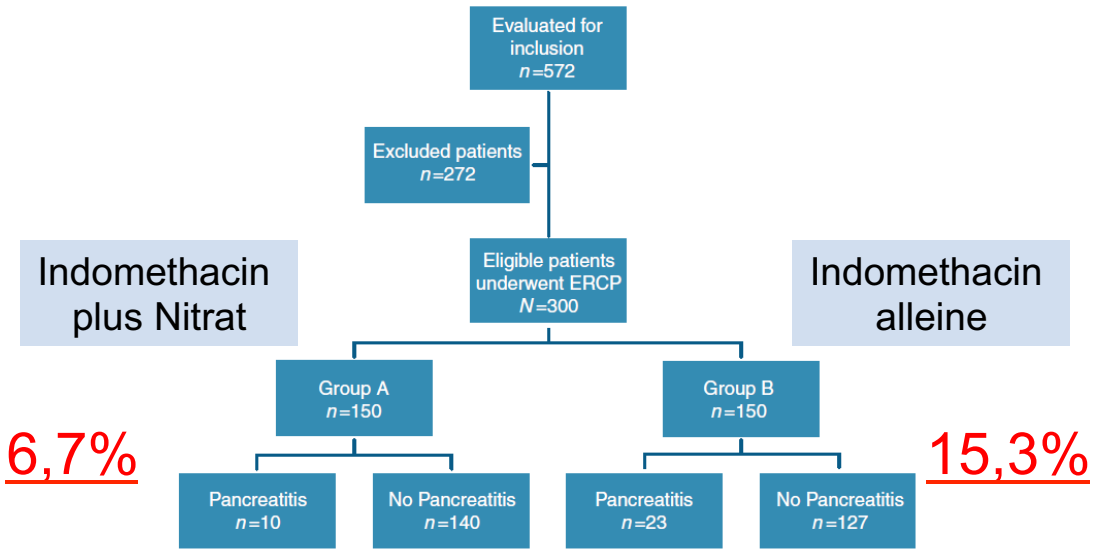
Sotoudehmanesh et al., Am J Gastroenterol 2014

3 POST-ERCP PANKREATITIS INDOMETHACIN PLUS NITRAT



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Sotoudehmanesh et al., Am J Gastroenterol 2014

3 POST-ERCP PANKREATITIS INDOMETHACIN PLUS NITRAT

! **Indomethacin oder Diclofenac sind der medikamentöse Standard zur Prophylaxe der Post-ERCP Pankreatitis**

! **Nitrate wirksam, jedoch nicht generell empfohlen (ESGE Guideline 2014)**

! **Kombination scheint der alleinigen Gabe von Indomethacin überlegen. Muticenterstudien erwartet.**

Sana Klinikum Lichtenberg

4 POST-ERCP PANKREATITIS FRÜHE ERCP PLUS PROTHESE

Urgent ERCP with pancreatic stent placement or replacement for salvage of post-ERCP pancreatitis

Authors: Tossapol Kerdsirichairat[1], Rajeev Attam[1], Mustafa Arain[1], Yan Bakman[1], David Radosevich[2], Martin Freeman[1]

Institutions: [1] Division of Gastroenterology, Department of Medicine, University of Minnesota, Minneapolis, Minnesota, United States
[2] Department of Surgery, University of Minnesota, Minneapolis, Minnesota, USA

Frage: Beeinflusst eine frühe ERCP mit Neuimplantation einer Pankreasprothese oder Wiedereinlage einer dislozierten Prothese den Verlauf einer Post-ERCP Pankreatitis ?

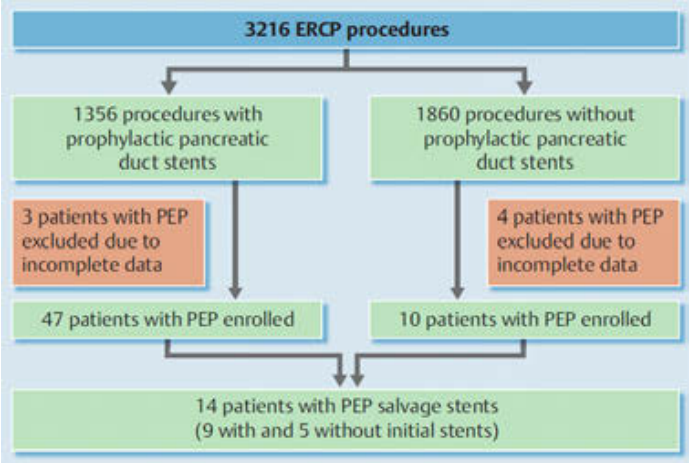
Sana Klinikum Lichtenberg

Kerdsirichairat et al., Endoscopy 2014

4 POST-ERCP PANKREATITIS FRÜHE ERCP PLUS PROTHESE

Frühe ERCP bei

- **bei Patienten ohne erfolgte Stentprophylaxe:**
  starke Schmerzen (8-10/10) + SIRS + Lipaseerhöhung
- **bei Patienten mit erfolgter Stentprohylaxe**
  starke Schmerzen (8-10/10) + SIRS + Lipaseerhöhung + Stentdislokation



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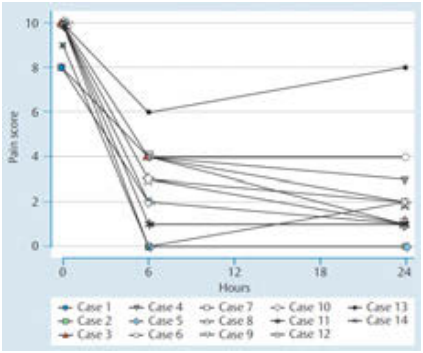
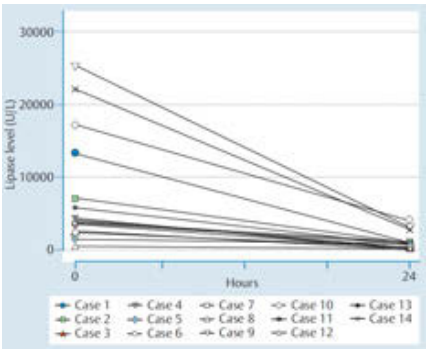
4 POST-ERCP PANKREATITIS FRÜHE ERCP PLUS PROTHESE

Schmerzen



Lipase



- ✓ SIRS innerhalb von 24 Stunden nicht mehr nachweisbar
- ✓ Mittl. KH-Aufenthalt von 2 Tagen (1-4,75 Tage)
- ✓ 5/14 Patienten konnten nach 24 h entlassen werden

Sana Klinikum Lichtenberg

Kerdsirichairat et al., Endoscopy 2014

4 POST-ERCP PANKREATITIS FRÜHE ERCP PLUS PROTHESE

! Frühe ERCP bei PEP: Neue Option, keine Empfehlung

! Problem der Studie: Natürlicher Verlauf unklar. Keine Vergleichsgruppe.

! Was passiert, wenn Zugang zum Pankreasgang nicht gelingt? Verschlechterung der Situation?

Sana Klinikum Lichtenberg

5 SPHINCTER ODDI DYSFUNKTION ENDOSKOPISCHE SPHINKTEROTOMIE

USA:

- ✓ 700.000 Cholecystektomien / Jahr
- ✓ 10% Schmerzen nach Cholecystektomie
  - *oft unklare Ursache*
  - *häufig ERCP mit Sphinkterotomie in der Hoffnung auf Besserung*

  ⟶ Komplikationen in 10 bis 15% (häufig PEP)

	Typ I	Typ II	Typ III
Biliärer Schmerz	+	+	+
Enzymerhöhung	+	(+)	-
Erweiterter DHC	+	(+)	-

(+) fakultativ vorhanden (mindestens 1 von 2)

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X SPHINCTER ODDI DYSFUNKTION ENDOSKOPISCHE SPHINKTEROTOMIE

Original Investigation

Effect of Endoscopic Sphincterotomy for Suspected Sphincter of Oddi Dysfunction on Pain-Related Disability Following Cholecystectomy

The EPISOD Randomized Clinical Trial

Peter B. Cotton, MD, FRCP, FRCS; Valerie Durkalski, PhD; Joseph Romagnuolo, MD; Qi Pauls, MS; Evan Fogel, MD; Paul Tarnasky, MD; Giuseppe Aliperti, MD; Martin Freeman, MD; Richard Kozarek, MD; Priya Jamidar, MD; Mel Wilcox, MD; Jose Serrano, MD, PhD; Olga Brawman-Mintzer, MD; Grace Elta, MD; Patrick Mauldin, PhD; Andre Thornhill; Robert Hawes, MD; April Wood-Williams; Kyle Orrell; Douglas Drossman, MD; Patricia Robuck, PhD

- > 3 Monate Schmerzen nach CHE
- keine Pankreatitisanamnese (Bildgebung und Labor)
- keine Sphinkterintervention in der Vergangenheit
- unauffällige ÖGD
- normal weiter Gallengang (<9mm)
- Keine signifikanten Laborveränderungen

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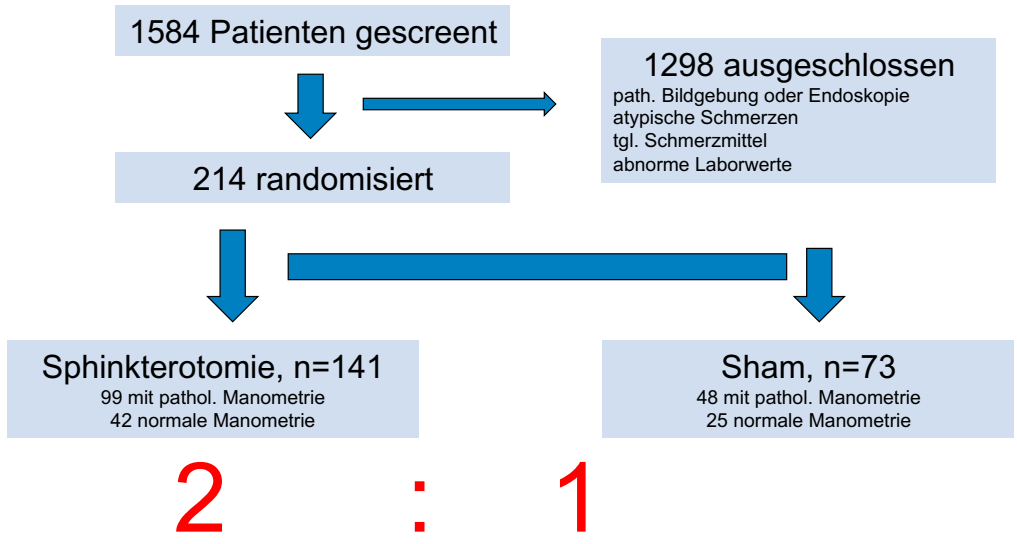
Cotton et al., JAMA 2014

5 SPHINCTER ODDI DYSFUNKTION ENDOSKOPISCHE SPHINKTEROTOMIE



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Cotton et al., JAMA 2014

5 SPHINCTER ODDI DYSFUNKTION ENDOSKOPISCHE SPHINKTEROTOMIE

Definition Therapieerfolg (primärer Endpunkt)

- ✓ RAPID Score < 6 Tage Verlust der Produktivität in Monat 9 und 12
- ✓ Keine weitere Intervention
- ✓ Keine Schmerzmittel zu Monat 10,11 und 12

RAPID Score:

Recurrent abdominal pain intensity and disability

1 On how many days in the last 3 mo did you miss work or school because of your episodes of abdominal pain? ____ days
2 On how many days in the last 3 mo did you miss work or school because of your episodes of abdominal pain (Do not include days you counted in question 1 where you missed work or school.)? ____ days
3 On how many days in the last 3 mo did you not do household work because of your episodes of abdominal pain? ____ days
4 On how many days in the last 3 mo was your productivity in household work reduced by half or more because of your episodes of abdominal pain (Do not include days you counted in question 1 where you did not do household work.)? ____ days
5 On how many days in the last 3 mo did you miss family, social or leisure activities because of your episodes of abdominal pain? ____ days
6 On how many days in the last 3 mo did you have episodes of abdominal pain (If the abdominal pain lasted more than 1 d, count each day.)? ____ days
7 On a scale of 0-10, on average, how painful were these episodes of abdominal pain? ____

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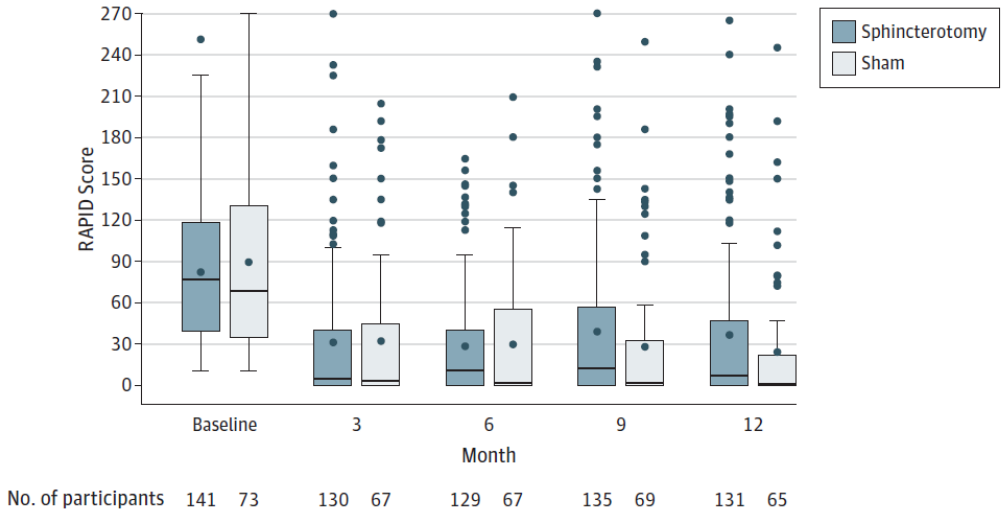
5 SPHINCTER ODDI DYSFUNKTION ENDOSKOPISCHE SPHINKTEROTOMIE



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Cotton et al., JAMA 2014

5 SPHINCTER ODDI DYSFUNKTION ENDOSKOPISCHE SPHINKTEROTOMIE

Therapie	n	Therapieerfolg
Sham	73	27 (37%)
Sphinkterotomie	141	32 (23%)

Manometrie Gallengang	Manometrie Pankreas	Sphinkterotomie Therapieerfolg	Sham Therapieerfolg
pathol.	pathol.	27% (14/52)	38% (8/21)
normal	pathol.	21% (9/42)	36% (8/22)
pathol.	normal	18% (3/16)	11% (1/9)
normal	normal	19 %(6/31)	48% (10/21)

Sana Klinikum Lichtenberg

Cotton et al., JAMA 2014

5 SPHINCTER ODDI DYSFUNKTION ENDOSKOPISCHE SPHINKTEROTOMIE

! **Kein Nutzen der Sphinkterotomie bei Patienten mit SOD Typ III im Vergleich zur Sham-Gruppe**

! **Manometrie hilft nicht um Subgruppen zu identifizieren, die ggf. von einer EST profitieren.**

! **“These findings do not support ERCP and sphincterotomy for these patients”**

Sana Klinikum Lichtenberg

VIELEN DANK

Sana Klinikum Lichtenberg

J. Hochberger

Technische Innovationen und neue Produkte in der Endoskopie

Prof. Dr. Jürgen Hochberger
Chairman of Gastroenterology and GI Endoscopy
Strasbourg University Hospitals – Nouvel Hôpital Civil and IHU
Strasbourg/Frankreich

Technical Innovations and Treatment Modalities in Endoscopy

Juergen Hochberger, M.D. PhD, Univ. Hospital Strasbourg – NHC and IHU, Strasbourg, France

In the talk new different devices and techniques will be highlighted. Among other devices and techniques foci will be put on endoscopic treatment of morbid obesity and new resection and ablation devices.

Endoscopic Treatment of Morbid Obesity

Morbid obesity represents an increasing problem in the Western World. Obesity is classified according to the body mass index weight (kg) / height (m^2) into the following categories: Acceptable Range 18.5–24.9 kg/m^2; Overweight 25–29.9 kg/m^2; Obese 30–34.9 kg/m^2; Severe Obesity 35–39.9 kg/m^2; Morbid Obesity 40–49.9 kg/m^2; Super-Morbid Obesity 50 +++ kg/m^2. In 2002 34% of the 15 year old boys and 20 % of the 15 year old girls had overweight according to the American Center of Disease Control (CDC). The percentage of obese people with an BMI of greater than 30 ranges in Europe between 15-28% and is suspected to raise to 19-35% in 2020 and to 23-43% in 2030.

Concerning treatment of morbid obesity ‘conservative measures’ show only a limited effect. Diet plus exercise lead to weight loss of 5-7%. Adding behavioral therapy may achieve a weight loss of 8-10%. Pharmacotherapy such as inhibitors of intestinal fat absorption, appetite suppressants and agonists of the endo-cannabinoid system may add another 5-8%. However, the mid- and longterm effect of these measures is often very limited. ‘Bariatric’ surgery as specific term for surgery in morbid obesity is currently the only therapeutic measure with a proven profund longterm effect. Restrictive surgical procedures include: ‘Vertical Banded Gastroplasty’ (VBG), ‘Adjustable Gastric Band’ (AGB) and ‘Sleeve Gastrectomy’ (SG). Restrictive surgery for obesity leading to malabsorption include ‘Bilio-pancreatic Diversion’ (BPD), ‚Duodenal Switch' (DS) and ‚Roux-en-Y Gastric Bypass’ (RYGB). Longterm studies up to 15 years could prove a reduction in weight loss of 15-30% for gastric banding procedures or gastric bypass compared to control subjects. A second positive effect of bariatric surgery is a significant improvement in a diabetes type 2 often associated with morbid obesity within a metabolic syndrome.

