

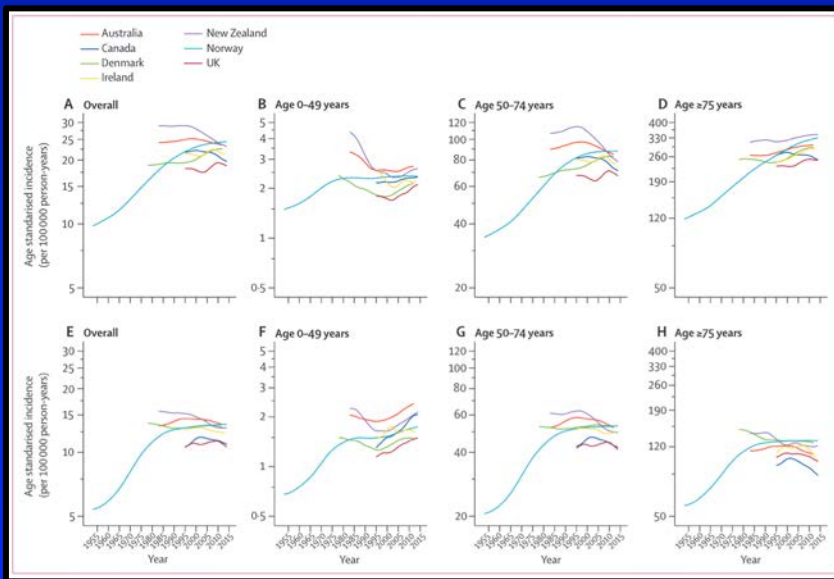
Highlights 2019

Kolorektales Karzinom (CRC) Kolonpolypen

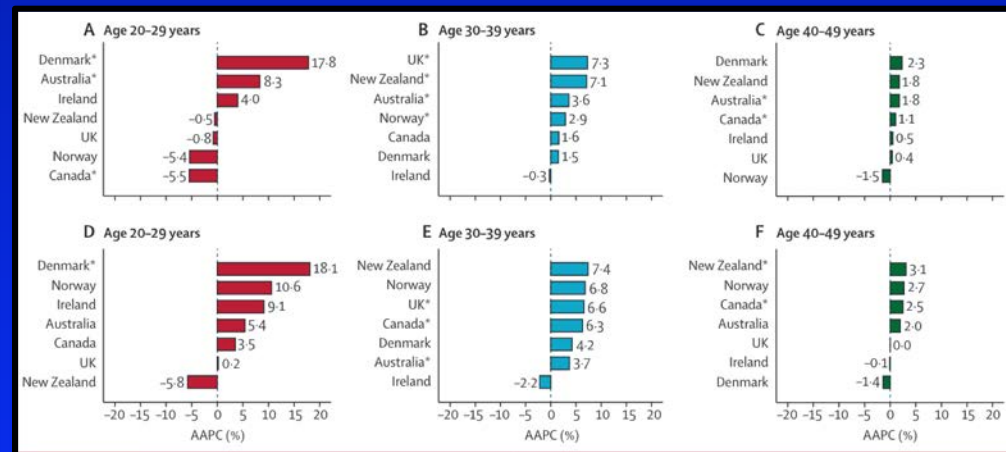
Peter Bauerfeind
Triemlispital Zürich

CRC: Anstieg bei unter 50-jährigen

Araghi et al. Lancet 2019; 4: 511-18 (Aus, Can, Den, Norw, New Z, Ire, UK)



Colon



Rektum

Andere Publikationen zum Thema:

Murphy et al. Gastroenterology 2019;156:958 (USA)

Murphy et al. Gastroenterology 2018;155:1716–1719 (USA)

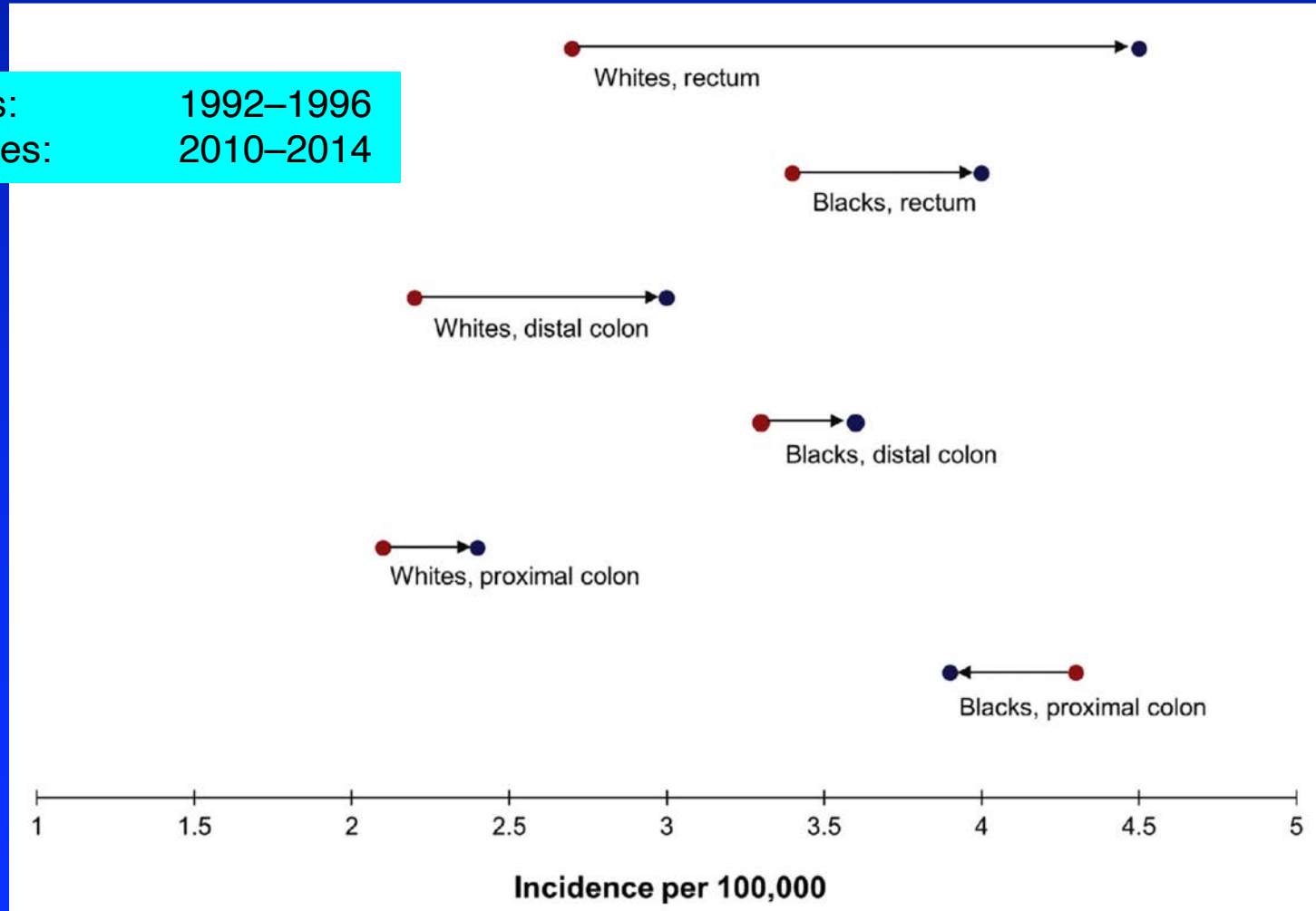
Vuik et al. Gut 2019;68:1820 (Belg, Ger, NL, UK, Norw, Sw, Fin, Ire, F, Den, CZ, Pol, I, UK, Greenland, Slov)

Stoffel et al. <https://doi.org/10.1053/j.gastro.2019.07.055>

CRC: Anstieg bei unter 50-jährigen

Murphy et al. Gastroenterology 2019;156:958–965

red circles: 1992–1996
black circles: 2010–2014



Primärprophylaxe / Riskofaktoren

- Eicosapentaenoic acid

Hull et al. Lancet 2018; 392: 2583–94:

KEIN EFFEKT (12 Monate F/U)

709 Patienten mit früheren Adenomen
2g Fishoil vs. 300 mg ASA vs. Fishoil/ASA vs. Plazebo
f/u 6 und 12 Monaten

- Calcium / Vit D

Crockett et al. Gut 2019;68:475–486:

MEHR SERRATIERTE ADENOME (2.6 bzw 3.8 RR)