Within the last 10 years different endoscopic procedures have tried to mimic these effects. They include balloons, barriers, sleeves and restrictive endoscopic interventional procedures. Some of those tools for a primary intervention include intragastric balloons (Allergan, Spatz-FGIA Inc, Helioscopie), the RESTORe Suturing System (C.R. Bard Inc), the TOGa Stapler device (Satiety Inc) the TERIS system (Barosense) or the Incisionless Operating Platform (USGI Medical Inc) to be used

to mimic e.g. a vertical band gastroplasty. Bypass Liners (GI Dynamics, ValenTx) cover part of the proximal small intestine ± stomach with an impermeable flouropolymer sheath to induce malabsorption. The AspireAssist system (Aspire Bariatrics, Inc., King of Prussia, USA) works by aspirating predigested food from the stomach.

Of the different techniques applied and devices used only limited clinical series have been published and longterm outcomes are often lacking so far. Different of the devices and procedures such as the TOGA system have disappeared already from the market in the meantime. While a initial echoes where rather enthusiastic midterm or longterm results were rather disappointing. Suturing devices have been used to reduce the lumen and e.g. simulate a vertical band gastroplasty. New devices such as the G-prox or the Overstich device were used to achieve transmural suturing. However, those stiches could often not resists mechanical forces due to increased food intake when patients fell back into former eating behaviors. This is the reason why current endoscopic attempts often try to induce an initial clinical weight loss in combination with behavioral therapy in order to induce a first step toward a change in the life habits. Especially for super-obese patients endoscopic 'first-line' treatment may reduce the operative risk of a secondary more definitive surgical procedure. Some easy to apply systems not changing the GI anatomy include balloons, the AspireAssist and the EndoBarrier Liner. New concepts include the Factyl system for superficial coagulation of the duodenal and upper jejunal mucosa to induce malabsorption and intestinal endocrine changes.

A first generation of balloons like the 'Garren-Edwards Gastric Bubble (GEGB)' dates back to more than 15 years. However, technical problems included a rupture of the balloon and secondary intestinal obstruction but especially a rapid regain in weight after removal of the balloon. 10 years later a second generation like the BioEnterics Intragastric Balloon (BIB; Allergan, Irvine, CA, USA) show a clearly reduced risk profile and studies have demonstrated a significant weight loss in the short-term and mid-term ranges. However, long-term weight loss following balloon removal, has again been equivocal.

The 'AspireAssist' is a new gastric aspiration tube. A type of large gastric (PEG) feeding tube is placed under endoscopic control and aseptical conditions. In the following the patient is taught to meticulously chew all food until it becomes an almost liquid mash. This way the patient spends as a first effect more time for the meal, eats more consciously and has an earlier saturation effect. Directly after finishing the meal the patient aspirates the food through the AspireAssist tube from the stomach in order to reduce the quantity of food being digested. Limited patient series e.g. from the Czech Republic are promising.

The duodeno-jejunal Bypass-Liner (DJBS; Endobarrier; GI Dynamics, Watertown, MA, USA) uses a

malabsorption principle of the upper small intestine which leads secondarily to important GI peptide changes such as a reduced level of hormones like 'ghrelin' which play an important metabolic role in morbid obesity. A nitinol anchor placed at the level of the duodenal bulb holds a 60 cm long, thin fluoropolymer sleeve impermeable for nutritional content. As with the other procedures described a positive effect on weight loss can be observed in the order of 15-25% within the first 6 month in patients tolerating the devices (80-90%). However, this reduction in weight is reversible in a major part of patients on the longterm run. However, a secondary important effect on a type2-diabetes often insulin-resistant can often be observed already the first days after implantation of the devices / beginning of treatment.

To summarize first results of these new endoscopic treatment modalities are promising. However, their place in the multi-disciplinary treatment of morbid obesity is still not clear yet. An important role may be a reduction of the pre-operative risk of super-obese or multi-morbid obese patients. This includes the improvement of an often treatment-resistant accompanying diabetes. Further comparative multicentric studies have to be awaited. The different systems and working mechanisms will be presented.

New resection and ablation techniques

Different devices and products have recently been presented. Full thickness resection is now possible using the new FTRD device (Ovesco Tübingen). An over-the-scope-clip (OTSC) is used in combination with an embedded snare. First a full-thickness capture of the intestinal wall is induced by the OTSC and secondarily an artificial 'mushroom' is created by preferably pulling the future resection specimen into the distal transparent cylinder by a grasper or anchor. Preliminary results by Caca and Bauernfeind are promising. The device could be a perspective for colonic recurrences after piecemeal resection on a scar or full thickness resection of small submucosal tumors in the colo-rectum such as hind gut carcinoids. Limitations may be the current restriction to the lower GI tract and the impossibility of passage to cranial lesions in case of a narrow sigmoid.

The combination of a central high-pressure capillary for submucosal saline injection and a conventional argon plasma coagulation probe have recently been presented by Pech, Manner, Ell and co-workers and will be shortly described.

New applications for fluid supported resection devices include POEM or small intestinal ESD. Dissectors, graspers vices or resection forceps have recently been propagated for applications in different areas of the GI tract. Clinical examples in the esophagus and colo-rectum using e.g. the

Clutch Cutter (Fujifilm, Düsseldorf) are shown.

Perspectives

Finally new perspectives in flexible endoscopy such as new imaging and recognition systems for prior lesions or biopsies as well as perspectives on new manipulators allowing surgery-like traction for endoscopic resections in the rectum such as the Anubis System (Storz, Tuttlingen) and a tele-robotic version of this endoscope will be presented.

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Sicherheit in der Endoskopie

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Kantonsspital St. Gallen
St. Gallen/Schweiz

endo-update® 2014

Sicherheit in der Endoskopie

www.meldeportal.ch

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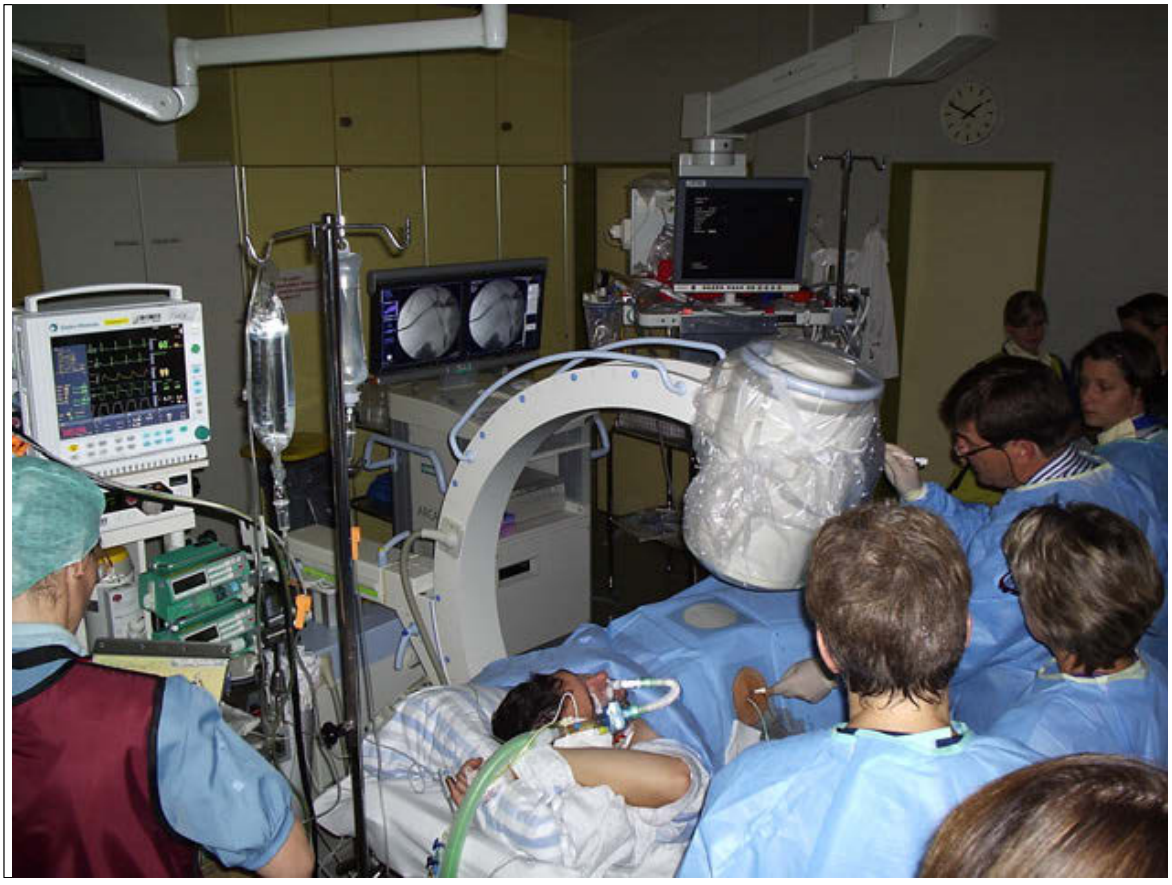
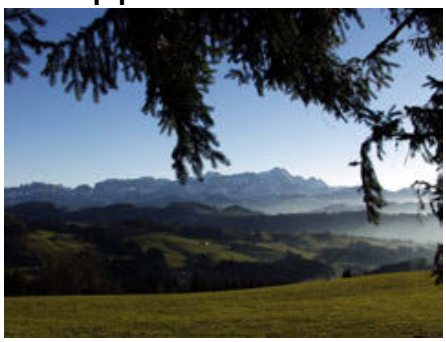
Kantonsspital St.Gallen – ein Unternehmen, drei Spitäler St.Gallen Rorschach Flawil

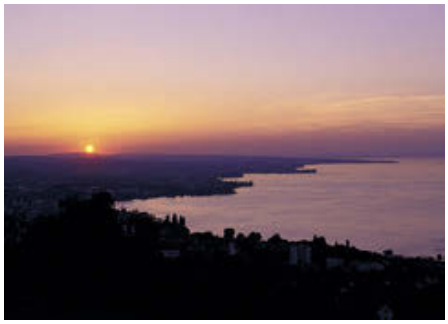


St.Gallen

Appenzellerland



Bodensee

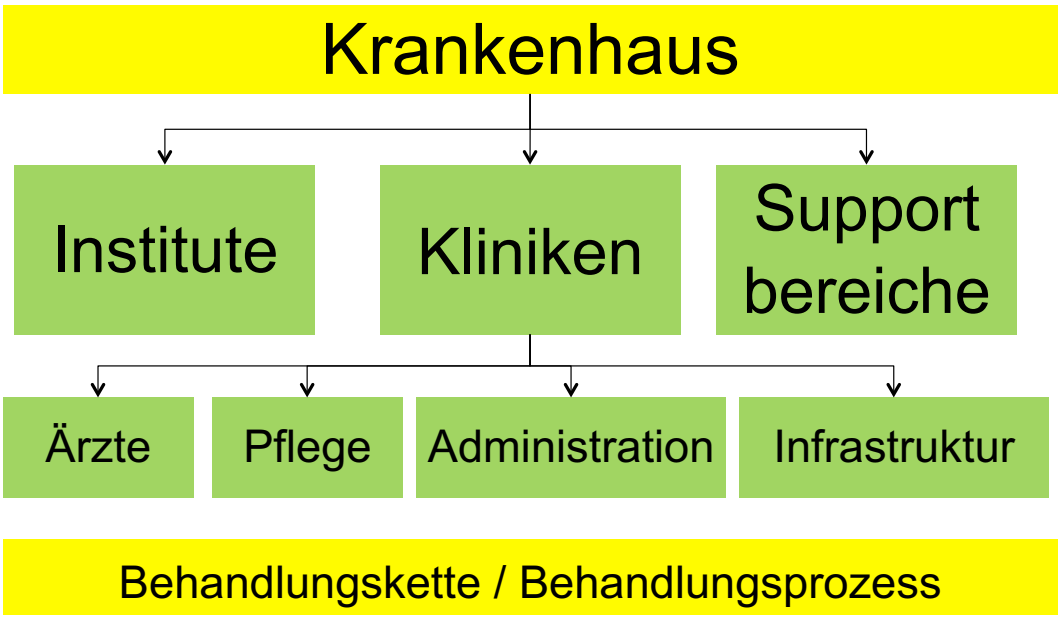


Kantonsspital St.Gallen – ein Unternehmen, drei Spitäler

900 Betten
4300 Mitarbeitende

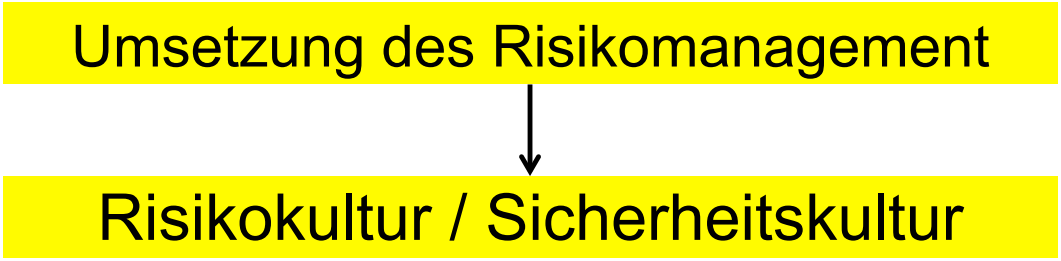
40`000 stationäre Patienten
760 Mio CHF Ertrag

Qualitätsmanagement: Risikomanagement

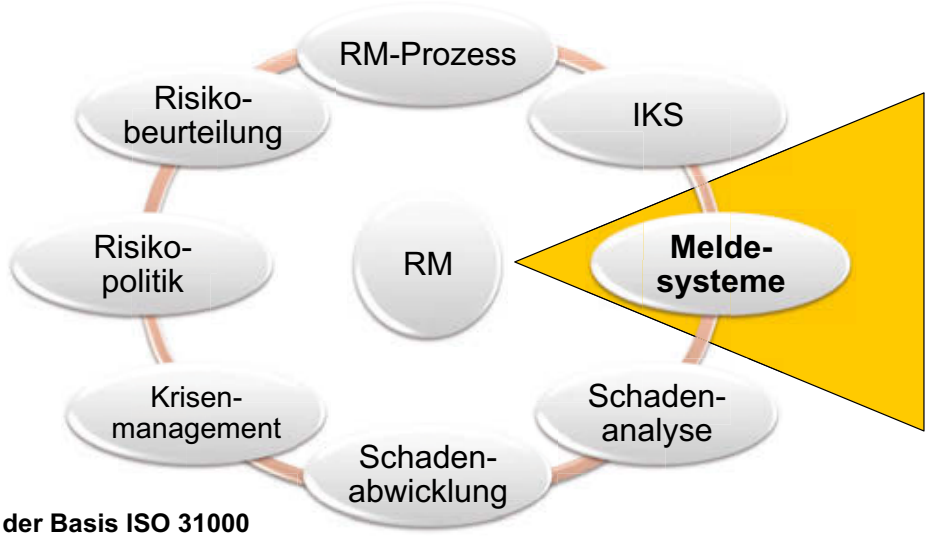


Klinisches Risikomanagement

Prozesse und Verhaltensweisen, die darauf ausgerichtet sind, eine Organisation bezüglich **medizinisch/pflegerische** Patienten-Risiken zu steuern.

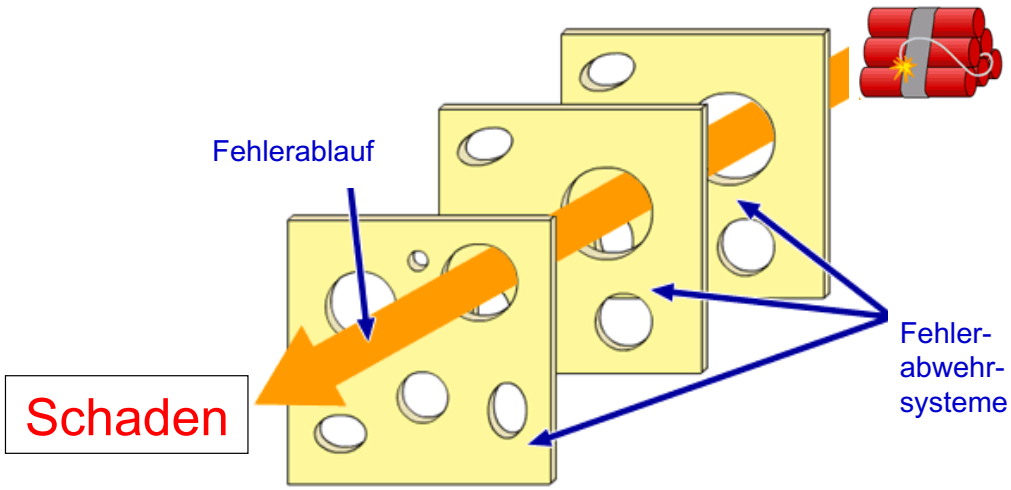


Meldesysteme sind der Einstiegspunkt für ein umfassendes Risikomanagement

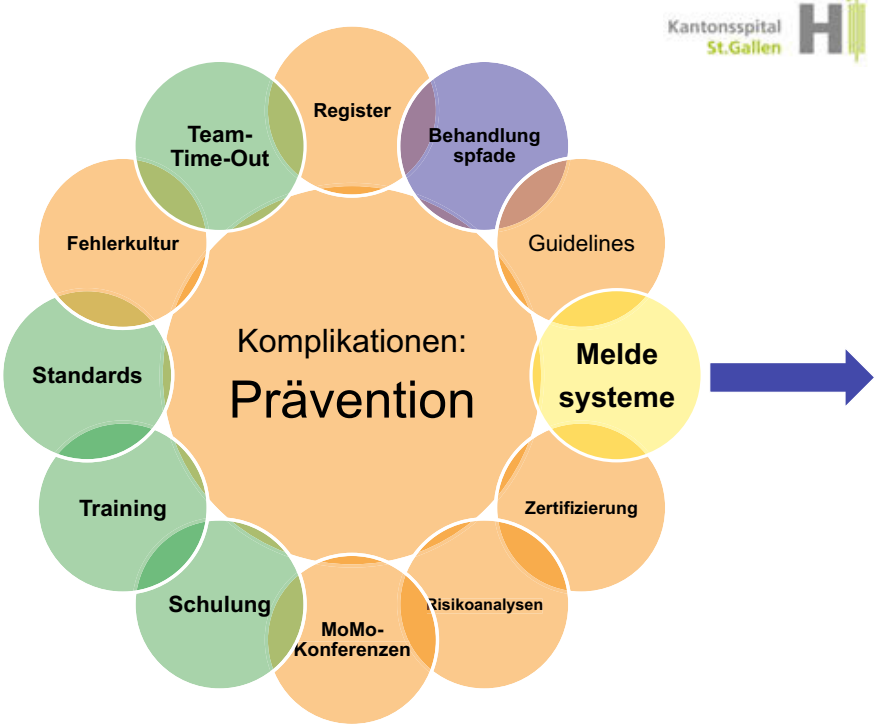


Auf der Basis ISO 31000 Risikomanagement

Schweizer Käsemodell der Systemfehler



J. Reason 1991



St.Galler CIRS:
Critical Incident Reporting System
Critical Incident = Kritischer Zwischenfall

Definition: Ein kritischer Zwischenfall ist ein Ereignis, das den Patienten gefährden kann, aber nicht schädigt.
„Near misses“

Ein kritischer Zwischenfall ist ein vermeidbares Ereignis

Konsequent keine Schäden, sondern nur Gefährdungen melden

Institute of Medicine, Linda T Kohn et al.: To err is human, 2000, p87

St. Galler CIRS: 9 Kernmerkmale

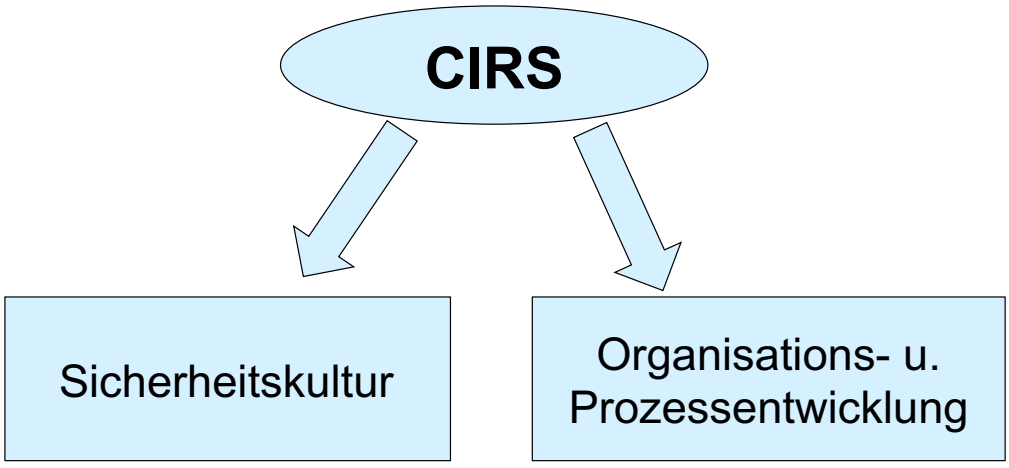
Kantonsspital St.Gallen

Keine Schäden melden	Anonymität wahren	Interprofessionalität Interdisziplinarität fördern
Kurzes CIRS-Meldeformular	Leadership in Sicherheitskultur	Meldekreise einführen
CIRS-Fall-Besprechungen durchführen	Daten-und Informationspolitik festlegen	CIRS-Verantwortliche einsetzen

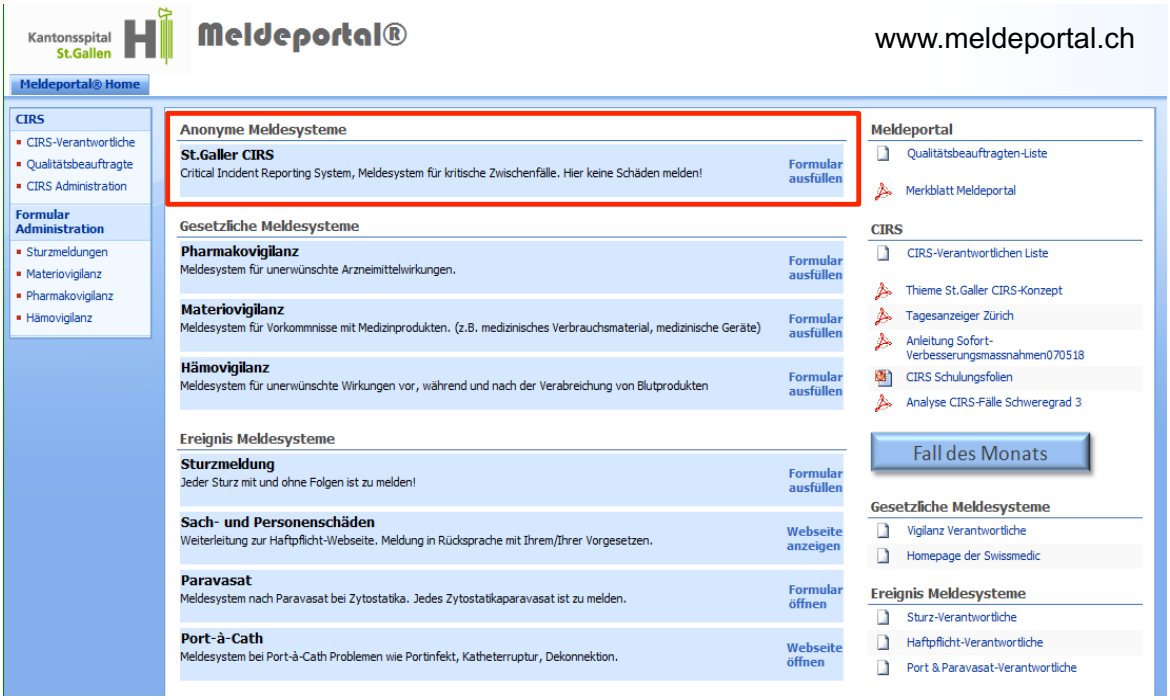
Thieme Fachzeitschrift: **Gesundheitsökonomie & Qualitätsmanagement**, Gesundh ökon Qual manag 2005; 10: 83-89; Rose, N.; Germann, D.: Resultate eines krankenhausweiten Critical Incident Reporting System (CIRS)

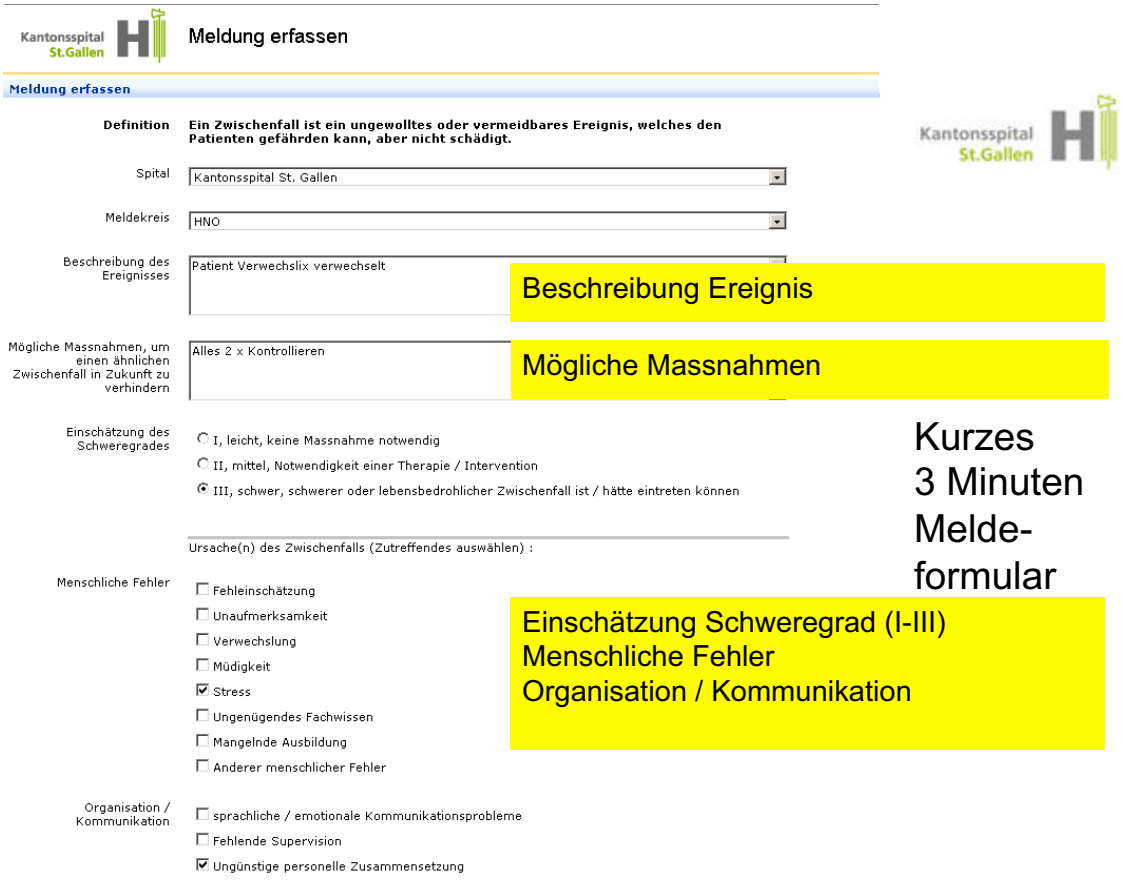
Ergebnis eines CIRS

Kantonsspital St.Gallen



Meldesystem in einem Portal: web basiert





Kantonsspital St.Gallen

Meldung erfassen

Meldung erfassen

Definition	**Ein Zwischenfall ist ein ungewolltes oder vermeidbares Ereignis, welches den Patienten gefährden kann, aber nicht schädigt.**
Spital	Kantonsspital St. Gallen
Meldekreis	HNO
Beschreibung des Ereignisses	Patient Verwechslix verwechselt
Mögliche Massnahmen, um einen ähnlichen Zwischenfall in Zukunft zu	Alles 2 x Kontrollieren

Kantonsspital St.Gallen

Meldung anonymisieren, Original löschen

Melde-formular

○ II, mittel, Notwendigkeit einer Therapie / Intervention

◉ III, schwer, schwerer oder lebensbedrohlicher Zwischenfall ist / hätte eintreten können

Ursache(n) des Zwischenfalls (Zutreffendes auswählen) :

Menschliche Fehler

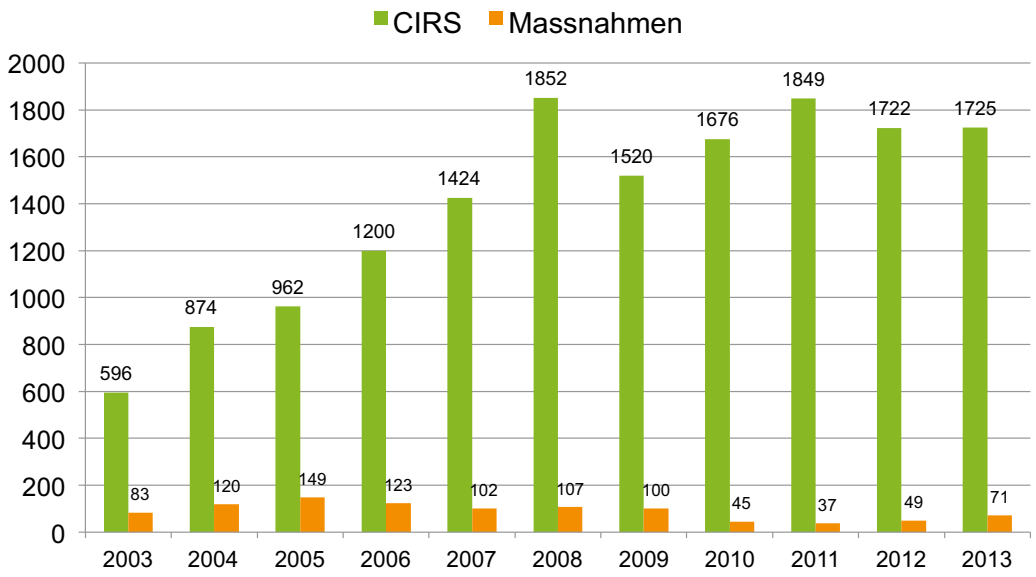
- ☐ Fehleinschätzung
- ☐ Unaufmerksamkeit
- ☐ Verwechslung
- ☐ Müdigkeit
- ☑ Stress
- ☐ Ungenügendes Fachwissen
- ☐ Mangelnde Ausbildung
- ☐ Anderer menschlicher Fehler

Organisation / Kommunikation

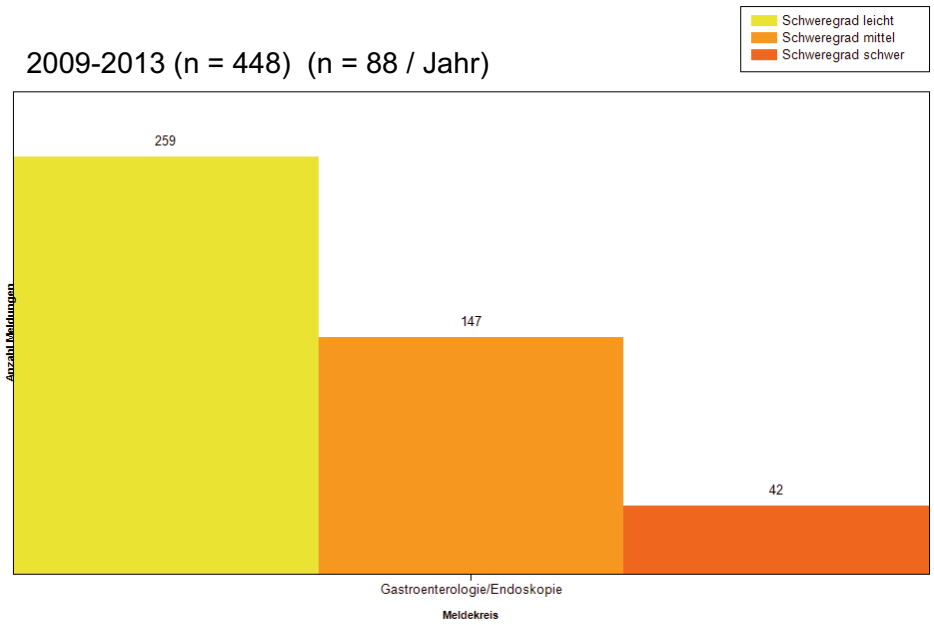
- ☐ sprachliche / emotionale Kommunikationsprobleme
- ☐ Fehlende Supervision
- ☑ Ungünstige personelle Zusammensetzung

CIRS-Jahresstatistik Kantonsspital SG

Kantonsspital St.Gallen



Gastroenterologie: CIRS-Schweregrad



Klinik für Gastroenterologie / Hepatologie Sicherheit in der Endoskopie

CIRS in der Endoskopie

- Administration und Organisation
- Präinterventionelle Massnahmen
- Aufklärung
- Sedation
- Behandlung
- Postinterventionelle Nachsorge
- Material, Medikamente und Infrastruktur

Kantonsspital St.Gallen – ein Unternehmen, drei Spitäler: St.Gallen Rorschach Flawil

CIRS: Administration / Organisation

Kantonsspital St.Gallen

Datenqualität

- **Stammdaten im KIS falsch ausgewählt**.
- **Verwechslungen: Patientendaten, Akten, Zuweiser** (Spitäler, Ärzte)
  Ein normaler Bürger hat Arztbericht erhalten!
- Auf Überwachungsblatt fehlt Patientenetikette
- **Laboranalysen für falschen Patienten verordnet** (von Hand)
- Krankengeschichte und Pflegedokumentation auf falsches Patientenbett deponiert
- Hausarzt fordert Labor an. Werte werden an eine Papeterie gefaxt.
- Akten von verschiedenen Patienten verhaken sich in Dossiers mit Büroklammern
- Verstorbener Patient wird aufgeboten, da Aufgebot in falsche Akte abgelegt wurde