2058 Patienten mit früheren Adenomen
1200 mg Ca vs. 100 IU Vit vs. Both vs. Plazebo
Ff/u: 3 und 5 Jahre

- *H.pylori*

Butt et al. Gastroenterology 2019;156:175–186:

H.pylori (VAC pos) erhöht das Risiko (RR1.7 Afro-Amer)

4063 CRC Patienten vs. 4063 Kontrollen

Primärprophylaxe / Riskofaktoren

- Phosphodiesterase 5 Inhibitors



Huang et al. Gastroenterology 2019;157:672–681 (Swe)

50% weniger CRC + niedrigere Stadien

4823 Männer mit früheren Adenomen
CRC/1000 person years 2.64 vs 4.46 per 1000
2005-2015

- Statine

Cheung K-S, et al. Gut 2019;68:1979–1985 (Hong Kong)

Seltener CRC nach Screening-Koloskopie (RR 0.72)

187 897 Personen
854 (0.45%) PCCRC-3y
Kolonoscopies 2005 - 2013

- Antibiotika >10 Jahre vor CRC

Zhang et al. Gut 2019;68:1971–1978

Seltener rechtsseitige Colonca, häufiger Rektumca

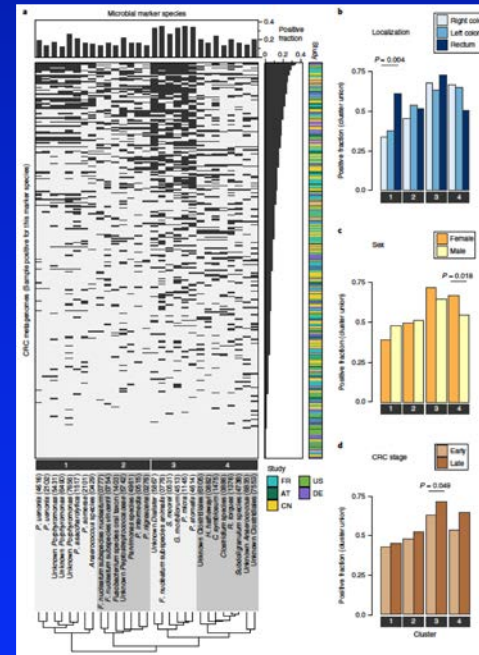
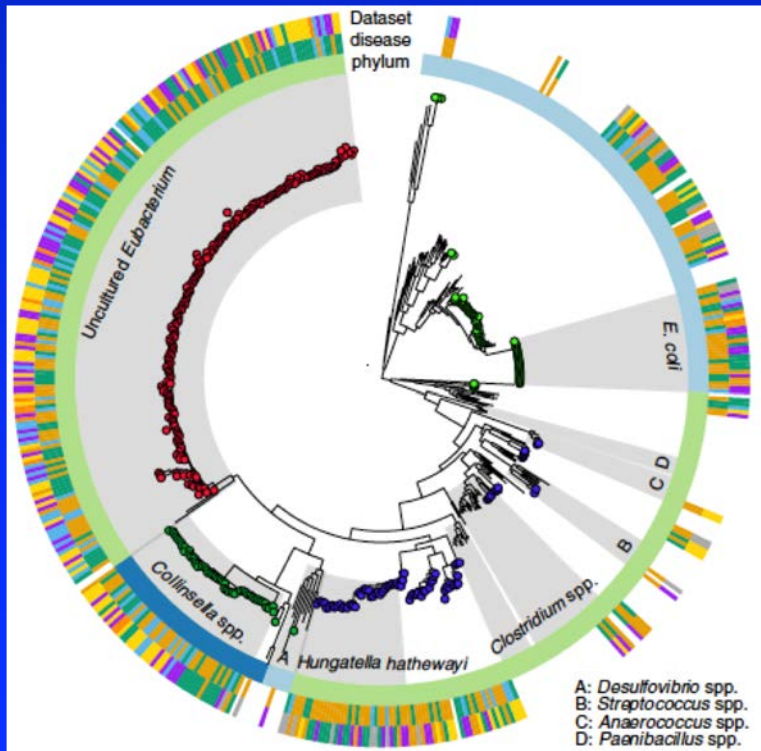
28980 CRC, 137077 Kontrollen

CRC / Adenome Microbiom

Yachida et al. Nat Med 2019; 25:968–76

Thomas et al. Nat Med 2019; 25:667–678

Wirbel et al. Nat Med 2019; 25: 679–689



Fusobacterium nucleatum
Bacteroides fragilis

Intestinal microbiota and colorectal carcinoma: Implications for pathogenesis, diagnosis, and therapy.

Montalban-Arques A, Scharl M.
EBioMedicine. 2019 Oct;48:648-655

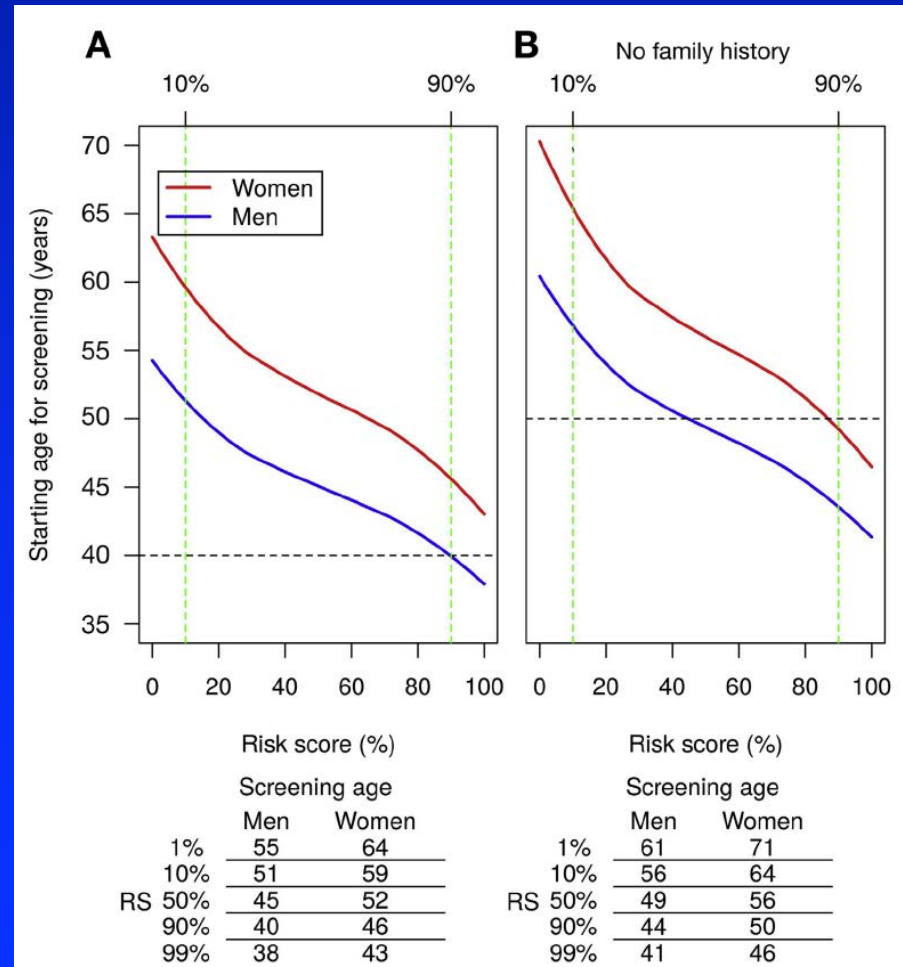
Wann mit dem CRC Screening starten?