Massnahmen

Kantonsspital St.Gallen

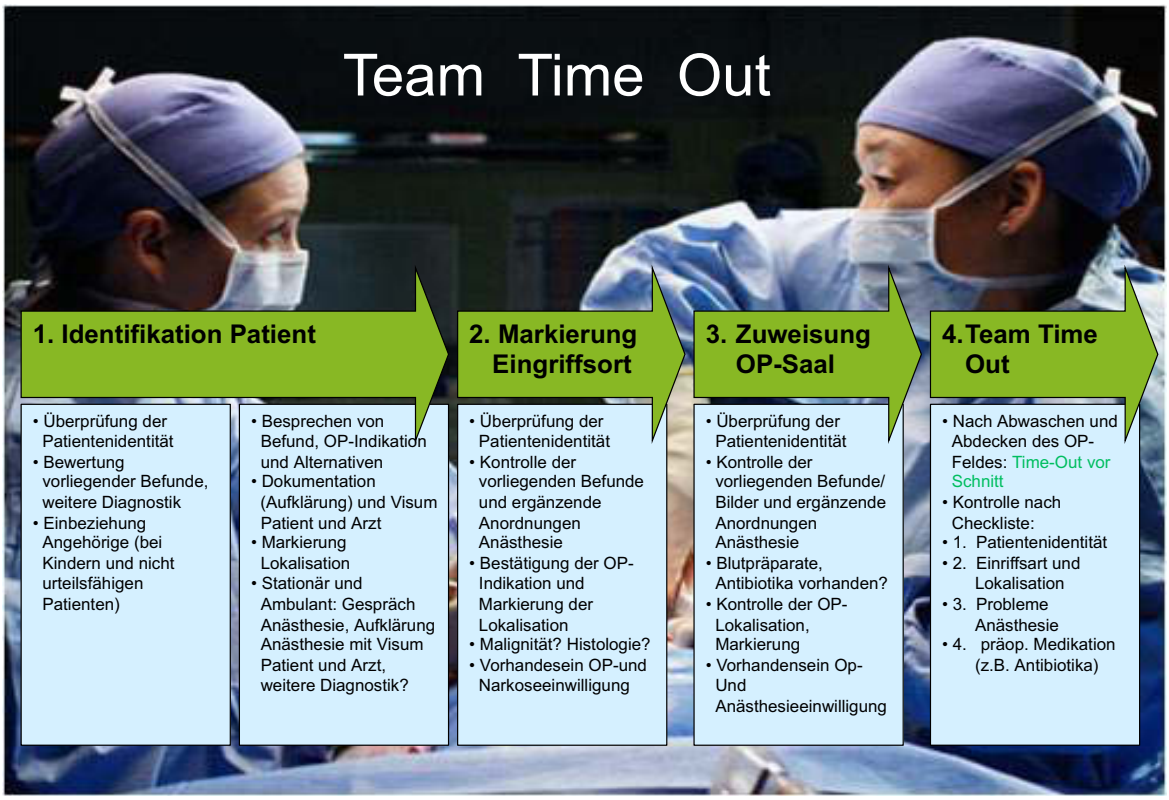
- Einführung **«Patientenarmbänder»:** Alle Patienten erhalten ein Armband mit allen erforderlichen Patientendaten.
- Einführung **«Team-Time-Out»:**
  Patientenidentifikation mit „double-check“: Name, Geburtsdatum, Adresse, Adressat und Befragung des Patienten.
- Patientenidentifikation (Formulare / Probenmaterial):
  Doppelvisum Arzt / Pflege
- **Laborverordnungen elektronisch**
- Akten: **Büroklammern werden verboten** und Akten werden Geheftet und / oder in Mappen deponiert.
- Todesfälle werden spitalweit gemeldet und Akten gekennzeichnet

CIRS: Patientenbetreuung

- Patient musste im Gang auf Endoskopie warten. Hatte keine Glocke um sich für einen Toilettengang zu melden.
- **Flächendeckendes Alarmsystem im Wartebereich fehlt** (keine «Holding Area)
- **Patient wartet im Gang auf auswärtigen Transport. Er fällt von der Liege und verletzt sich.**
- Patient wird nach ÖGD abgeholt. 60mg Disoprivan erhalten, hustend… Keine Schwester auffindbar, kein Rapport. BD 77/45 Sättigung 87%.
- **Patient kommt nicht nüchtern** zur PEG-Einlage und erbricht schwallartig! **Weisungen für Vorbereitung missachtet**
- PEG-Einlage bei Pat. mit HNO-Tumor: akute Dyspnoe. **Fehleinschätzung der Risikosituation**

Massnahmen

- Alarmanlage in allen Untersuchungsräumen und Wartezonen (**mobiler Alarm**). Schulung **aller** Personen.
- Alle Betten und Liegen werden vor dem Transport in die Endoskopie mit **Bettgittern** ausgerüstet. Reservegitter sind in der Endoskopie gelagert.
- **Seitenstützen an der Untersuchungsliege** werden nach jedem Eingriff durch den **Arzt** hochgeklappt.
- PEG bei HNO- und ALS-Patienten: Interdisziplinärer Standard / **Anästhesie für Risikopatienten**
- Aspirationsgefahr (Stenosen etc.): Kopftieflage
- Patientenübergabe: durch diplomierte Pflege oder Arzt
- Vier-Augen-Prinzip
- **Regelmässiges REA-Training** / Materialkunde
- **Regelmässiger Check der Basisinfrastruktur in der Endoskopie**



Klinik für Gastroenterologie / Hepatologie Sicherheit in der Endoskopie

Team Time Out

Einführung und Umsetzung in allen operativen und interventionellen Bereichen:Gastro, Kardio, Pneumo, Radiolgie

Haynes A.B.et al.: A Surgical Safety Checklist Reduce Morbidity and Mortality in a Global Population. NEJM 360:491, January 29, 2009

Team-Time-Out Checkliste Patientensicherheit

Patientenkleber

Vorgesehener Eingriff / am:

.....

1. Aufklärung und Identifikation des Patienten, Station/Ambulatorium/Praxis
Arzt – Im Aufklärungsgespräch – Ambulatorium / Station

Überprüfung der Patientenidentität	nicht möglich ☐	durchgeführt ☐
Eingriffseinwilligung unterschrieben	nicht möglich ☐	ja ☐
Abgleich mit vorangegangenen Untersuchungen	nicht notwendig ☐	durchgeführt ☐
Aktive Befragung zum Eingriffsort	nicht möglich ☐	durchgeführt ☐
Markierung des Eingriffsortes	nicht vorgesehen ☐	durchgeführt ☐
Sind **Allergien** bekannt	nein ☐	ja ☐
Wenn ja welche?.....		
Type & Screen, Testblut erforderlich	nein ☐	ja ☐ **Visum:**.....

2. Überprüfung der Markierung des Eingriffsortes, Kontrolle vor Transport zum Eingriff
Pflege

Überprüfung der Patientenidentität / Einwilligung	nicht möglich ☐	durchgeführt ☐
Aktive Befragung zum Eingriffsort	nicht möglich ☐	durchgeführt ☐
Überprüfung der Markierung des Eingriffsortes	nicht nötig ☐	durchgeführt ☐
Präinterventionelle Massnahmen umgesetzt	nein ☐	ja/nicht nötig ☐
Type & Screen, Testblut <72h liegt vor	nicht erforderlich ☐	ja ☐ **Visum:**.....

3. Zuweisung des richtigen Patienten für den richtigen Eingriffsraum
Arzt / Pflege – Vor Narkoseeinleitung – Einleitungsraum/Vorbereitungsraum

Aktive Befragung zur Identität, Eingriffsort und Prozedur	nicht möglich ☐	durchgeführt ☐
Überprüfung der Markierung	nicht nötig ☐	durchgeführt ☐
Präinterventionelle Massnahmen umgesetzt	nein ☐	ja/nicht nötig ☐
Eingriffseinwilligung liegt vor	nicht möglich ☐	ja ☐
Anästhesieeinwilligung liegt vor	nicht möglich/notwendig ☐	ja ☐
Anästhesiecheck durchgeführt	nicht notwendig ☐	ja ☐ **Visum:**.....

4. Team-Time-Out, Vor Start Eingriff
Operateur, Eingriffsgebiet ist abgedeckt

Überprüfung der Patientenidentität		durchgeführt ☐
Überprüfung von Eingriffsart, Eingriffsort und Markierung		durchgeführt ☐
Eingriffseinwilligung liegt vor		ja ☐
Überprüfung mit bildgebender Diagnostik erfolgt	nicht nötig ☐	durchgeführt ☐
Information über mögliche Probleme Anästhesie/Eingriff erfolgt		ja ☐
Antibiotikagabe erfolgt	ja ☐ nein ☐	nicht notwendig ☐ **Visum** :.....

CIRS: Materialprobleme

- Pat. nach Sättigungsabfall beatmet und REA-Alarm ausgelöst. Klingelalarm in der Endo 3 betätigt. Es kommt niemand. **Alarmton zu leise!**
- Patient erbricht: Absaugsystem nicht komplett, **Absaugkatheter fehlt,** Sättigungsabfall
- Transportable **Sauerstoffflasche leer**
- Stichverletzung: Entsorgungsbox zu voll
- **Material für Blutstillung (Histoacryl) fehlend**

Massnahmen

- **Systematischer Check aller Einrichtungen** vor jeder Untersuchung und am Abend (Endoskopieräume / Notfallwagen)
- Stichverletzungen: Grosse Entsorgungsboxen, regelmässiger Check
- **Spezialbehälter für jede Notfall-Intervention** (Sklerosierung, Ligatur, Histoacryl, Hemospray etc.) mit **Handlungsanweisung klar im Lager gekennzeichnet**
- **Einführung neuer Mitarbeiter (Ärzte / Pflege) und Refresher**

CIRS: Infusionen und Medikamente

- Patient mit Infusion samt Zusätzen zur Behandlung gebracht
- **Prämedikation vergessen**
- Adrenalin-Verordnung 1:100 für Polypektomie statt dessen 1:10 verabreicht.
- In Schachtel Indigocarmin war «Tusche» gelagert
- Propofol nach Endoskopie in Infusionsschlauch belassen
- Patient nach Endoskopie mit diskonnektiertem Port-a-cath verlegt
- Patient mit Port-a-cath ohne Verschlusskappen verlegt

Massnahmen

- Infusion ohne Zusätze zur Behandlung bringen
- **«Team-Time-Out» für alle Vorbereitungsmassnahmen**
- Eingriffe: **Standards** für Ärzte / Pflege für Material / Medikamente

  Vier-Augenprinzip
- Propofol nach Endoskopie: Aspiration und Spülung der Infusion
- **Genereller «Infusions-Check» nach Endoskopie**

Medikamente: Massnahmen «8-er-Regel»

Kantonsspital St.Gallen

Richtiges Arzneimittel	Verordnung richtig lesen Wenn möglich Doppelkontrolle
Richtige Dosierung	Verordnung immer inkl. Dosierung mit entsprechend dosierter Tabletten, Ampullen etc.
Richtige Darreichungsform	Sicherstellung der richtigen Applikationsart Patientengerechte Arzneiform
Richtiger Zeitpunkt	prä- und postprandiale Einnahme beachten Gleichmässige Verteilung auf 24h einhalten Chronopharmakologie beachten
Richtiger Patient	Arzneimittel einzeln pro Patient bereitstellen Korrekte Beschriftung der bereitgestellten Arzneimittel Abgabe der Tagesdosis nur bei selbständigen Patienten
Richtige Information	Stete Information zwischen Ärzten und Pflegenden
Richtige Aufklärung	«Patientengerechte» Aufklärung
Richtige Dokumentation	Aller Verordnungen, Verabreichungen, Änderungen

Klinik für Gastroenterologie / Hepatologie Sicherheit in der Endoskopie

Ergebnisse von Meldesystemen

Kantonsspital St.Gallen

Meldesysteme
führen zu

Verbesserungen in:
Organisation
Kommunikation
Prozessen
Material
usw....

Sicherheitskultur

Kantonsspital St.Gallen – ein Unternehmen, drei Spitäler: St.Gallen Rorschach Flawil

Standpunkt der Fehlerweise ändern

Persönliche Fehler

Fehler entstehen durch einzelne Personen

Persönliche Sanktionen verhindern Fehler

Systemfehler

Fehler entstehen, weil das System es zulässt

Fehler werden durch Fehlerabwehrsysteme verhindert

Ergebnisse von Meldesystemen

Systematische Fehler erkennen

Fehler systematisch lösen

- Patientenidentifikation
- Team-Time-Out für gesamten Behandlungsprozess
- Checklisten
- Vier-Augen-Prinzip / Double-check mit Visum
- Standards (Material, Medikamente, Eingriff)
- Schulung interprofessionell (Ärzte / Pflege)
- Schnittstellen minimieren

Danke für Ihre Aufmerksamkeit

S. Faiss

EUS
Die 5 wichtigsten Publikationen 2014

PD Dr. Siegbert Faiss
III. Medizinische Klinik
Asklepios Klinik Barmbek
Hamburg

ASKLEPIOS
Gemeinsam für Gesundheit

Endo Update 2014: Endosonographie

Die 5 wichtigsten Publikationen 2014

PD Dr. med. S. Faiss
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Gastroenterologie & Interventionelle Endoskopie
Asklepios Klinik Barmbek
Rübenkamp 220
22291 Hamburg





Themenauswahl

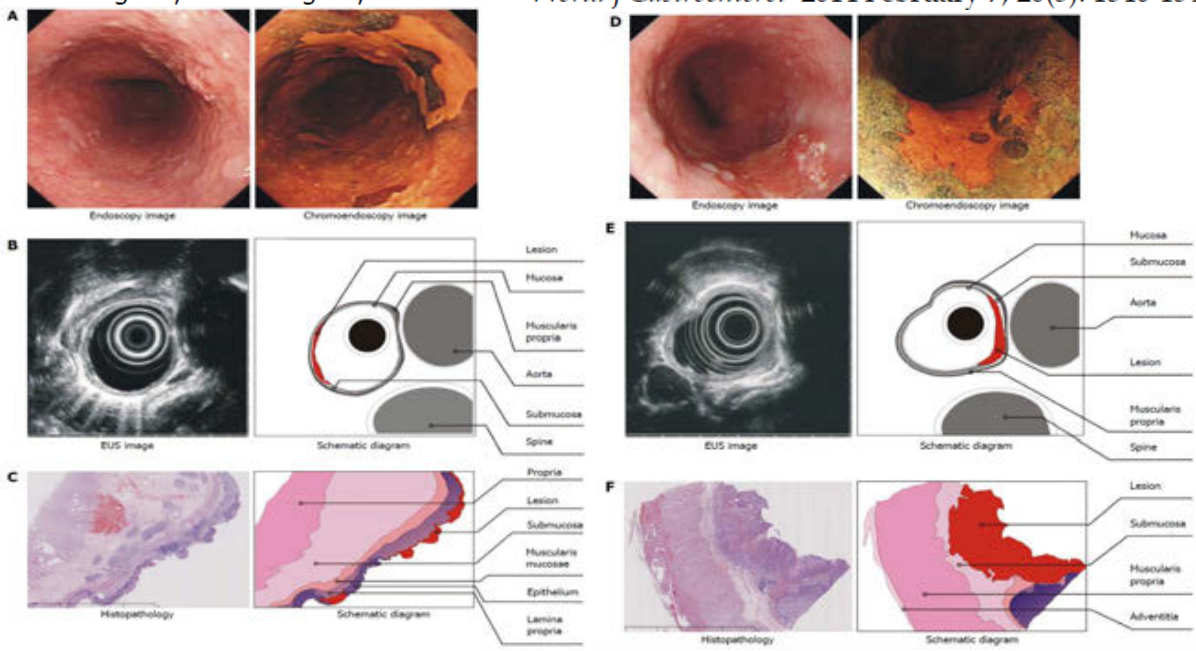
ASKLEPIOS
Gemeinsam für Gesundheit

1. EUS Staging: T1a vs. T1b (Ösophagus)
2. CH-EUS Pankreas
3. EUS-FNA vs. EUS-FNB
4. IPMN: Detektion Adenokarzinom

ASKLEPIOS
Gemeinsam für Gesundheit

Endoscopic ultrasonography for staging of T1a and T1b esophageal squamous cell carcinoma

Long-Jun He, Hong-Bo Shan, Guang-Yu Luo, Yin Li, Rong Zhang, Xiao-Yan Gao, Guo-Bao Wang, Shi-Yong Lin, Guo-Liang Xu, Jian-Jun Li *World J Gastroenterol* 2014 February 7; 20(5): 1340-1347



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He et al. World J Gastroenterol 2014; 20:1340-1347

Table 2 Accuracy of endoscopic ultrasound for staging T1a or T1b esophageal squamous cell carcinoma

Pathology	Expert 1		Expert 2		Common results
	T1a (n = 36)	T1b (n = 36)	T1a (n = 39)	T1b (n = 33)	T1a (n = 36)
T1a (n = 35)	23	13	25	10	26
T1b (n = 37)	13	24	14	23	10
Group					
AC	65.30%		66.70%		70.80%
SE	65.70%		64.10%		74.30%
FPR	35.10%		35.90%		27.00%
FNR	34.30%		30.30%		25.70%
SP	64.90%		69.70%		73.00%
PPV	63.90%		71.40%		72.20%
NPV	66.70%		62.20%		75.00%
AUC	0.653		0.668		0.736
P value	0.026		0.014		0.001

AC: Accuracy; SE: Sensitivity; FPR: False positive rate; FNR: False negative rate; SP specificity; PPV: Positive predictive value; NPV: Negative predictive value. AUC: Area under the curve.

EUS Staging: T1a vs. T1b (Ösophagus)

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He et al. World J Gastroenterol 2014; 20:1340-1347

Table 4 Cox multivariate analyses of factors affecting diagnostic accuracy of endoscopic ultrasound for staging T1a or T1b esophageal squamous cell carcinoma

Characteristics	Hazards ratio	*P* value
Age (≤ 58 *vs* > 58 yr)	1.240	0.269
Sex (male *vs* female)	0.923	0.340
Tumor width, cm (≤ 2 *vs* > 2)	1.407	0.240
Tumor length, cm (≤ 2 *vs* > 2)	4.984	0.029[1]
Differentiation (well-moderate *vs* poor)	2.815	0.098

EUS Staging: T1a vs. T1b (Ösophagus)

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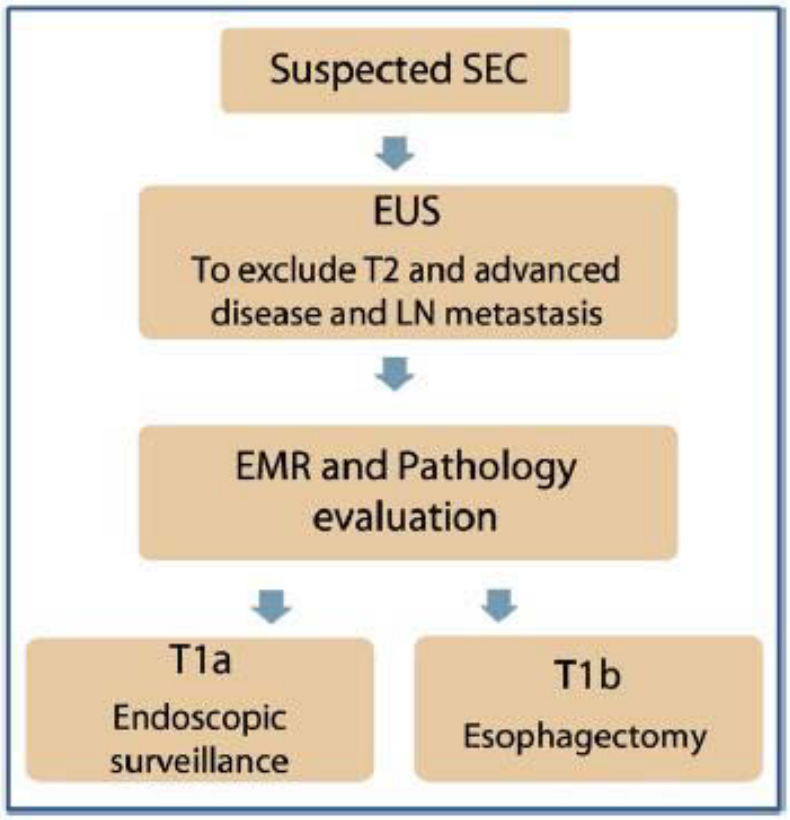

Thosani et al.
GI Endoscopy 2012; 75:242-253

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Contrast-harmonic endoscopic ultrasound for the diagnosis of pancreatic adenocarcinoma: a prospective multicenter trial

Rodica Gincul[1], Maxime Palazzo[2], Bertrand Pujol[3], Florence Tubach[4], Laurent Palazzo[5], Christine Lefort[3], Fabien Fumex[3], Alexandra Lombard[4], Daniel Ribeiro[1,3], Monique Fabre[6], Valerie Hervieu[7], Michel Labadie[8], Thierry Ponchon[1], Bertrand Napoléon[3]

Endoscopy 2014; 46: 373–379

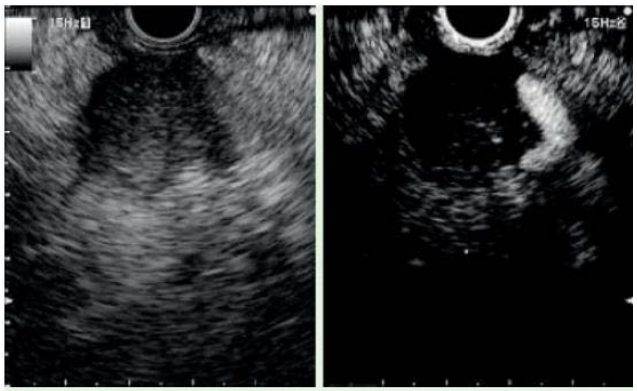

Fig. 1 Conventional B-mode (left side) and contrast-specific (ExPHD)-mode (right side). Hypoechoic 30-mm lesion in the body of the pancreas, appearing in hyposignal after intravenous administration of SonoVue. Final diagnosis, adenocarcinoma, was obtained by endoscopic ultrasound-guided fine-needle aspiration and confirmed by surgery.

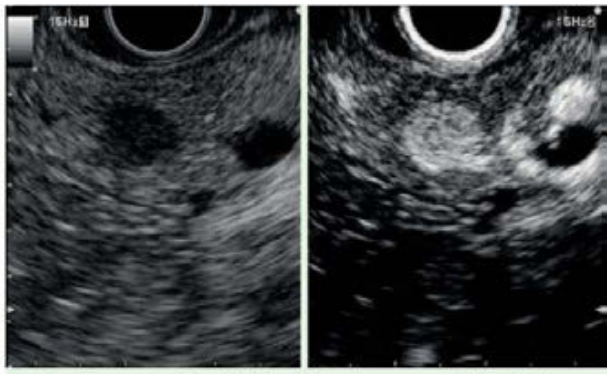

Fig. 2 Conventional B-mode (left side) and contrast-specific (ExPHD)-mode (right side). Incidentally discovered hypoechoic 10-mm lesion in the body of the pancreas, showing a hypersignal with homogeneous enhancement after intravenous administration of SonoVue. Final diagnosis, well-differentiated neuroendocrine tumor, was obtained by endoscopic ultrasound-guided fine-needle aspiration.

CH-EUS Pankreas

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Gincul et al. Endoscopy 2014; 46:373-379

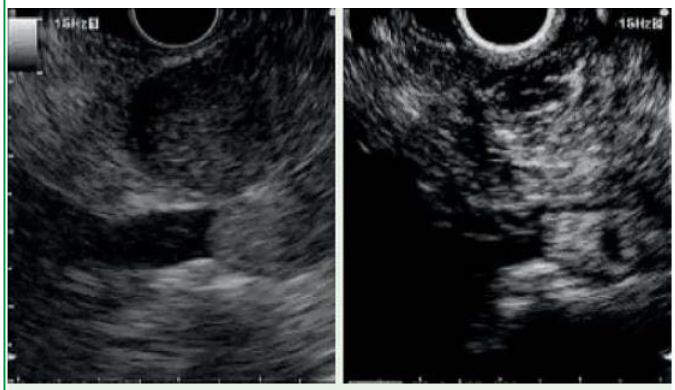

Fig. 3 Conventional B-mode (left side) and contrast-specific (ExPHD)-mode (right side). Hypoechoic heterogeneous 45-mm lesion in the body of the pancreas with splenic vein involvement. The lesion and the intravenous thrombus showed a hypersignal with heterogeneous enhancement after intravenous administration of SonoVue. Final diagnosis, neuroendocrine carcinoma, was obtained by endoscopic ultrasound-guided fine-needle aspiration and confirmed by surgery.

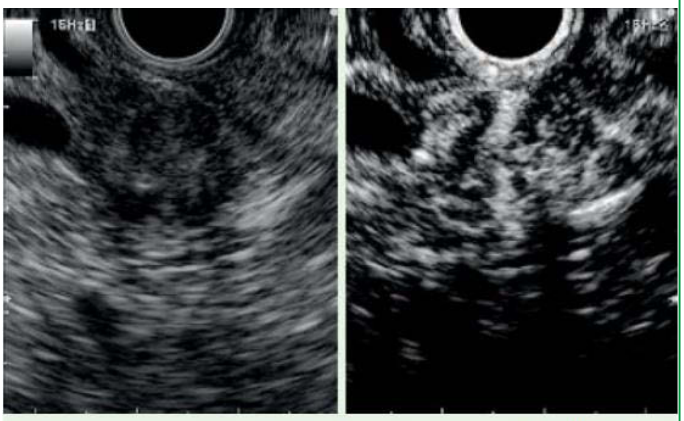

Fig. 4 Conventional B-mode (left side) and contrast-specific (ExPHD)-mode (right side). Hypoechoic 22-mm lesion in the pancreatic head, appearing in hypersignal after intravenous administration of SonoVue. Final diagnosis: nodule of chronic pancreatitis. Two negative endoscopic ultrasound-guided fine-needle aspirations. No evolution after 24 months of follow-up.

CH-EUS Pankreas

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Final diagnosis (FNA / surgery / follow-up*)	n	Hypoenhancement, (FNA / surgery / follow-up*)	Hyper/isoenhancement (FNA / surgery / follow-up*)
Pancreatic adenocarcinoma (66 / 2 / 1)	69	66 (63 / 2 / 1)	3 (3 / 0 / 0)
NET (10 / 0 / 0)	10	0	10
Chronic pancreatitis (2 / 1 / 10)	13	2 (0 / 1 / 1)	11 (3 AIP) (2[AIP] / 0 / 9)
Renal cancer metastasis (3 / 0 / 1)	4	–	4
Thyroid cancer metastasis (1 / 0 / 0)	1	–	1
Smooth muscle tumor (1 / 0 / 0)	1	–	1
Pseudosolid serous cystadenoma (2 / 0 / 0)	2	–	2

AIP, autoimmune pancreatitis; FNA, fine-needle aspiration; NET, neuroendocrine tumor.
* Number of patients for whom final diagnosis was obtained by fine-needle aspiration, surgery or follow-up.

Table 1 Final diagnosis (gold standard) compared with SonoVue enhancement.

CH-EUS Pankreas

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Gincul et al. Endoscopy 2014; 46:373-379

Table 3 Performance of contrast-harmonic endoscopic ultrasound and endoscopic ultrasound-guided fine-needle aspiration for diagnosis of pancreatic adenocarcinoma.

	CH-EUS		EUS-FNA	
	Value	95%CI	Value	95%CI
Sensitivity, %	96	88 – 99	93	84 – 97
Specificity, %	94	79 – 98	100	89 – 100
PPV, %	97	90 – 99	100	94 – 100
NPV, %	91	76 – 97	86	71 – 94
Accuracy, %*	95	89 – 98	95	89 – 98

CH-EUS, contrast-harmonic endoscopic ultrasound; EUS-FNA, endoscopic ultrasound-guided fine-needle aspiration.
* $P = 1.000$ between CH-EUS and EUS-FNA (McNemar test).

CH-EUS Pankreas

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Editorial: Fusaroli et al. Endoscopy 2014; 46:380-381

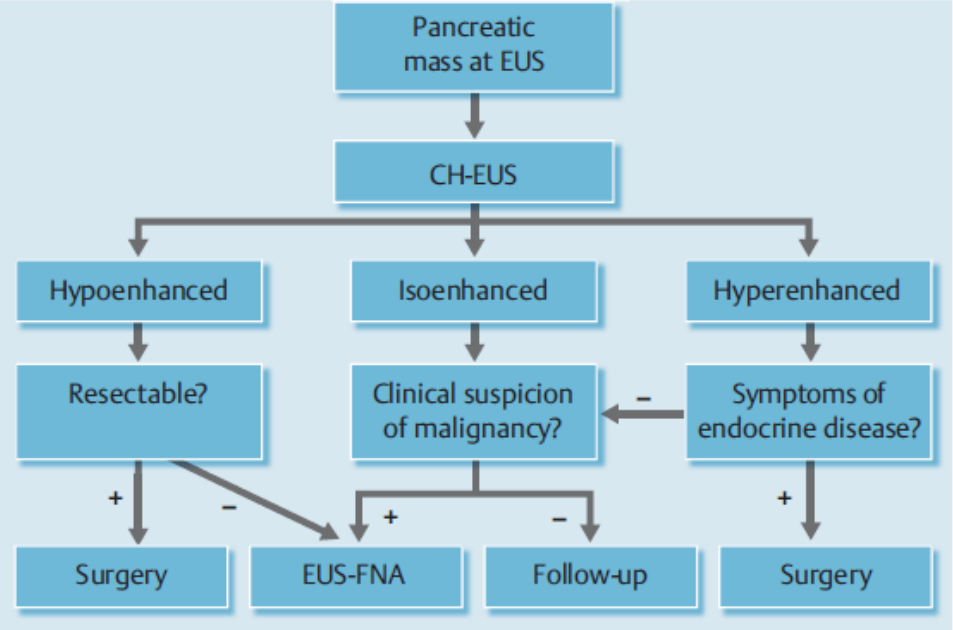

Fig. 1 Suggested algorithm based on contrast-enhanced endoscopic ultrasound (CH-EUS). FNA, fine-needle aspiration.

EUS-FNA vs. EUS-FNB

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Core biopsy needle versus standard aspiration needle for endoscopic ultrasound-guided sampling of solid pancreatic masses: a randomized parallel-group study

Endoscopy 2014 online first

Yun Nah Lee[1], Jong Ho Moon[1], Hee Kyung Kim[2], Hyun Jong Choi[1], Moon Han Choi[1], Dong Choon Kim[1], Tae Hoon Lee[1], Sang-Woo Cha[1], Young Deok Cho[1], Sang-Heum Park[1]

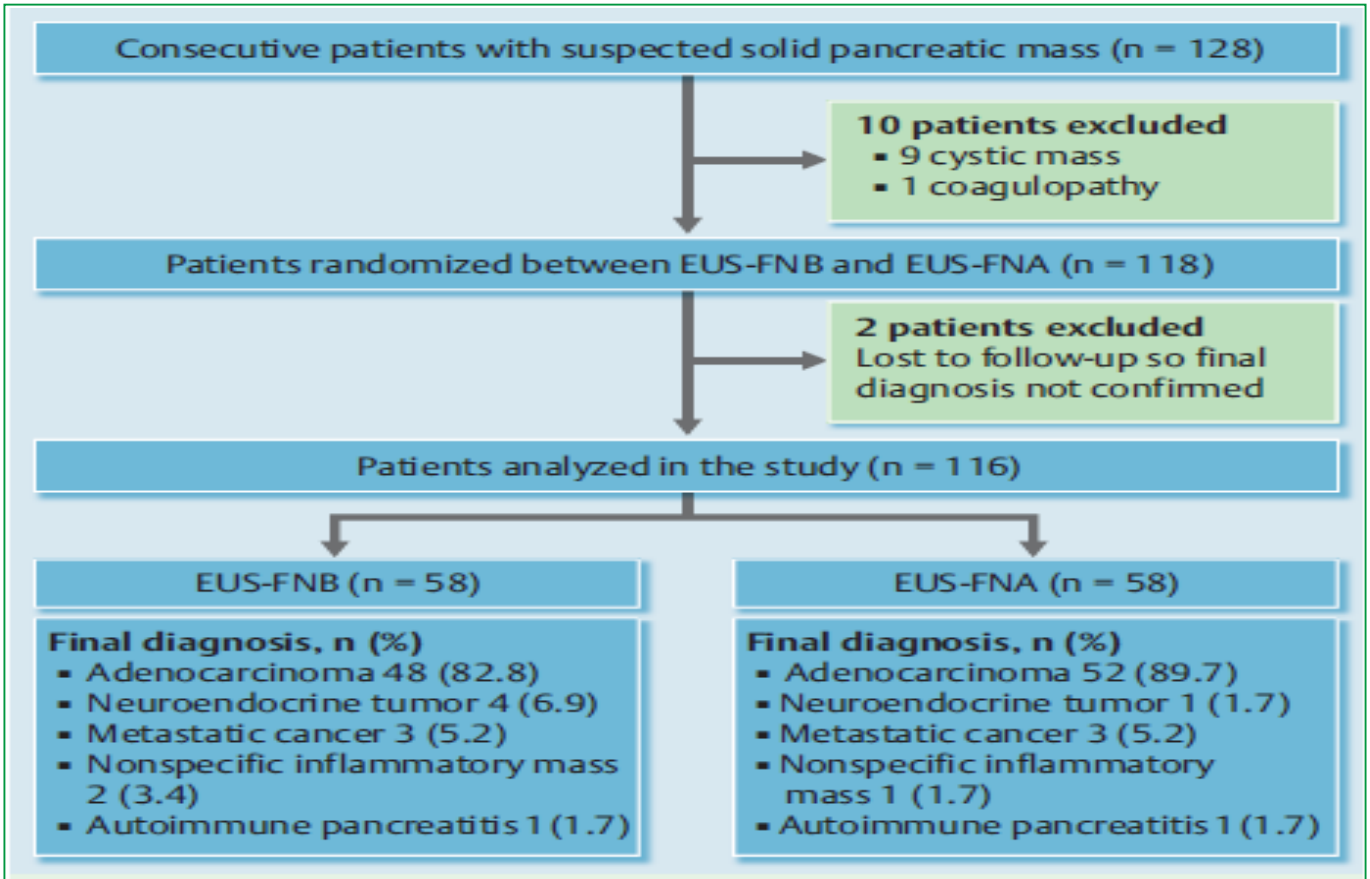

Fig. 2 Flow diagram and final diagnoses of 128 patients with a suspected solid pancreatic mass investigated either by endoscopic ultrasound (EUS)-guided fine needle biopsy (EUS-FNB) or EUS-guided fine needle aspiration (EUS-FNA).

EUS-FNA vs. EUS-FNB

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Lee et al. Endoscopy 2014 online first

Table 2 Comparison of the diagnostic performance of endoscopic ultrasound (EUS)-guided fine needle biopsy (EUS-FNB) and EUS-guided fine needle aspiration (EUS-FNA) in the diagnosis of pancreatic malignancy.