Jeon et al. Gastroenterology Gastroenterology 2018;154:2152–2164

Variable

Age, y, mean (SD)
 Height, cm, mean (SD)
 BMI, kg/m², mean (SD)
 Family history, yes, n (%)
 Endoscopy history,^a yes, n (%)
 Education,^b n (%)
 Cat1
 Cat2
 Cat3
 Cat4
 Diabetes, yes, n (%)
 Lifestyle factors
 Physical activity, yes, n (%)
 Smoking status, *ever smoker*, n (%)
 Smoking, *pack-years*,^c mean (SD)
 Alcohol consumption, n (%)
 <1 g/d
 1–28 g/d
 >28 g/d
 Pharmaceutical factors, n (%)
 Aspirin use, yes
 NSAIDs use, yes
 Post-menopausal hormone use, yes
 Dietary factors, mean (SD)
 Fiber^d
 Calcium^d
 Folate^d
 Processed meat^d
 Red meat^d
 Fruit^d
 Vegetable^d
 Total energy
 Combined risk scores, mean (SD)
 E-score
 G-score

- 9748 CRC
- 10,590 controls



Stuhltest kombiniert mit Risk-Score

Chiu et al. Gastroenterology 2016;150:617–625

5657 Personen (>40j) -> Asian Pacific risk Score

- High risk: 1768 subjects (31.3%)
- Medium risk: 3243 subjects (57.3%)
- Low risk: 646 subjects (11.4%)



Coloscopy



Erst FIT

Alle Coloscopy

Supplementary Table 1. Asia-Pacific Risk Score for CRC		
Risk factor	Criteria	Points
Age, y	<50	0
	50–69	2
	≥70	3
Sex	Female	0
	Male	1
Family history of CRC in a first-degree relative	Absent	0
	Present	2
Smoking	Never	0
	Current or past	1

Sensitivity for advanced adenoma: 67.5%

Sensitivity for invasive cancer: 95.1%

40-50% weniger Koloskopien

Fecal Immunochemical Test (FIT)

FIT Stuhltest

- Wieviele Tests soll man machen ?
- FIT und Antikoagulation ?
- Threshold für den FIT ?
- Wirksamkeit ?

FIT: Ein Test oder Zwei ?

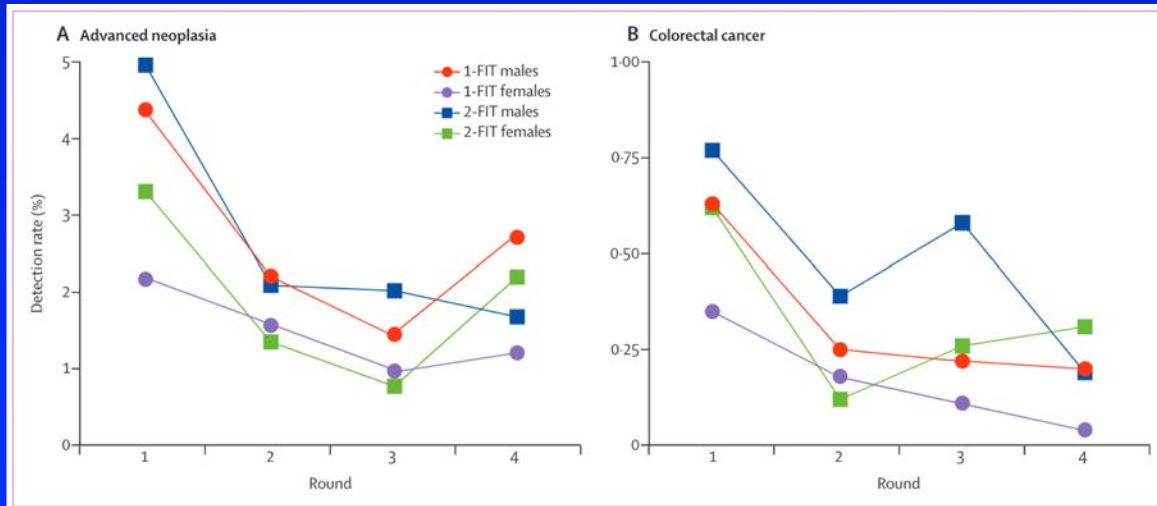
Schreuders et al. Lancet 2019; 4: 622–31 NL

2 Studien:

- 7310 Personen FIT-1
- 2269 Personen FIT-2

OC-Sensor:

positiv = 10 ug Hemoglobin / 1g Stuhl



- 1/3 mehr Coloskopien
- Kein Unterschied
 - Karzinome
 - advanced Adenome
 - Stadien Karzinome
 - Interval-Karzinome

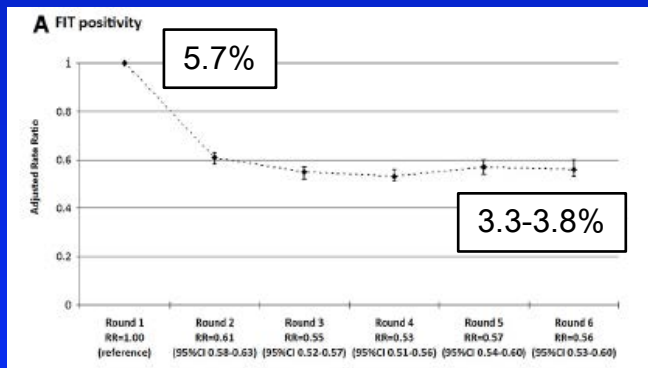
Conclusion:
1 FIT Test ist genug

FIT: Langzeit Performance

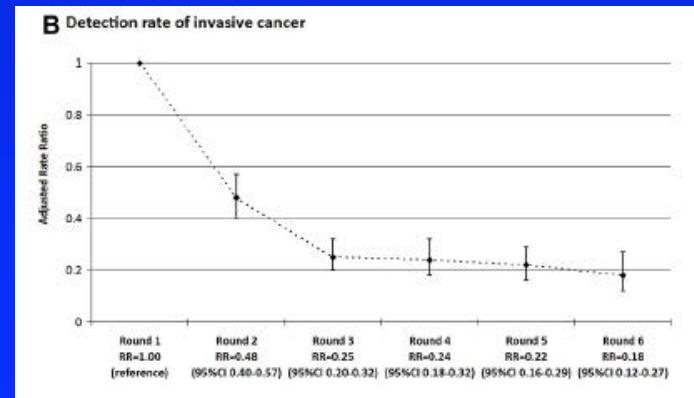
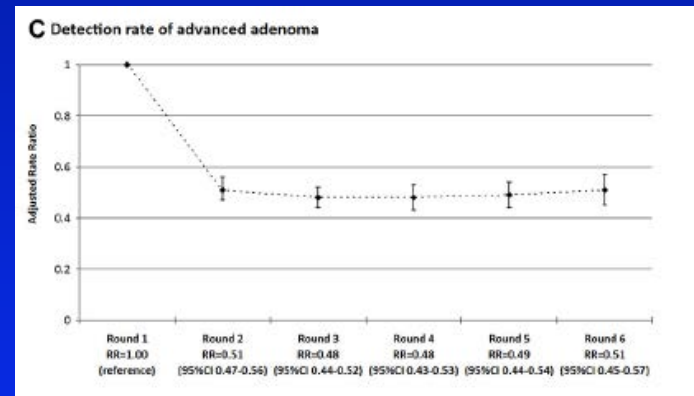
Zorzi M, et al. Gut 2018;67:2124–2130 (Ita)

123 347 Personen:

- alle 2 Jahre 1 OC Sensor (20 ug/g)
- 2002-2014



Durchschnitt: 4,1%
Kumulativ: 25%

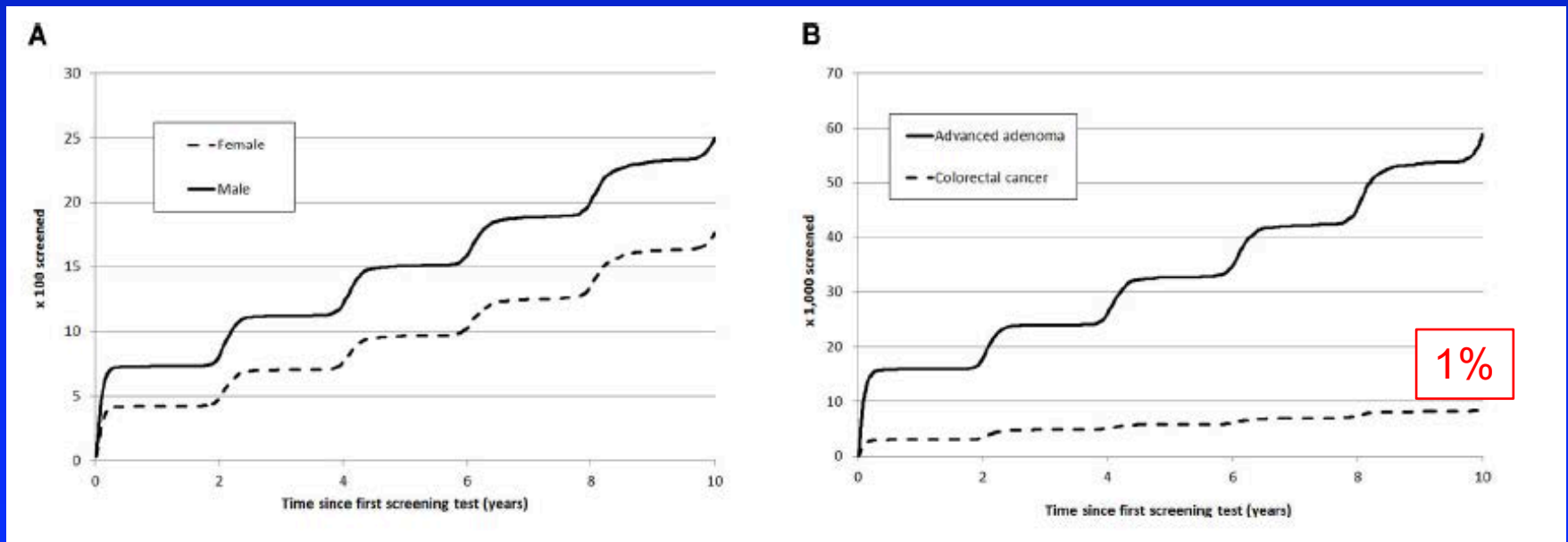


FIT: Langzeit Performance

Zorzi M, et al. Gut 2018;67:2124–2130 (Ita)

123 347 Personen:

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- 2002-2014



FIT Stuhltest

- Wieviele Tests soll man machen ?
- FIT und Antikoagulation ?
- Threshold für den FIT?
- Wirksamkeit ?