	Percentage of procedures (95%CI) achieving each outcome		*P* value
	EUS-FNB (n = 58)	EUS-FNA (n = 58)	
Accuracy			
Overall[1]	98.3 (94.9–100)	94.8 (91.9–100)	0.671
Onsite cytology	93.1 (86.6–99.6)	72.4 (60.9–83.9)	0.003
Cytology with a Papanicolaou-stain	93.1 (86.6–99.6)	89.7 (84.2–98.6)	0.743
Histology with immunohistochemistry	82.8 (73.0–92.5)	77.6 (66.9–88.3)	0.642
Sensitivity			
Overall[1]	98.2 (94.6–100)	94.6 (88.6–100)	0.618
Onsite cytology	92.7 (85.9–99.6)	71.4 (59.6–83.3)	0.006
Cytology with a Papanicolaou-stain	92.7 (85.9–99.6)	89.3 (81.2–97.4)	0.742
Histology with immunohistochemistry	81.8 (71.6–92.0)	76.8 (65.7–87.8)	0.802
Specificity[2]	100 (43.9–100)	100 (34.2–100)	1.000

EUS-FNA vs. EUS-FNB

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Characteristic	Procedure		*P* value
	EUS-FNB (n=58)	EUS-FNA (n=58)	
Needle gauge (G), n (%)			0.576
22G	34 (58.6)	30 (51.7)	
25G	24 (41.4)	28 (48.3)	
Number of needle passes required for diagnosis			
Median (range)	1.0 (1–5)	2.0 (1–5)	<0.001
Interquartile range	1.0–2.0	1.0–3.0	
Technical failure, n	0	0	1.000
Complications, n (%)	3 (5.2)	1 (1.7)	1.000

EUS-FNA vs. EUS-FNB

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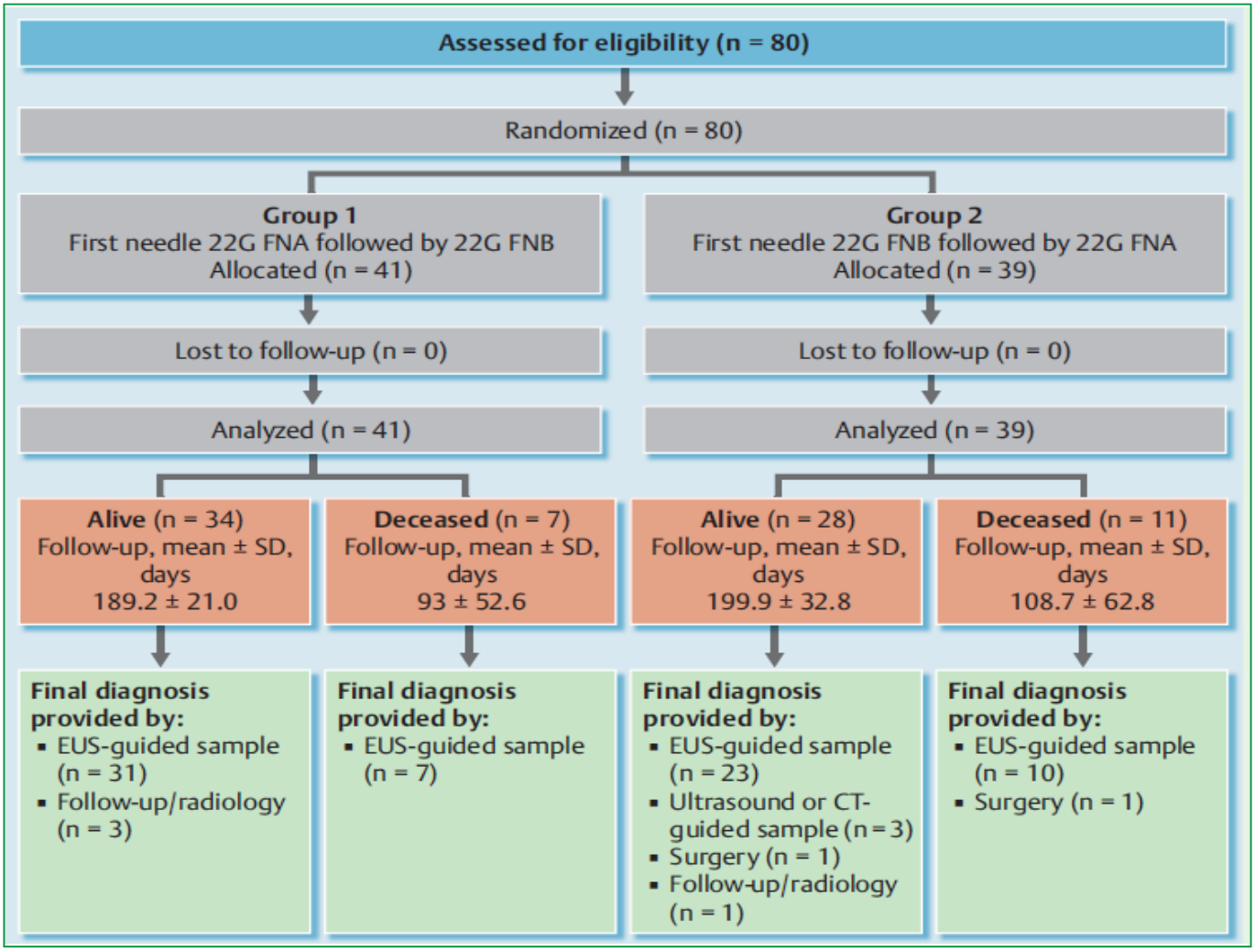
Core needle versus standard needle for endoscopic ultrasound-guided biopsy of solid pancreatic masses: a randomized crossover study

Endoscopy 2014 online first

Geoffroy Vanbiervliet[1], Bertrand Napoléon[2], Marie Christine Saint Paul[3], Charlotte Sakarovitch[4], Marc Wangermez[5], Philippe Bichard[6], Clément Subtil[7], Stéphane Koch[8], Philippe Grandval[9], Rodica Gincul[10], David Karsenti[11], Laurent Heyries[12], Jean-Christophe Duchmann[13], Jean François Bourgaux[14], Michaël Levy[15], Gilles Calament[16], Fabien Fumex[2], Bertrand Pujol[2], Christine Lefort[2], Laurent Poincloux[17], Maël Pagenault[18], Eduardo Aimé Bonin[19], Monique Fabre[20], Marc Barthet[19]



EUS-FNA vs. EUS-FNB

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Vanbiervliet et al. Endoscopy 2014 online first

Table 2 Diagnostic performance of 22G endoscopic ultrasound (EUS)-guided fine needle aspiration (EUS-FNA) and 22G EUS-guided fine needle biopsy (EUS-FNB) based on combined cytological and histological analysis in 80 patients with solid pancreatic masses.

Performance indicator,	Intention-to-diagnose (all patients; n = 80)		Samples with adequate material (n = 70)	
	EUS-FNA	EUS-FNB	EUS-FNA	EUS-FNB
Overall accuracy[1], % (cases/number for analysis) [95% CI]	92.5% (74/80) [85% – 96%]	90% (72/80) [81% – 95%]	98.6% (69/70) [92 – 99.7%]	94.3% (66/70) [86% – 98%]
Sensitivity, % (cases/number for analysis) [95% CI]	92.9% (65/70) [84% – 97%]	88.6% (62/70) [79% – 94%]	98.5% (64/65) [92% – 99.7%]	93.8% (61/65) [85% – 98%]
Specificity, % (cases/number for analysis) [95% CI]	90% (9/10) [60% – 98%]	100% (10/10) [72% – 100%]	100% (5/5) [56.5% – 100%]	100% (5/5) [56.5% – 100%]
Positive predictive value, % (cases/number for analysis) [95% CI]	98.5% (65/66) [92% – 100%]	100% (62/62) [94% – 100%]	100% (64/64) [94% – 100%]	100% (61/61) [94% – 100%]
Negative predictive value, % (cases/number for analysis) [95% CI]	64.3% (9/14) [39% – 84%]	55.5% (10/18) [34% – 75%]	83.3% (5/6) [44% – 97%]	55.6% (5/9) [27% – 81%]

EUS-FNA vs. EUS-FNB

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Vanbiervliet et al. Endoscopy 2014 online first

Table 4 Comparison of the methods used to establish the final diagnosis in samples taken by endoscopic ultrasound (EUS)-guided fine needle aspiration (EUS-FNA) and EUS-guided fine needle biopsy (EUS-FNB).

Diagnosis provided by:	EUS-FNA (n=80)	EUS-FNB (n=80)	*P* value
Neither, n (%)	8 (10.0)	13 (16.3)	0.1033[1]
Cytology alone, n (%)	6 (7.5)	14 (17.5)	
Histology alone, n (%)	10 (12.5)	6 (7.5)	
Both, n (%)	56 (70.0)	47 (58.8)	

[1] χ^2 test.

IPMN: Detektion Adenokarzinom

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Value of EUS in early detection of pancreatic ductal adenocarcinomas in patients with intraductal papillary mucinous neoplasms

Endoscopy 2014; 46: 22–29

Ken Kamata[1], Masayuki Kitano[1], Masatoshi Kudo[1], Hiroki Sakamoto[1], Kumpei Kadosaka[1], Takeshi Miyata[1], Hajime Imai[1], Kiyoshi Maekawa[2], Takaaki Chikugo[3], Masashi Kumano[4], Tomoko Hyodo[4], Takamichi Murakami[4], Yasutaka Chiba[5], Yoshifumi Takeyama[6]

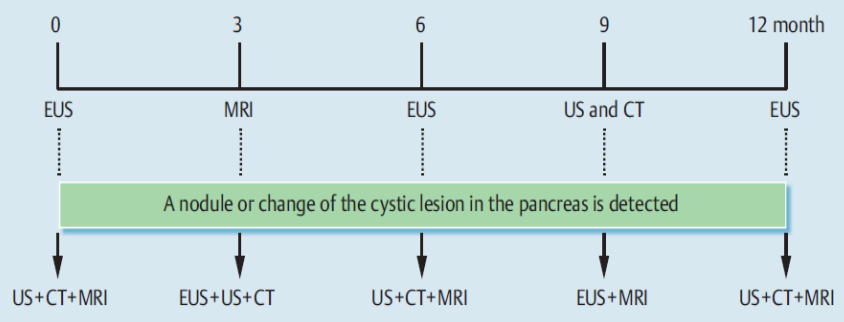
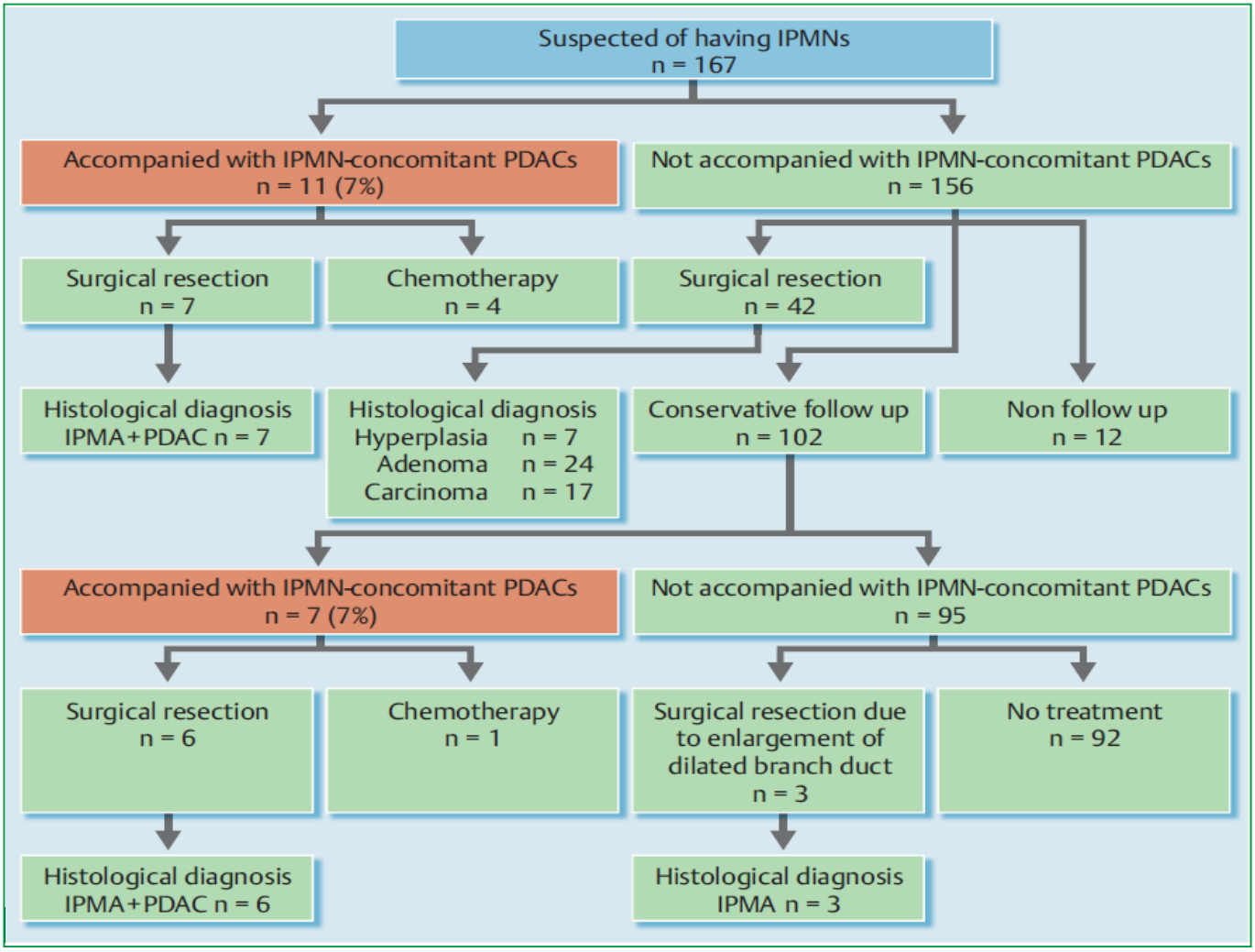


Fig. 1 The diagnostic and follow-up strategy with endosonography (EUS), ultrasonography (US), computed tomography (CT), and magnetic resonance imaging (MRI).



IPMN: Detektion Adenokarzinom

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Kamata et al. Endoscopy 2014; 46: 22-29

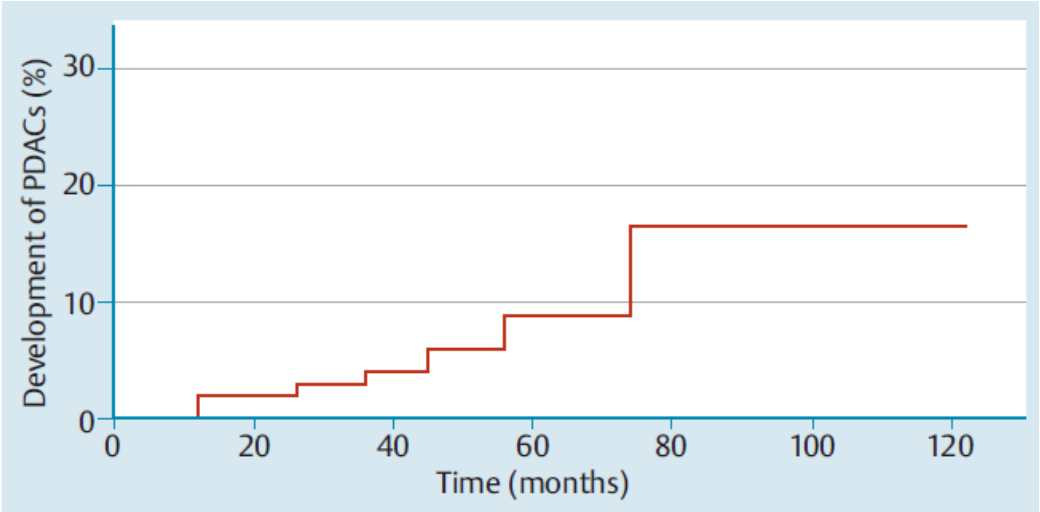

Fig. 3 Rate of intraductal papillary mucinous neoplasm (IPMN)-concomitant pancreatic ductal adenocarcinomas (PDAC) development during the follow-up of branch duct IPMNs, as analyzed by the Kaplan–Meier method.

IPMN: Detektion Adenokarzinom

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Kamata et al. Endoscopy 2014; 46: 22-29

Table 3 Sensitivity and specificity with which endosonography, ultrasonography, computed tomography, and magnetic resonance imaging detected intraductal papillary mucinous neoplasm-derived and -concomitant pancreatic ductal adenocarcinoma.

Modality	IPMN-derived PDACs (n=17)			IPMN-concomitant PDACs (n=18)					
	At the first examination			At the first examination			Throughout the study period		
	Sensitivity, % [95%CI]	Specificity, % [95%CI]	*P* value* vs. EUS	Sensitivity, % [95%CI]	Specificity, % [95%CI]	*P* value* vs. EUS	Sensitivity [95%CI]	Specificity [95%CI]	*P* value* vs. EUS
EUS	100 [0.83–1.00]	85 [0.83–0.85]	–	61 [0.48–0.61]	100 [0.98–1.00]	–	100 [0.90–1.00]	100 [0.99–1.00]	–
Ultrasound	47 [0.31–0.55]	99 [0.97–1.00]	0.089	39 [0.24–0.47]	99 [0.97–1.00]	0.041	39 [0.25–0.43]	99 [0.97–1.00]	0.001
CT	53 [0.35–0.66]	97 [0.95–0.99]	0.110	39 [0.26–0.39]	100 [0.98–1.00]	0.134	56 [0.42–0.56]	100 [0.98–1.00]	0.013
MRI	53 [0.35–0.71]	92 [0.90–0.94]	0.814	33 [0.21–0.33]	100 [0.98–1.00]	0.074	50 [0.37–0.50]	100 [0.98–1.00]	0.008

Themenauswahl

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1. **EUS Staging: T1a vs. T1b (Ösophagus)**
2. **CH-EUS Pankreas**
3. **EUS-FNA vs. EUS-FNB**
4. **IPMN: Detektion Adenokarzinom**

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Vielen Dank
für Ihre Aufmerksamkeit

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P. N. Meier

Proktologie
Die 5 wichtigsten Publikationen 2014

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Henriettenstiftung
Hannover

1. Hemorrhoids

N Engl J Med 371;10, 944-951

Jacobs D.

2. Sexually transmitted infections of the anus and rectum

Assi R., Hashim PW., Reddy VB., Einarsdottir H., Longo WE.

World J Gastroenterol 20(41), 15262-15268

3. Hidradenitis Suppurativa and Pruritus Ani

Asgeirsson T., Nunoo R., Luchtfeld MA.

Clin Colon Rectal Surg 24:71-80

4. Posterior tibial nerve stimulation for fecal incontinence: where are we?

George AT., Maitra RK., Maxwell-Armstrong C.

World J Gastroenterol 19(48), 9139-9145

5. Medical student recognition of benign anorectal conditions: the effect of attending the outpatient colorectal clinic

Spanos CP, Tsapas A., Abatzis-Papadopoulos M., Theodorakou E., Marakis GN.

BMC Surgery 14:95

Sexually transmitted infections of the anus and rectum

Assi R, Hashim PW, Reddy VB, Einarsdottir H, Longo WE.

Abstract

Sexually transmitted infections (STIs) represent a significant public health concern. Several STIs, once thought to be on the verge of extinction, have recently reemerged. This change is thought to be partially related to an increase in STIs of the anus and rectum. Importantly, the global human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS) epidemic has contributed to the emergence of particular anorectal lesions that require specialized approaches. In this report, we review common anorectal STIs that are frequently referred to colorectal surgeons in the United States. Epidemiology, clinical presentation, and management are summarized, including the latest treatment recommendations. The particularity of anorectal diseases in HIV/AIDS is addressed, along with recent trends in anal cytology and human papillomavirus vaccination.

World J Gastroenterol. 2014 Nov 7;20(41):15262-15268.

Hidradenitis Suppurativa and Pruritus Ani

Asgeirsson T, Nunoo R, Luchtefeld MA.

Abstract

Hidradenitis suppurativa (HS) is a chronic debilitating disorder that can affect any areas bearing apocrine glands. Perineal HS is associated with high morbidity compared with other anatomic regions. Early-stage disease may mimic various other forms of cutaneous disorders, but as HS progresses pathognomonic skin changes occur. Clinical stage can guide the therapeutic approach, but the lowest recurrence rate is obtained by removing all involved skin and subcutaneous fat. Pruritus ani is a complex disease with a multitude of etiologies. Its management can be frustrating and disappointing for the patient and doctor alike. The key is to start with simple treatment options focusing on perianal hygiene and avoidance of the most common offending foods and beverages. If these measures fail, topical medications should be attempted before graduating to perianal injections of methylene blue as a last resort

Clin Colon Rectal Surg. 2011 Mar;24(1):71-80. doi: 10.1055/s-0031-1272826

Posterior tibial nerve stimulation for fecal incontinence: where are we?

George AT, Maitra RK, Maxwell-Armstrong C.

Abstract

Neurostimulation remains the mainstay of treatment for patients with faecal incontinence who fails to respond to available conservative measures. Sacral nerve stimulation (SNS) is the main form of neurostimulation that is in use today. Posterior tibial nerve stimulation (PTNS)--both the percutaneous and the transcutaneous routes--remains a relatively new entry in neurostimulation. Though in its infancy, PTNS holds promise to be an effective, patient friendly, safe and cheap treatment. However, presently PTNS only appears to have a minor role with SNS having the limelight in treating patients with faecal incontinence. This seems to have arisen as the strong, uniform and evidence based data on SNS remains to have been unchallenged yet by the weak, disjointed and unsupported evidence for both percutaneous and transcutaneous PTNS. The use of PTNS is slowly gaining acceptance. However, several questions remain unanswered in the delivery of PTNS. These have raised dilemmas which as long as they remain unsolved can considerably weaken the argument that PTNS could offer a viable alternative to SNS. This paper reviews available information on PTNS and focuses on these dilemmas in the light of existing evidence.

World J Gastroenterol. 2013 Dec 28;19(48):9139-45. doi: 10.3748/wjg.v19.i48.9139.

Medical student recognition of benign anorectal conditions: the effect of attending the outpatient colorectal clinic

Spanos CP, Tsapas A, Abatzis-Papadopoulos M, Theodorakou E, Marakis GN.

Abstract

BACKGROUND:
Benign anorectal conditions are fairly common. Physicians of various specialties usually see patients with these conditions before being referred to colorectal specialists, frequently with an incorrect diagnosis. We sought to evaluate the effect of attending an outpatient colorectal clinic by medical students on the diagnostic accuracy of these conditions.

METHODS:
Over a 1-year period, medical students were randomized into a group that attended the clinic, and one that did not. Both groups were shown images of six common benign anorectal conditions. The overall diagnostic accuracy as well as the diagnostic accuracy for each one of these conditions was prospectively evaluated for both groups.

RESULTS:
Nineteen students attended clinic and 17 did not. Overall diagnostic accuracy was 80.6% for students attending clinic and 43.1% for non-attending students ($p < 0.05$). In the attending group, diagnostic accuracy was significantly greater for prolapsed internal hemorrhoids (73.6% versus 35.2%, $p < 0.05$), thrombosed external hemorrhoid, (73.6% versus 17.6%, $p < 0.05$) fissure (100% versus 47%, $p < 0.05$), and anal tags (68.4% versus 11.7%, $p < 0.05\%$).

CONCLUSION:
Exposure to these conditions during surgical clerkships in medical school may help future specialists provide better care for patients with benign anorectal disorders

BMC Surg. 2014 Nov 19;14(1):95

I. Steinbrück

Enteroskopie und Kapselendoskopie
Die 5 wichtigsten Publikationen 2014

Dr. Ingo Steinbrück
I. Medizinische Abteilung
Asklepios Klinik Altona
Hamburg

ASKLEPIOS

ENDO-UPDATE 2014
Augsburg, 28.11. - 29.11.2014

Enteroskopie und Kapselendoskopie – Die 5 wichtigsten Publikationen 2014

I. Steinbrück

I. Medizinische Abteilung
Asklepios Klinik Altona
Hamburg

Potentielle Interessenkonflikte des Referenten: Vortragshonorare von Olympus Medical und Given Imaging

Publikation 1

ASKLEPIOS

Prospective randomized comparison between axial- and lateral-viewing capsule endoscopy systems in patients with obscure digestive bleeding

Authors Mathieu Pioche[1], Geoffroy Vanbiervliet[2], Philippe Jacob[3], Clothilde Duburque[4], Rodica Gincul[1], Bernard Filoche[4], Jacques Daudet[3], Jérôme Filippi[2], Jean-Christophe Saurin[1]

Institutions Institutions are listed at the end of article.

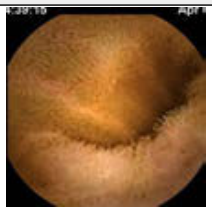
Pioche et al, Endoscopy 2014; 46: 479–484

Videokapseln

ASKLEPIOS

PillCam SB 2 (GIVEN™)

- 1 Kamera, 156° Panoramabild
- 2 Bilder/Sek.
- Ext. Recorder-Datenspeicherung
- Aufnahmezeit 9 Std.



CapsoCam SV-1 (Capsovision™)

- 4 Kameras, 360° Panoramabild
- 4 Bilder/Sek. pro Kamera
- On board-Datenspeicherung
- Aufnahmezeit 15 Std.

Studiendesign und Methodik

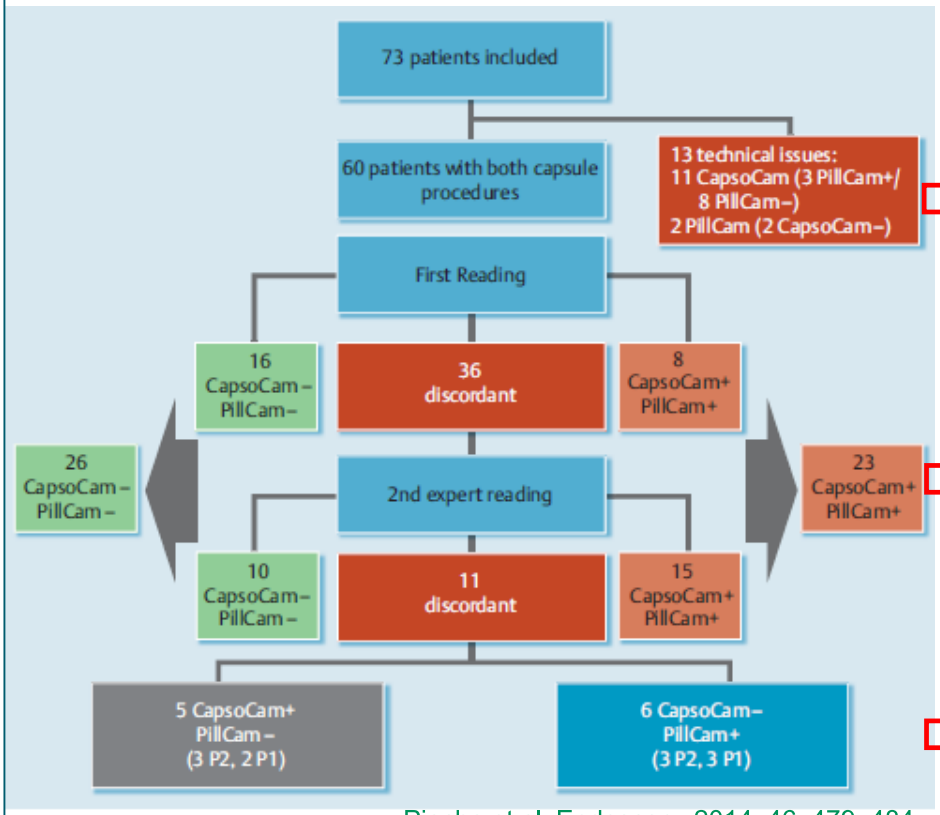
ASKLEPIOS

- **prospektiv, randomisiert, multizentrisch**
- **n= 73**
- **Indikation: okkulte/obskure GI-Blutung nach neg. ÖGD/Kolo**
- **randomisierte Ingestion beider Kapseln im Intervall von 1 Std.**
- **Zielparameter:**
  - ***Primär:* Konkordanz**
  - ***Sekundär:* diagnostische Güte, Bildqualität**

Pioche et al, Endoscopy 2014; 46: 479–484

Ergebnisse (1)

ASKLEPIOS



- **11x Capsocam (15,1%):**
  - 5x Kapselverlust
  - 5x Aufnahmestörung
  - 1x nicht geschluckt
- **2x PillCam (2,7%):**
  - 1x Aufnahmestörung
  - 1x nicht geschluckt

- **Konkordanz in 81,6%** (49/60) der Patienten
- **Kappa = 0,63**

Diskonkordanz gleich verteilt

Pioche et al, Endoscopy 2014; 46: 479–484

Ergebnisse (2)

ASKLEPIOS

	PillCam	Capsocam	
Pos. Diagnose	**48,3%**	**46,7%**	**n.s.**
ITT	**43,8%**	**38,4%**	**n.s.**
Anzahl Läsionen	**85**	**108**	**p=0,001**
Auswertungszeit	**26,2**	**32**	**p=0,002**

Pioche et al, Endoscopy 2014; 46: 479–484

Ergebnisse (3)

ASKLEPIOS

Lesion type	CapsoCam +/ PillCam+	CapsoCam+/ PillCam−	CapsoCam−/ PillCam+	CapsoCam+P2/ PillCam+P1	CapsoCam+P1/ PillCam+P2	Total
Telangiectasia	51	33	8	3	3	98
Ulcerations	4	2	4	1		11
Tumors or polyps	2	1	–			3
Duodenitis	3	–	1			4
Portal hypertension	–	–	1			1
Blood	3	1	–			4
Small-bowel villous atrophy	1	–	–			1
Total	64	37	14	4	3	122

Läsionen, die mit beiden Kapseln detektiert wurden:

PillCam	Capsocam	
69,7%	88,5%	p=0,001

Fazit

ASKLEPIOS

- **Verlässlichkeit des PillCam-Systems höher**
- **Gute diagnostische Übereinstimmung beider Systeme**
- **Vergleichbare diagnostische Güte**
- **Längere Auswerungszeit beim Capsovision-System**

Publikation 2

ASKLEPIOS

Deep enteroscopy with standard endoscopes using a novel through-the-scope balloon

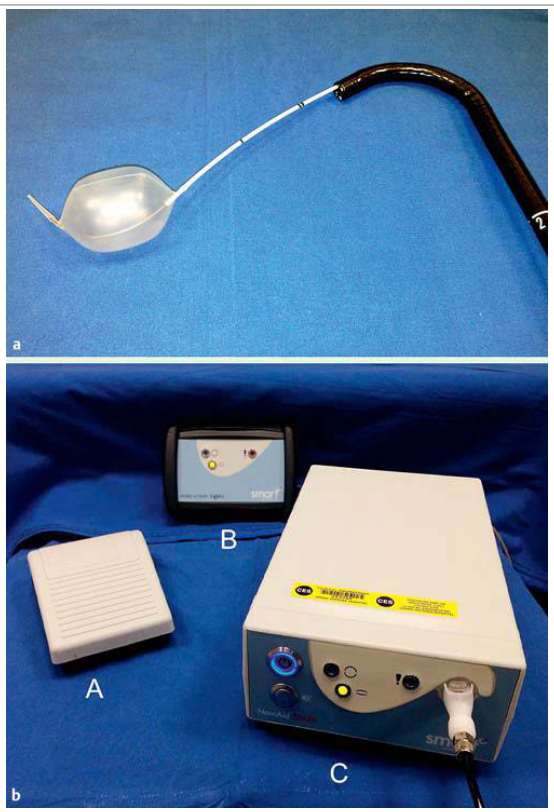
Authors Vivek Kumbhari, Andrew C. Storm, Mouen A. Khashab, Marcia I. Canto, Payal Saxena, Venkata S. Akshintala, Ahmed A. Messallam, Vikesh K. Singh, Anne-Marie Lennon, Eun J. Shin, Joanna K. Law, Patrick I. Okolo III

Institution Division of Gastroenterology and Hepatology, Department of Medicine, The Johns Hopkins Medical Institutions, Baltimore, Maryland, USA

Kumbhari et al, Endoscopy 2014; 46: 685–689

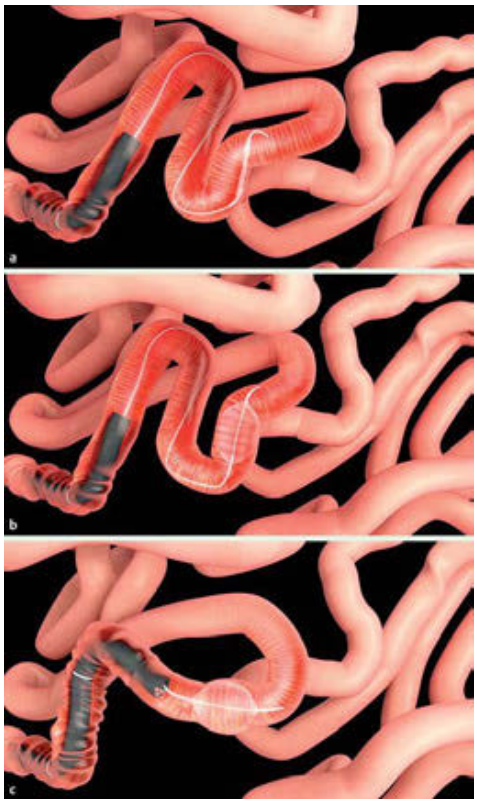
Das NaviAid AB On demand Endoscopy (ODE) device (Smart Medical Systems Ltd. ™)

ASKLEPIOS



Kumbhari et al, Endoscopy 2014; 46: 685–689

Funktionsweise



Kumbhari et al, Endoscopy 2014; 46: 685–689

Studiendesign und Methodik

- **retrospektiv, unizentrisch**
- **n= 28 (11 antegrad / 17 retrograd)**
- **Indikation: V.a. Dünndarmerkrankung (in ÖGD+Ileokolo nicht erreichbar)**
- **Ausschlusskriterium: operativ veränderte Darmanatomie**
- ***Zielparameter:***
  - **Technischer Erfolg**
  - **Adverse events**
  - **diagnostische/therapeutische Güte**
  - **Prozedurendauer**
  - **Max. Eindringtiefe**
  - **Zeit bis max. Eindringtiefe**

Kumbhari et al, Endoscopy 2014; 46: 685–689

Ergebnisse

ASKLEPIOS

	antegrad	retrograd
Technischer Erfolg	100%	100%
Adverse Events	0%	0%
Diagnostische Güte	45,5%	58,8%
Therapeutische Güte	36,4%	47,1%
Prozedurendauer (Min.)	24.1 ± 6.4	31.4 ± 5.3
Max. Eindringtiefe (Meter)	1.2±0.3	1.1±0.3
Zeit bis max. Eindringtiefe (Min.)	15.1 ± 4.6	19.7 ± 4.0

Kumbhari et al, Endoscopy 2014; 46: 685–689

Fazit

ASKLEPIOS

- *Nachteile:*
  - geringe Eindringtiefe
  - ggf. geringere Stabilität bei Intervention
- *Vorteil:* universell mit jedem Koloskop einsetzbar

- *Mögliche Einsatzgebiete:*
  - Enteroskopiedevice für small volume center
  - on demand-Möglichkeit bei inkompletter Koloskopie

Publikation 3

ASKLEPIOS

Long-term follow-up of patients undergoing capsule and double-balloon enteroscopy for identification and treatment of small-bowel vascular lesions: a prospective, multicenter study

Authors Gabriel Rahmi[1,2], Elia Samaha[1,2], Kouroche Vahedi[3], Michel Delvaux[4], Gérard Gay[4], Hervé Lamouliatte[5], Bernard Filoche[6], Jean-Christophe Saurin[7], Thierry Ponchon[7], Marc Le Rhun[8], Dimitri Coumaros[4], Philippe Bichard[9], Thibault Manière[1,2], Emilie Lenain[10], Gilles Chatellier[2,10], Christophe Cellier[1,2]

Institutions Institutions are listed at the end of article.