Nieuwenburg et al. Gut 2019;68:866 (EU):

Meta-Analyse

8 Studien, 3563 Personen

KEIN EINFLUSS von ASA, NSAID, AK

Randel et al. Gastroenterology 2019;156:1642–1649 (Norw):
140,000 Personen (50–74)

KEIN EINFLUSS von Warfrin oder Aspirin
Mehr falsch positive bei DOACs

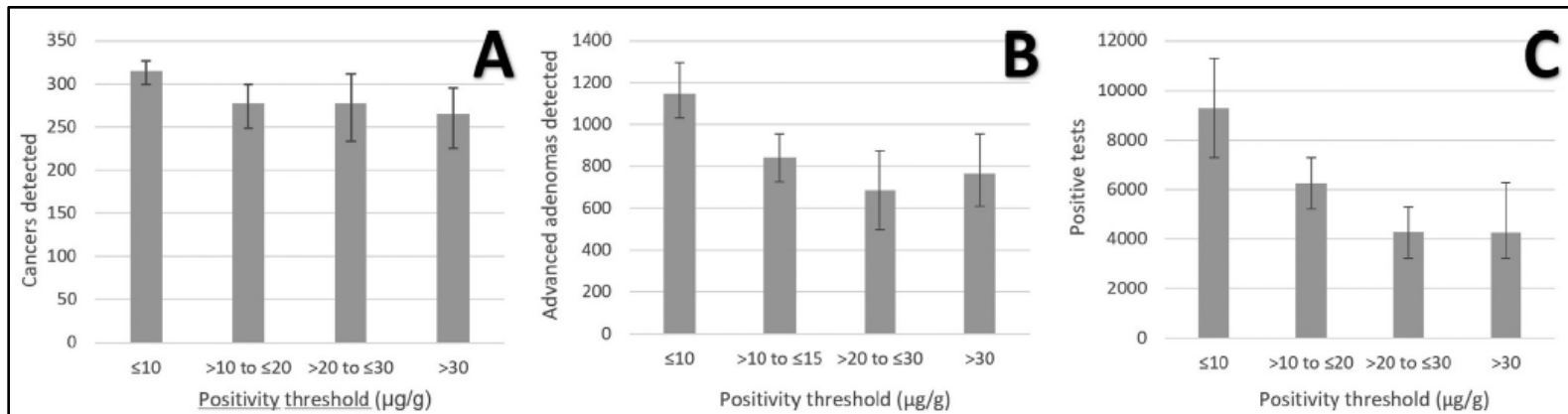
Schlussfolgerung: Kein Stop von OAK,ASA,NSAID,DOAC vor FIT

FIT Stuhltest

- Wieviele Tests soll man machen ?
- FIT und Antikoagulation ?
- Threshold für den FIT?
- Wirksamkeit ?

USA Guidelines
MSTF; GI Endoscopy 2017 , 85:1
20 ug/g

Selby et al. Gastroenterology 2019 in press (46 studies with 2.4 million participants)

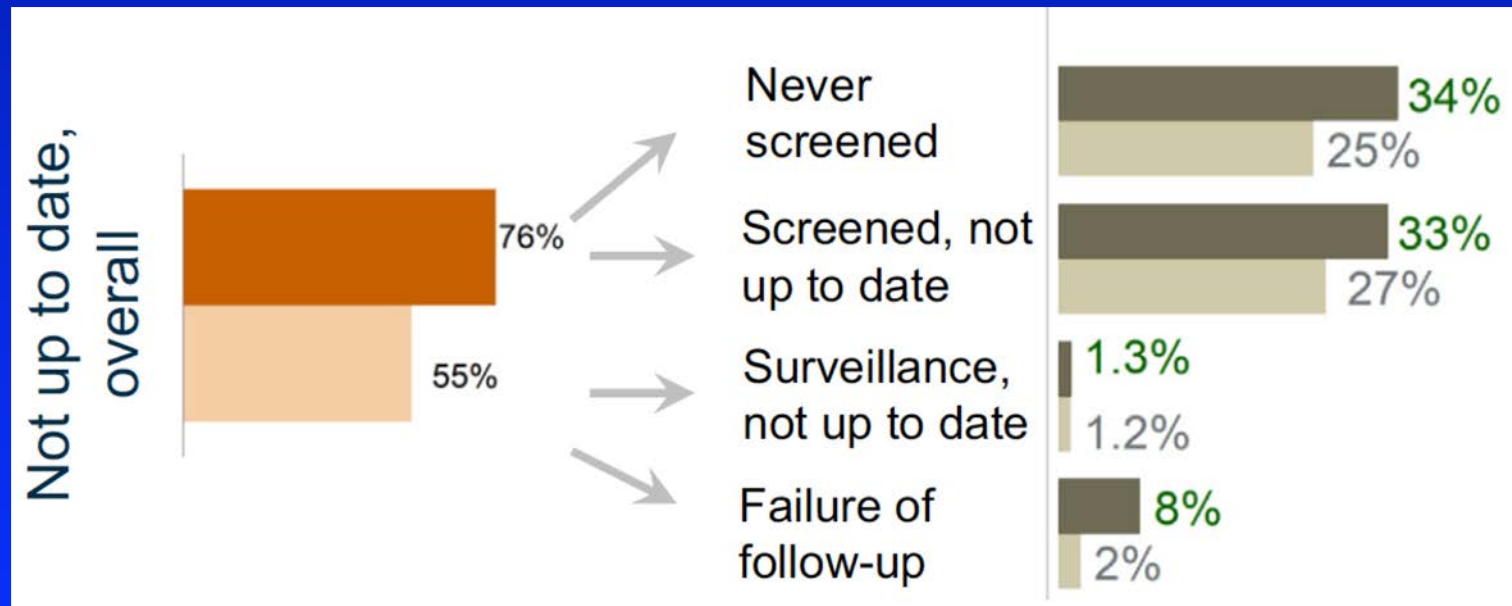


Vergleich von FOB-Gold und OC-Sensor: de Klerk et al. Lancet 2019; 4: 111–18

Senkt korrektes Screening die CRC Mortalität?

Doubeni et al. Gastroenterology 2019;156:63–74 (USA)

1750 CRC deaths vs. 3486 cancer free patients



Schlussfolgerung:

- CRC „deaths“ waren weniger gut überwacht
- Korrektes Screening reduziert das Risiko an CRC zu sterben um 60%
- 422 (24%) CRC deaths traten auf trotz adäquater Überwachung

Langzeitergebnisse Screening Sigmoidoskopie

Miller et al Lancet Gastroenterol Hepatol 2019; 4: 101–10(USA)

- 236,089 individuals
- (median patient age, 56 years; 37.8% male)
- 132 centres
- 2000 – 2011

2x Sigmoidoscopy (baseline + 3 or 5 y
f/u: 16 Jahre

Incidence of colorectal cancer:

Sigmoidoscopy: 12.55 per 10 000 person-years

Usual care: 15.33 per 10 000 person-years

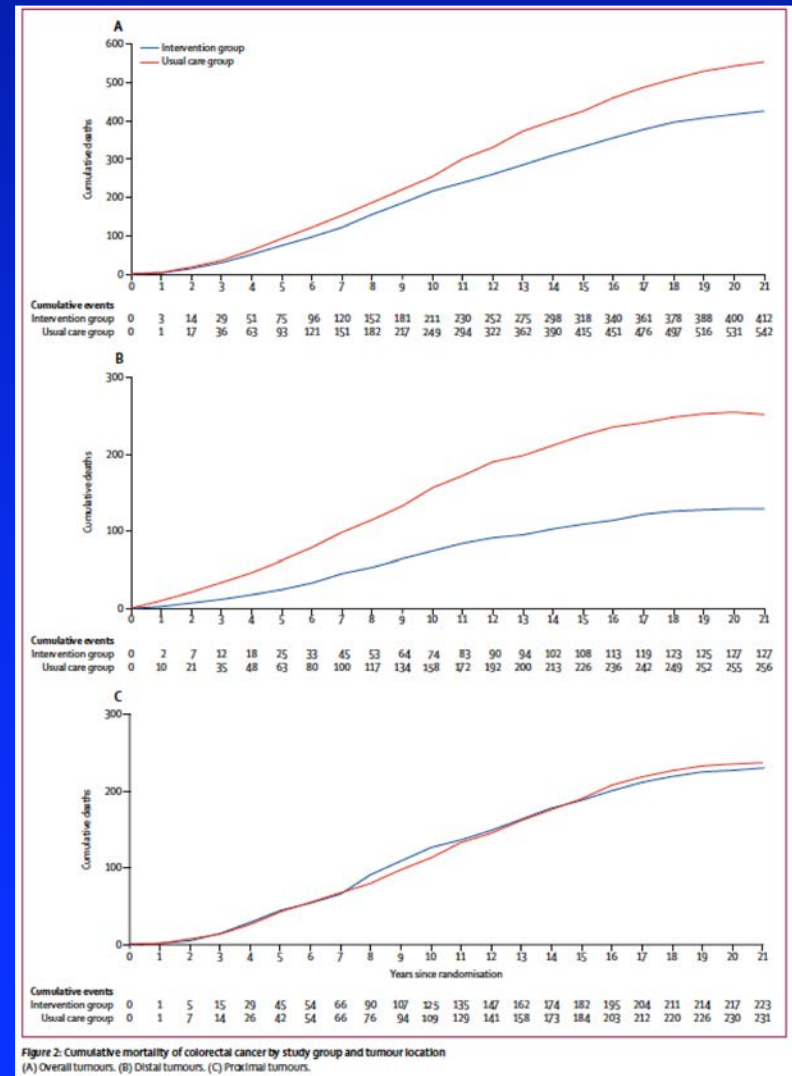
RR 0.82

Mortality:

Sigmoidoscopy: 3.37 per 10 000 person-years

Usual care: 4.48 per 10 000 person-years

RR 0.75



Aspirin, AK, DOAC und Endoskopie

Empfehlungen SGG

Bleeding risk of gastrointestinal procedures

Procedures without bleeding risk

Endoscopy without biopsy
EUS without FNA
ERCP without intervention

Procedures with low-bleeding risk

Endoscopy with biopsy
ERCP with stent placement
Enteroscopy with/without biopsy

Procedures with high-bleeding risk

Polypectomy*
Sphincterotomy
Sphincterotomy with large balloon dilatation
Dilatation of digestive stenosis
Digestive stenting
PEG
EUS with FNA
Laserablation, APC
Therapy of varices
EMR, ESD, ampullary resection
Ligation of hemorrhoids
Transcutaneous liver biopsy and FNA

Empfehlungen SGG

Polypectomy in patients taking antiplatelet agents and oral anticoagulants

Polypectomy is safe
in patients taking:

- ASS

Polypectomy is probably safe
with preventive measures in patients taking:

- Clopidogrel
- ASS&Clopidogrel
- VKA (INR in therapeutic range)
- DOAC if procedure is done in through plasma level
- Clopidogrel

Polyps < 5mm

Biopsie

Polyps 5-10 mm

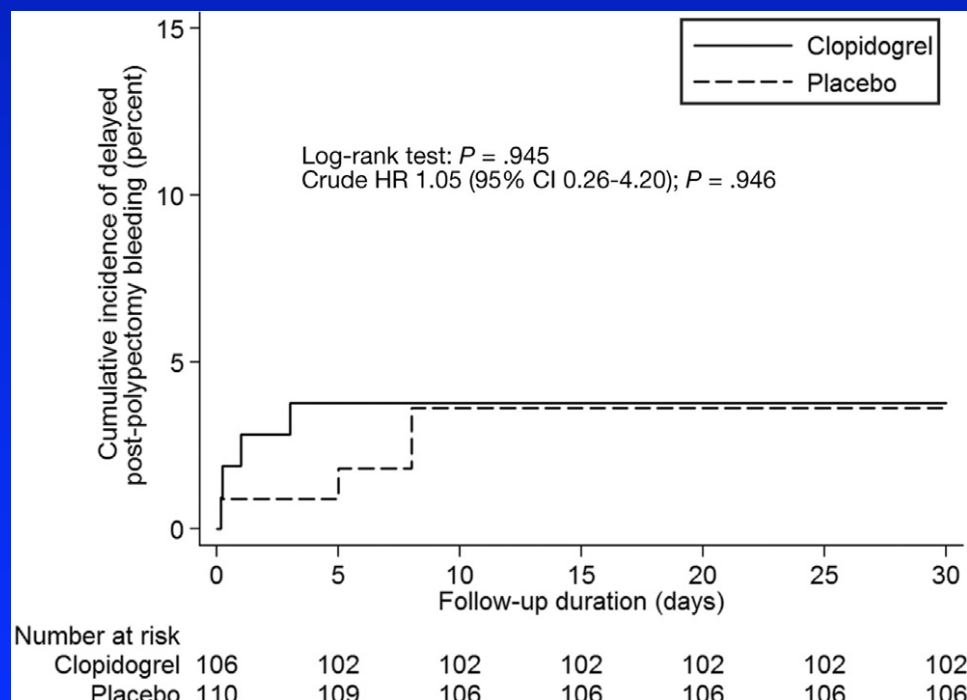
Polyps 10-20mm

- ASS

Diagnostische Gastroskopie
und Koloskopie
(Screeningkoloskopie)

Neue Studien zu Tc-Agg Hemmer und Polypectomie

Chan et al. Gastroenterology 2019;156:918-925



Polypengrösse:

> 5 mm: 60%

5-10 mm: 40%

Sooyeon O et al. Gut an Liver 2018;4:393-401

Harada H et al. World J Gastroenterol 2019;25:457-468

Arimoto J et al. Dig Dis Sci 2018;63:218-227

Neuer Vorschlag

Polypectomy in patients taking antiplatelet agents and oral anticoagulants

Polypectomy is safe
in patients taking:

Polyyps < 5mm

Biopsie

- ASS
Clopidogrel

Polyyps 5-10 mm

- ASS
Clopidogrel

Polyyps 10-20mm

- ASS

Polypectomy is probably safe
with preventive measures in patients taking:

- ~~Clopidogrel~~
- ASS&Clopidogrel
- VKA (INR in therapeutic range)
- DOAC if procedure is done in through plasma level

- ~~Clopidogrel~~
- VKA (INR in therapeutic range)
- DOAC (omit the morning dose)

Blutung verhindern: To Clip or not to Clip ?

Clip nach Polypectomie

Feagins...Spechler, Gastroenterology 2019;157:967–976 (USA)



1100 Patienten
Polypengrösse: 14 mm
97% Hot Snare

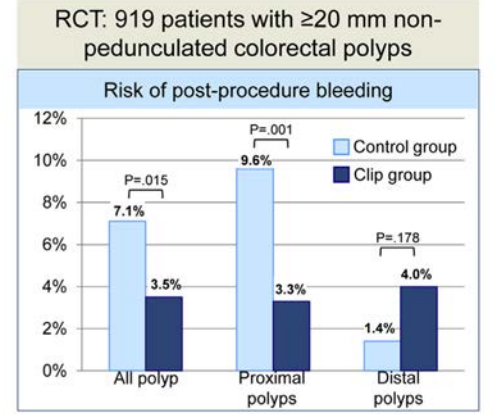
2.3% vs. 2.9% Blutung (n.s.)

Pohl...Rex, Gastroenterology 2019;157:977–984 (USA)

Clip Closure For Bleeding Prevention

Post-procedure bleeding occurs in 5-10% after endoscopic mucosal resection (EMR) of large colorectal polyps.

In this multi-center randomized trial, clip closure of the EMR mucosal defect significantly reduced post-procedure bleeding. The effect appeared to be restricted to large polyp in the proximal colon.