Rahmi et al, Endoscopy 2014; 46: 591–597

Studiendesign und Methodik

ASKLEPIOS

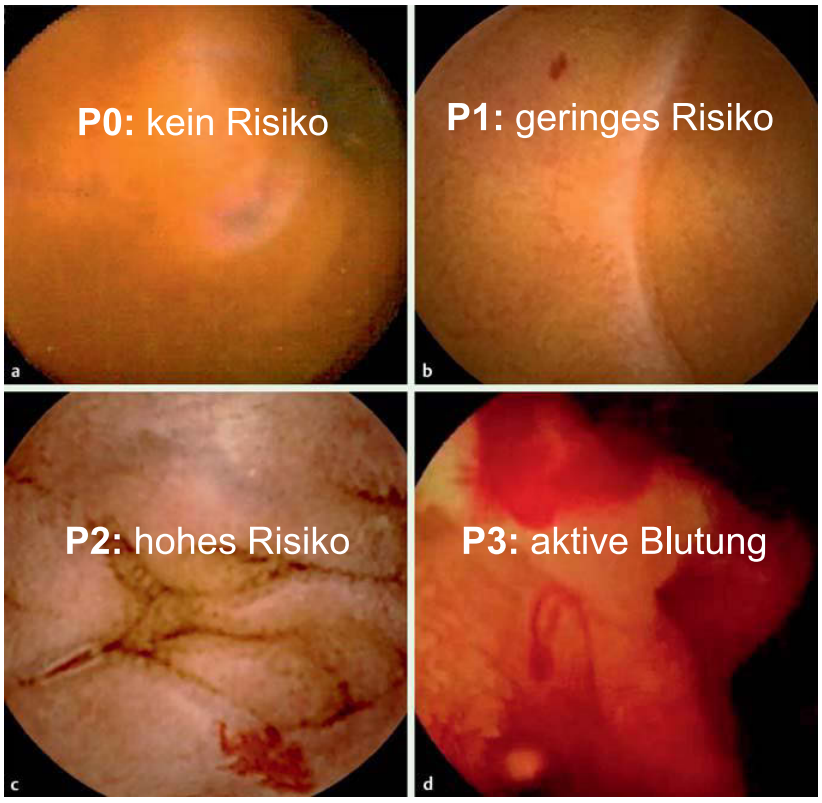
- **Prospektiv, multizentrisch, 1-Jahr-Follow up**
- **n= 183**
- ***Einschlusskriterien:*** **obskure GIB mit vaskulären Läsionen in der VK und anschl. Therapie in der DBE**
- ***Zielparameter:***
  - **primär: Zeit bis Blutungsrezidiv**
  - **Sekundär: Risikofaktoren für Blutungsrezidiv**

Rahmi et al, Endoscopy 2014; 46: 591–597

Asklepios Klinik Altona

Blutungspotential der vaskulären Läsionen

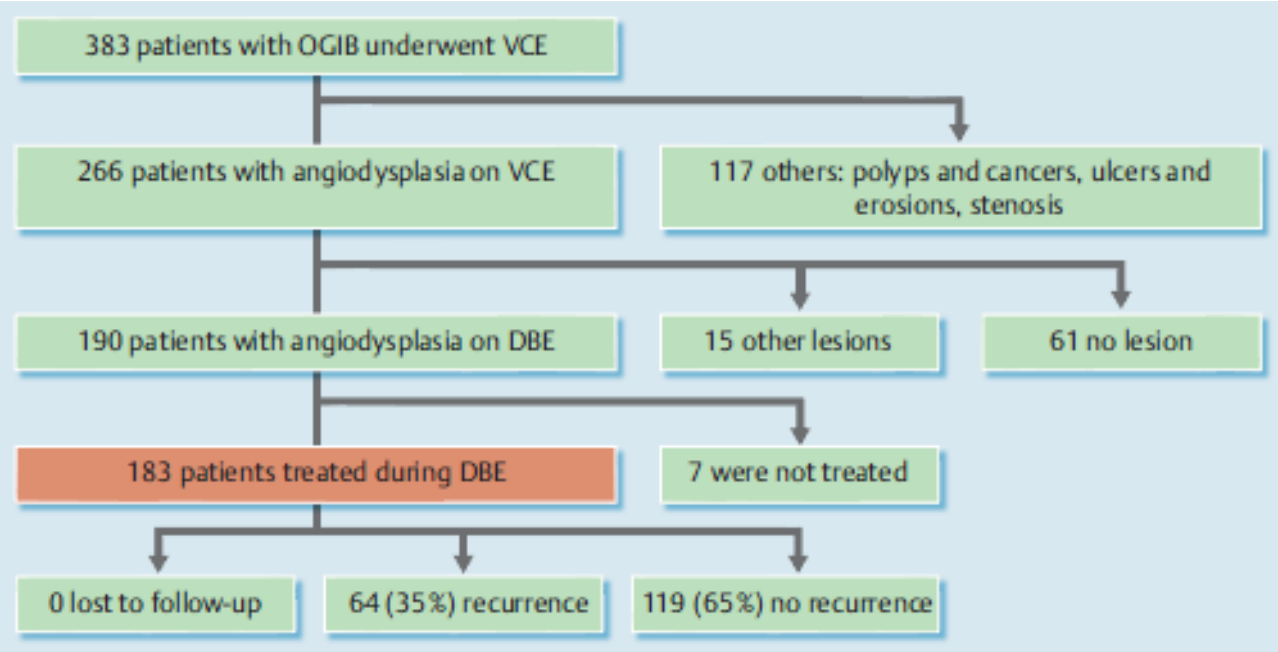
ASKLEPIOS



Rahmi et al, Endoscopy 2014; 46: 591–597

Ergebnisse (1) – Anteil Rezidivblutung

ASKLEPIOS



Rahmi et al, Endoscopy 2014; 46: 591–597

Ergebnisse (2) – behandelte Läsionen (n=183)

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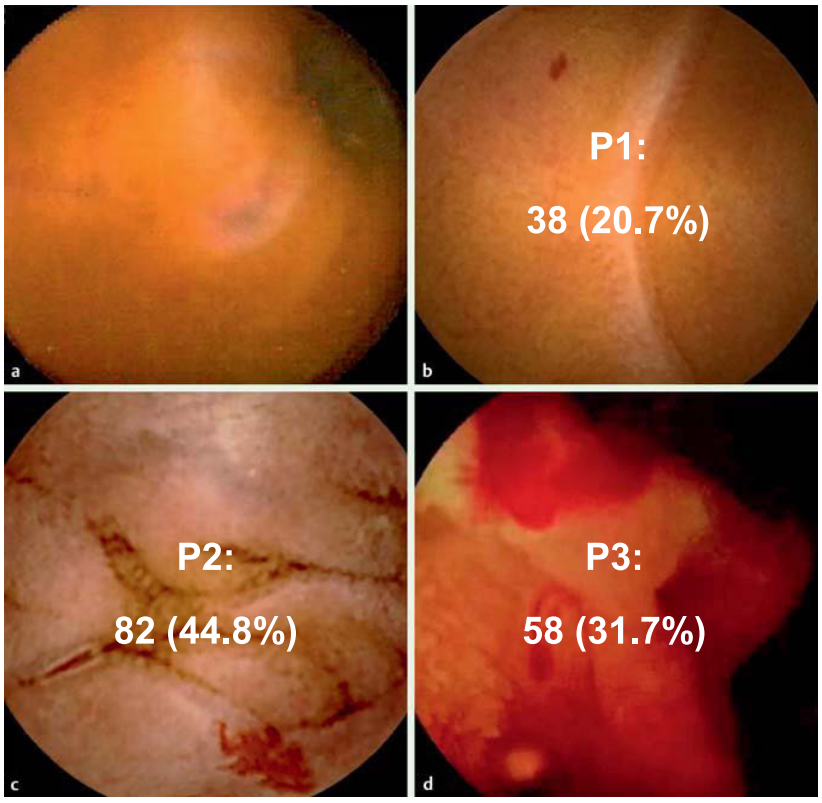

Rahmi et al, Endoscopy 2014; 46: 591–597

Ergebnisse (3) – Diagnostik bei Blutungsrezidiv

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	Total tests* n=97	Positive finding n (%)	Angiodysplasia n (%)	Ulcer n (%)	Hemangioma n (%)
Upper gastrointestinal tract	21	12 (57.1)	8 (66.7)	4 (33.34)	0 (0)
Colonoscopy	14	10 (71.4)	10 (100)	0 (0)	0 (0)
Capsule	28	23 (82.1)	22 (95.7)	1 (4.3)	0 (0)
DBE	31	27 (87.1)	25 (92.6)	2 (7.4)	0 (0)
Arteriography	1	0 (0)	–	–	0 (0)
Surgery	2	2 (100)	–	–	2 (100)

Rahmi et al, Endoscopy 2014; 46: 591–597

Ergebnisse (4) – Risikofaktoren für Blutungsrezidiv

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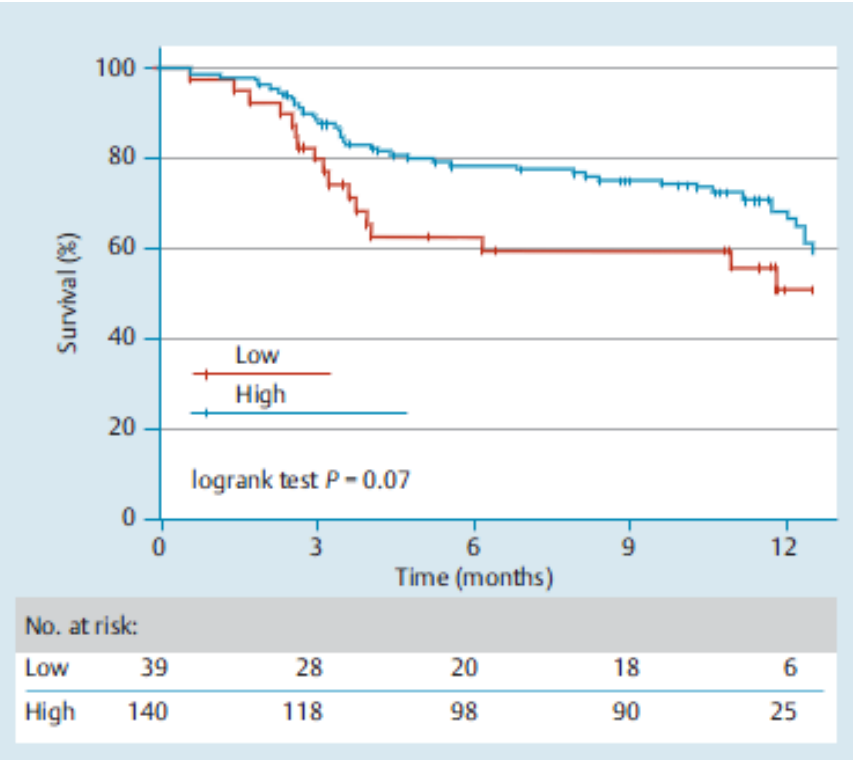
	Recurrence		Univariate analysis P^1	Multivariate analysis		
	Yes n = 64 (35.0 %)	No n = 119 (65.0 %)		HR	Wald CI 95 %	P^1
Age, mean ± SD, years	69.6 ± 10.8	65.9 ± 11.9	0.028[1]			
Cardiac disease	26 (40.6)	30 (25.2)	0.055[1]	2.04	1.20 – 3.48	0.008[1]
Chronic renal failure	15 (23.4)	24 (13.1)	0.001[1]	1.77	0.94 – 3.33	0.077
Cirrhosis	5 (7.8)	4 (3.3)	0.024[1]			
Antiocagulation therapy[2]	16 (25.0)	17 (14.2)	0.071[1]			
Antiplatelet therapy[2]	20 (31.2)	35 (29.4)	0.944			
Overt bleeding	34 (53.1)	42 (35.3)	0.017[1]	1.78	1.07 – 2.97	0.027[1]
Degree of cleanliness on VCE, n (%)						
Excellent or good	21 (32.8)	48 (40.3)	0.321			
Medium	23 (35.9)	45 (37.8)	–			
Poor	9 (14.0)	5 (4.2)				
Unknown	11 (17.2)	21 (17.7)				
No. of lesion at DBE, mean ± SD, n	3.6 ± 2.6	3.8 ± 2.7	0.539			
Maximum likelihood of bleeding						
Low	17 (26.5)	22 (18.4)	0.079[1]			
High	45 (70.3)	95 (79.8)				
Unknown	2 (3.1)	2 (1.7)				

Rahmi et al, Endoscopy 2014; 46: 591–597

Ergebnisse (5) – Reblutungsrate abhängig von der Blutungswahrscheinlichkeit der behandelten Läsion

ASKLEPIOS



Rahmi et al, Endoscopy 2014; 46: 591–597

Fazit

ASKLEPIOS

- **Blutungsrezidiv bei 1/3 der behandelten Angiektasiepatienten**
- **unabhängige Risikofaktoren:**
  - **kardiale Vorerkrankungen**
  - **initial overte GIB**
- **Behandlung von Läsionen mit hohem Blutungspotential ist besonders effektiv**

Publikation 4

ASKLEPIOS

Bekanntmachungen

Vereinbarung von Qualitätssicherungsmaßnahmen nach § 135 Abs. 2 SGB V für die Dünndarm-Kapselendoskopie zur Abklärung obskurer gastrointestinaler Blutungen (Qualitätssicherungsvereinbarung Dünndarm-Kapselendoskopie)

Deutsches Ärzteblatt, Jg 111, Heft 29-31, 1318-25

Vertragsärztliche Leistung der gesetzlichen KV

ASKLEPIOS

Indikation:

- **persistierende/rezidivierende Eisenmangelanämie bei nachvollziehbar keiner anderen Ursache als enteralem Blutverlust**

oder

- **sichtbares/okkultes Blut im Stuhl bei gleichzeitiger Anämie**

nach

- **neg. ÖGD und (Ileo-)koloskopie**
- **Ausschluss einer medikamentös verursachten gastrointestinalen Blutung, wenn vertretbar**

Richtlinie Methoden der vertragsärztlichen Versorgung, zuletzt geändert am 17. Juli 2014, Banz AT 02.10.2014 B2, in Kraft getreten am 3. Oktober 2014

Abrechnung über EBM (seit 1.7.14)

ASKLEPIOS

		Preis	GOP
Durchführung:		115 Euro	13425 (Erw.) / 04528 (Kinder)
Auswertung:		247 Euro	13426 (Erw.) / 04529 (Kinder)
	=	**362 Euro**	

www.kbv.de

Voraussetzungen

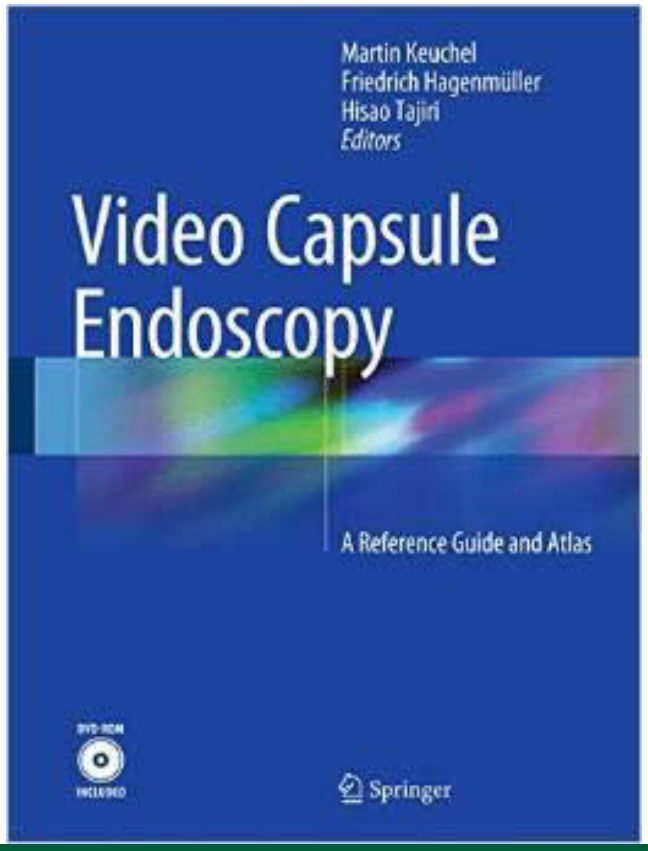
ASKLEPIOS

- **FA „Innere Medizin und Gastroenterologie“** oder „Kinder- und Jugendmedizin“ mit Zusatzbezeichnung „Kinder-Gastroenterologie“
- Übergangsregelung (bis 6 Monaten nach Inkrafttreten): FA „Innere Medizin ohne Schwerpunkt“ mit gastroenterologischer Tätigkeit, der bereits kapselendoskopische Leistungen durchgeführt hat
- **25 Auswertungen unter Anleitung** oder im von der KV anerkannten Kapselendoskopie-Kurs
- **Telefonische Erreichbarkeit des Arztes** für die Dauer der Untersuchung
- **≥10 Untersuchungen in 12 Monaten** zur Aufrechterhaltung der rechtlichen Befähigung zur Auswertung
- verpflichtiende Übermittlung einer Jahresstatistik

Deutsches Ärzteblatt, Jg 111, Heft 29-31, 1318-25

Publikation 5

ASKLEPIOS



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