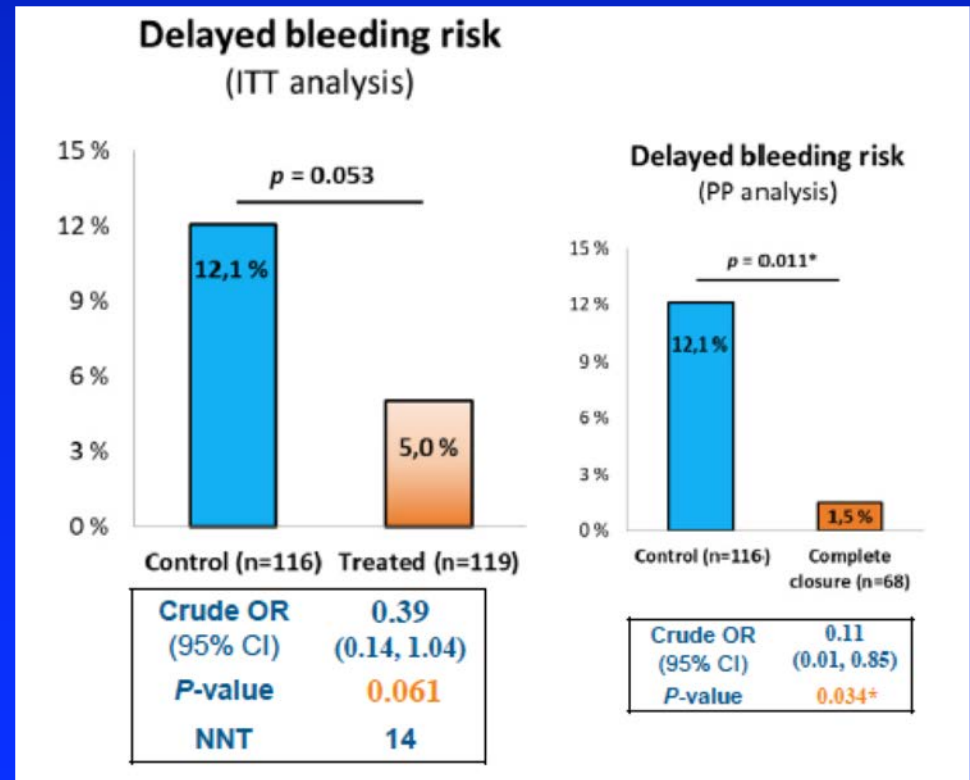


Clip nach Polypectomie

Albeniz, Gastroenterology 2019;157:1213–1221 (ES)

237 Patienten
Polypengrösse: 37 mm
EMR

23% vs. 2.9% Blutung (n.s.)



Verbesserung der Polypen Detection

Verbesserung der Polypendetection: Per-oral Methylen Blue Tabletten

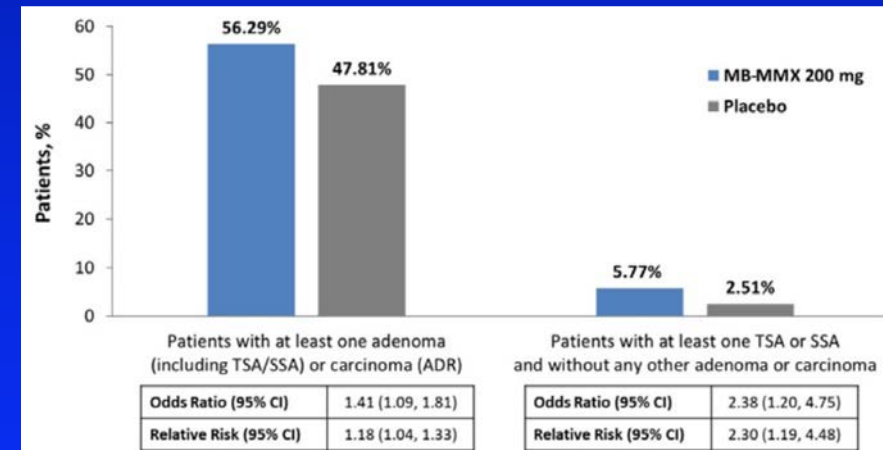
Repici et al. Gastroenterology 2019;156:2198-2207

1205 patients CRC Screening (50-75 J)

20 Zentren (Europe/United States)

2013 – 2016

16 Tabletten mit Methylenblau oder Plazebo



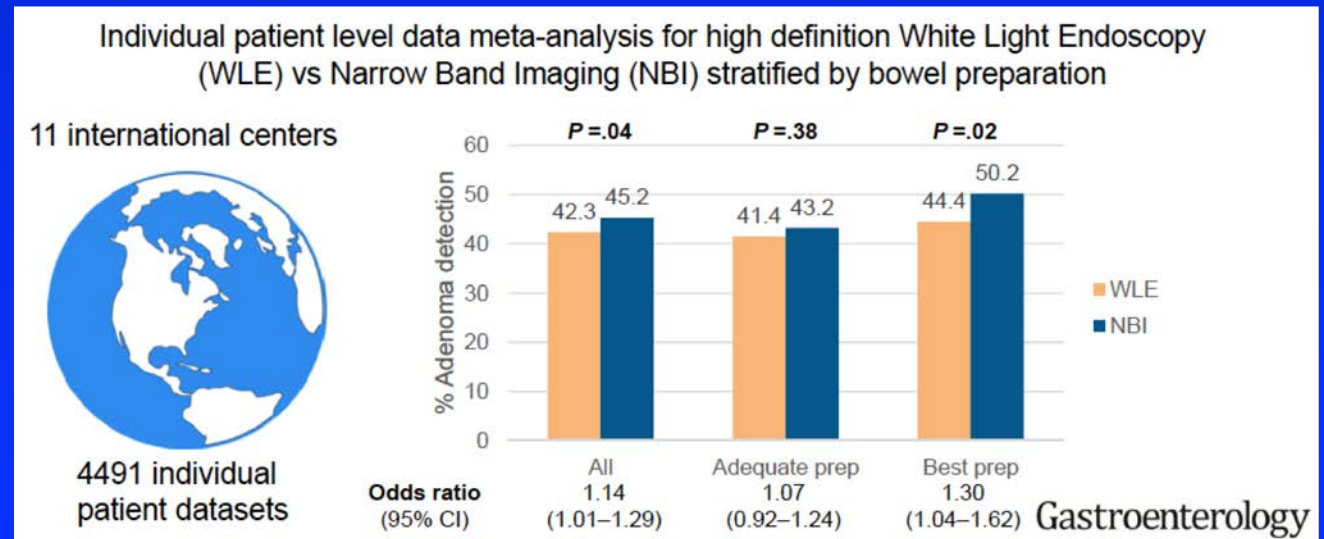
Verbesserung der Polypendetection: Indigocarmin / NBI

Hurt et al. Lancet Gastroenterol Hepatol 2019; 4: 364–75 (UK)

1031 patients CRC Screening
0.2% Indigocarmin vs. Weisslicht

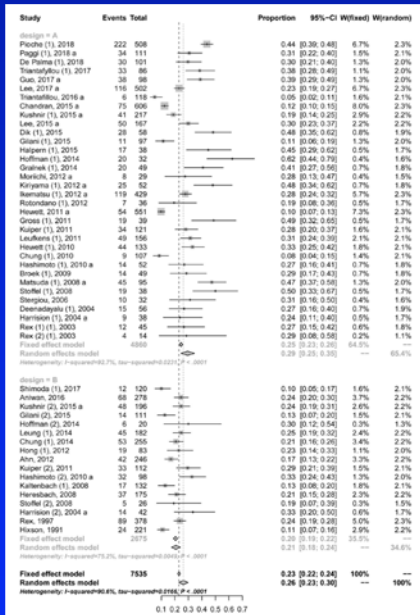
Proximal serrated lesions: 12% vs. 6%

Atkinson et al. Lancet Gastroenterology 2019;157:462–471 (USA Int, Meta-analyse)



Neues zur Adenoma-Detection rate (ADR)

Zhao et al. Gastroenterology 2019;156:1661–1674 (Shanghai)



Abkürzungen:

ADR
AADR
AMR
AAMR
APPC
APIC
PDR
PPIC
SMR
SSMR
PMR
CIR

Erkenntnisse aus der Meta-Analyse:

PMR: 28% und nicht 21%

AMR: 26% und nicht 22%

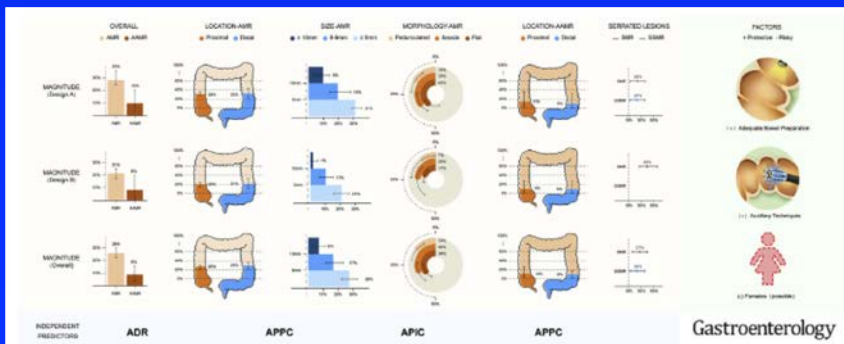
APPC sollte in Guidelines berücksichtigt werden

Flache, kleine Polypen werden eher verpasst

AMR kann verbessert werden durch:

Gute Darmvorbereitung

Hilfsmittel, zB Endocuff



Artificial Intelligence

Automatisierte Polypendetektion

Wang P, et al. Gut 2019;68:1813–1819: Olympus + Shanghai Wision AI Co., Ltd. (China)

Klare et al. Gastrointest Endosc 2019;89:576-82: Olympus + KoloPol (D)

Hassan et al. <http://dx.doi.org/10.1136/gutjnl-2019-319914>: Olympus + GI Genius (Ita USA)

Hassan et al. UEG: Fujinon

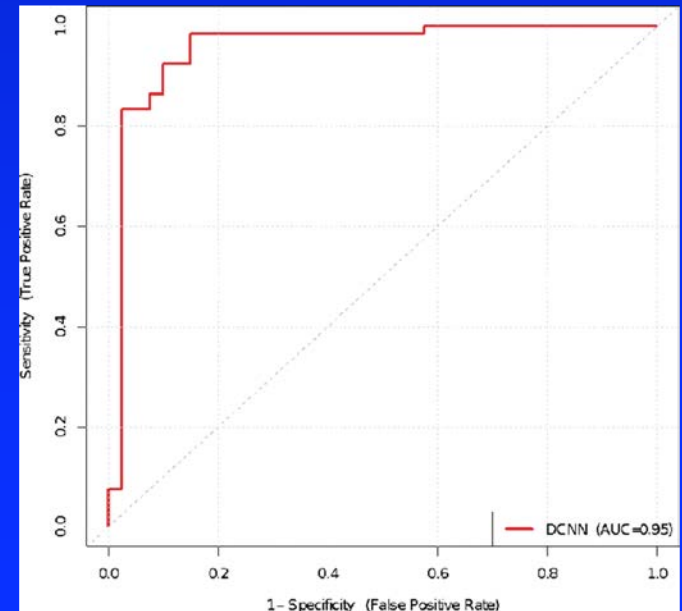
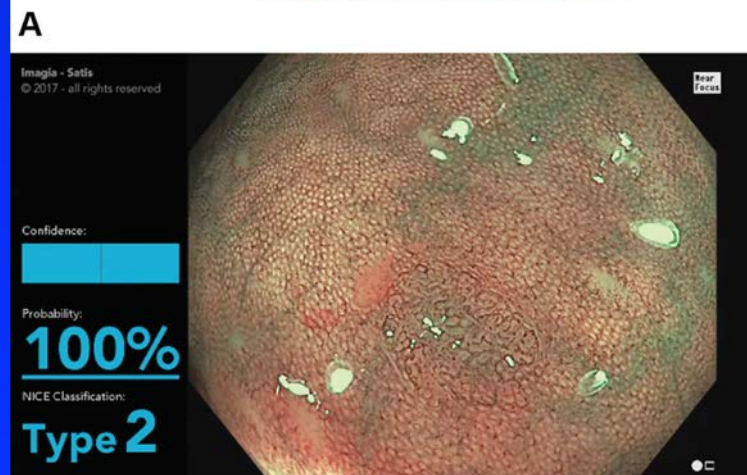
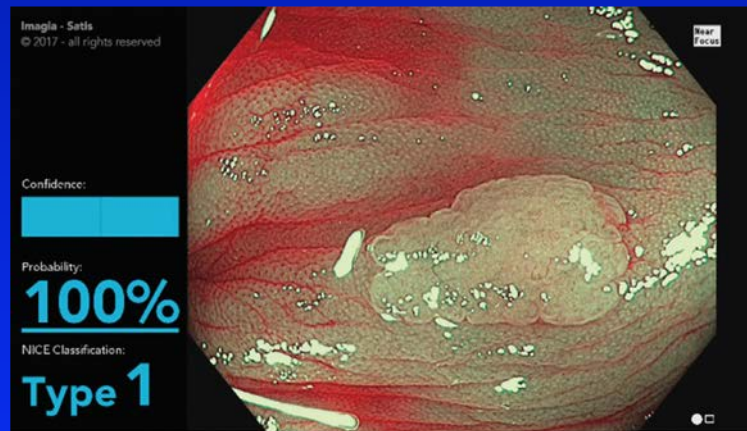
Characterisierung des Polypen

Maligner Polyp?



Real-time differentiation of adenomatous and hyperplastic diminutive colorectal polyps during analysis of unaltered videos of standard colonoscopy using a deep learning model

Michael F Byrne,¹ Nicolas Chapados,^{2,3} Florian Soudan,² Clemens Oertel,² Milagros Linares Pérez,⁴ Raymond Kelly,⁵ Nadeem Iqbal,⁶ Florent Chandelier,² Douglas K Rex⁷

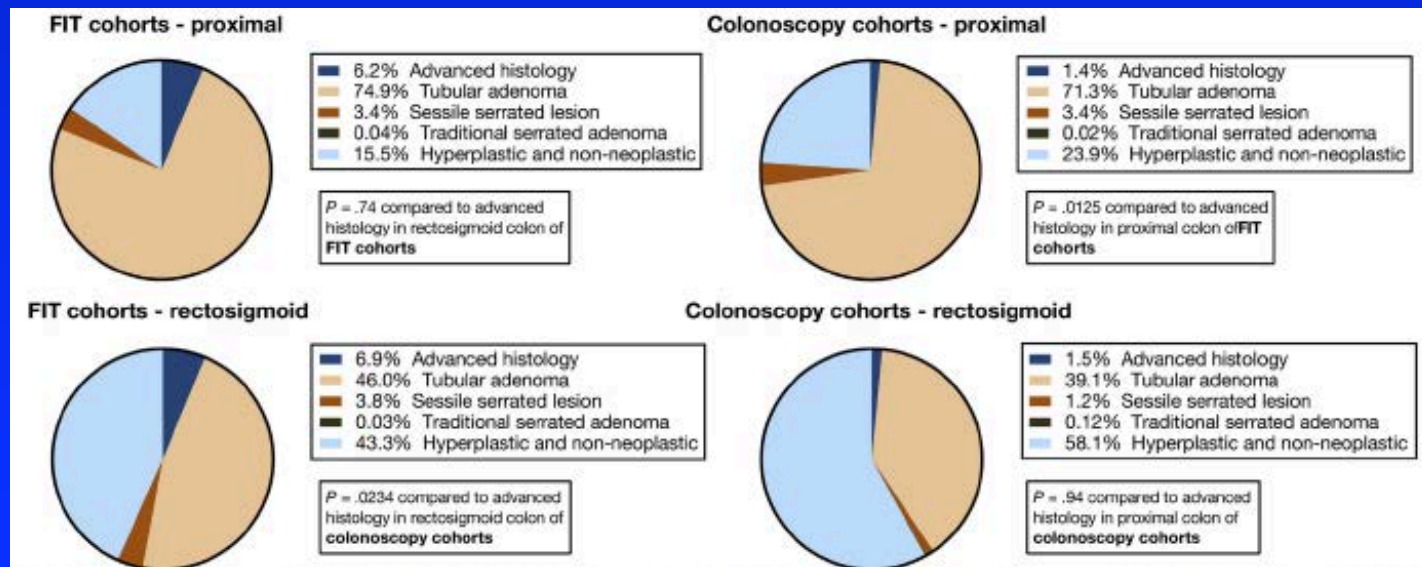


Wie gefährlich sind kleine Polypen?

Vleugels et al. Gastroenterology 2019;156:623–634

- 12 Studien (FIT oder Coloscopie)
- 51,510 (1–5 mm) «diminutive Polyps» 3.8% Advanced Histology 0.04% CRC
- 16,177 (6–9 mm) «small Polyps» 10.9% Advanced Histology 0.3 % CRC

High risk diminutive polyps: 17.6% metachronous advanced neoplasia
Low-risk diminutive polyps: 14.6% metachronous advanced neoplasia



Wie gut erkennt NBI / NICE eine tiefe Invasion?

Puig et al. Gastroenterology 2019;156:75–87 (ES)

- 1634 patients
- 2123 lesions (>1 cm)
- 58 endoscopists

89 (4.2%) deep invasion

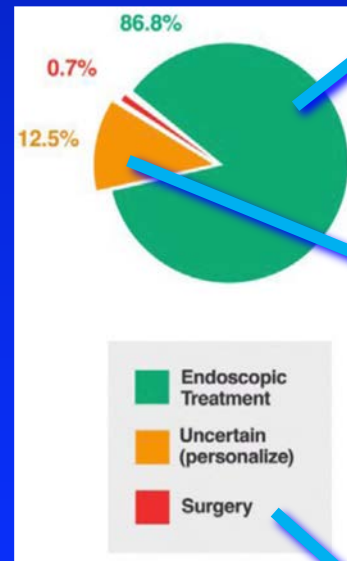
91 (4.3%) endoscopically unresectable

NICE/NBI: deep invasion (>1000um)

Sensitivity 58.4%

Specificity: 96.4%

Backes Y,
Schwartz MP, ter Borg F, et al.
Gut 2019;68:271–279.



KEIN PROBLEM:

- Nicht «depressed»
- Nicht gestielt mit Ulcus
- Nicht »LST GF«

«Up to you»:

N=266

Surgery:

Gestielt mit Ulcus

NB: N=14

Endoskopische Resektion von malignen (T1) Adenomen: Ist das ein Risiko hinsichtlich Metastasen?

Overwater A, Kessels K, Elias SG, et al. Gut 2018;67:284–290.

602 Patienten: 263 primäre Operation
339 sekundäre Operation,
d.h. nach endoskopischer Entfernung des Adenom

	Primäre OP:	sekundäre OP:
Lymphknoten	10/263 (3.8%)	8/339 (2.3%)

5.6% Lokalrezidive:
Kein Unterschied zwischen den beiden Gruppen

Perforation: FTRD®

Endoscopic full-thickness resection in the colorectum with a novel over-the-scope device: first experience

Authors Arthur Schmidt^{1,*}, Peter Bauerfeind^{2,*}, Christoph Gubler², Michael Damm¹, Markus Bauder¹, Karel Caca¹
Institutions ¹ Department of Gastroenterology and Oncology, Klinikum Ludwigsburg, Ludwigsburg, Germany
² Department of Gastroenterology and Hepatology, Zürich, Switzerland

DOI <http://dx.doi.org/10.1055/s-0034-1391781>
Published online: 2015

Surg Endosc (2018) 32:289–299
<https://doi.org/10.1007/s00464-017-5676-9>



CrossMark

Safe and successful resection of difficult GI lesions using a novel single-step full-thickness resection device (FTRD®)

P. V. Valli¹ · J. Mertens¹ · P. Bauerfeind¹

Gut Online First, published on August 10, 2017 as 10.1136/gutjnl-2016-313677

Endoscopy

ORIGINAL ARTICLE

Colonoscopic full-thickness resection using an over-the-scope device: a prospective multicentre study in various indications

Arthur Schmidt,^{1,2} Torsten Beyna,³ Brigitte Schumacher,⁴ Alexander Meining,⁵ Hans-Juergen Richter-Schrag,² Helmut Messmann,⁶ Horst Neuhaus,³ David Albers,⁴ Michael Birk,⁵ Robert Thimme,² Andreas Probst,⁶ Martin Faehndrich,⁷ Thomas Frieling,⁸ Martin Goetz,⁹ Bettina Riecken,¹ Karel Caca¹

UNITED EUROPEAN
GASTROENTEROLOGY
ueg journal

Original Article

Endoscopic full thickness resection (EFTR) of colorectal neoplasms with the Full Thickness Resection Device (FTRD): Clinical experience from two tertiary referral centers in Switzerland

Patrick Aepli¹, Dominique Criblez¹, Stephan Baumeler², Jan Borovicka² and Remus Frei²

United European Gastroenterology Journal
2018, Vol. 6(3) 463–470
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DOI: 10.1177/2050640617728001
journals.sagepub.com/home/ueg
SAGE

Sedation

Wie sicher ist Propofol?

Behrens...Ell Gut 2019;68:445–452

314'190 Endoskopie (2011-14)
40 Endoskopieabteilungen

Ergebnisse:

38 (0.01%) major complication

15 (0.005%) mortality

1019 (0.3%) minor complications

Risikofaktoren für Komplikationen/Mortalität

>60 min: 7.89

ASA >2: 2.29

Therapeutisch: 1.76

Gastro > Colo/ERCP/EUS/Enteroskopie

Sedation agents	
Midazolam (alone) (reference)	1
Propofol (alone)	0.7509
Propofol and midazolam	1.0049
Midazolam and opiate	1.501
Other sedation	1.5458

Nurse-administered propofol sedation (NAPS), yes	
Physician, yes	2.1288
Aaesthetist, yes	4.4639

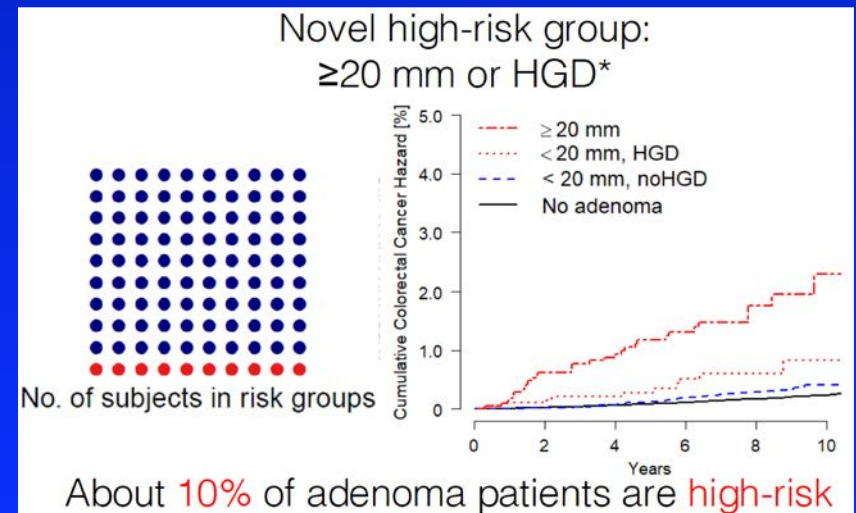
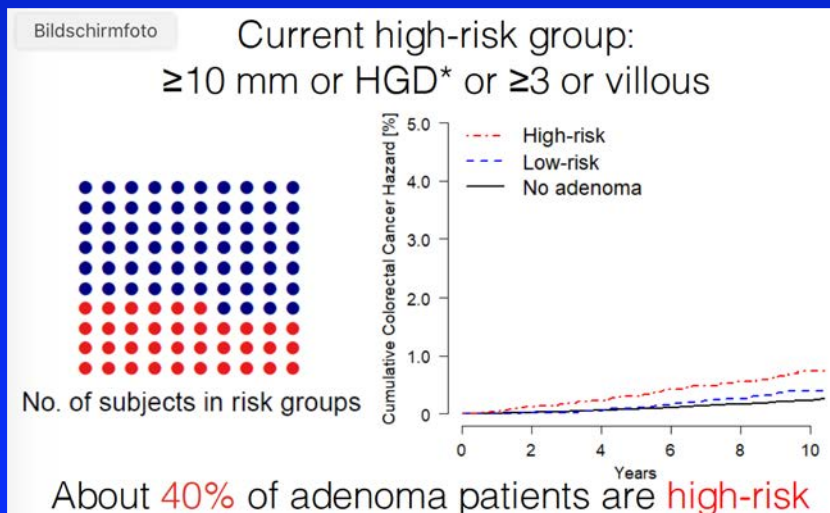
Nachkontrollen nach Polypectomie: zu viele Überwachungskoloskopien?

Wieszczy et al. <https://doi.org/10.1053/j.gastro.2019.09.011>

236,089 individuals (median patient age, 56 years; 37.8% male)

132 centers

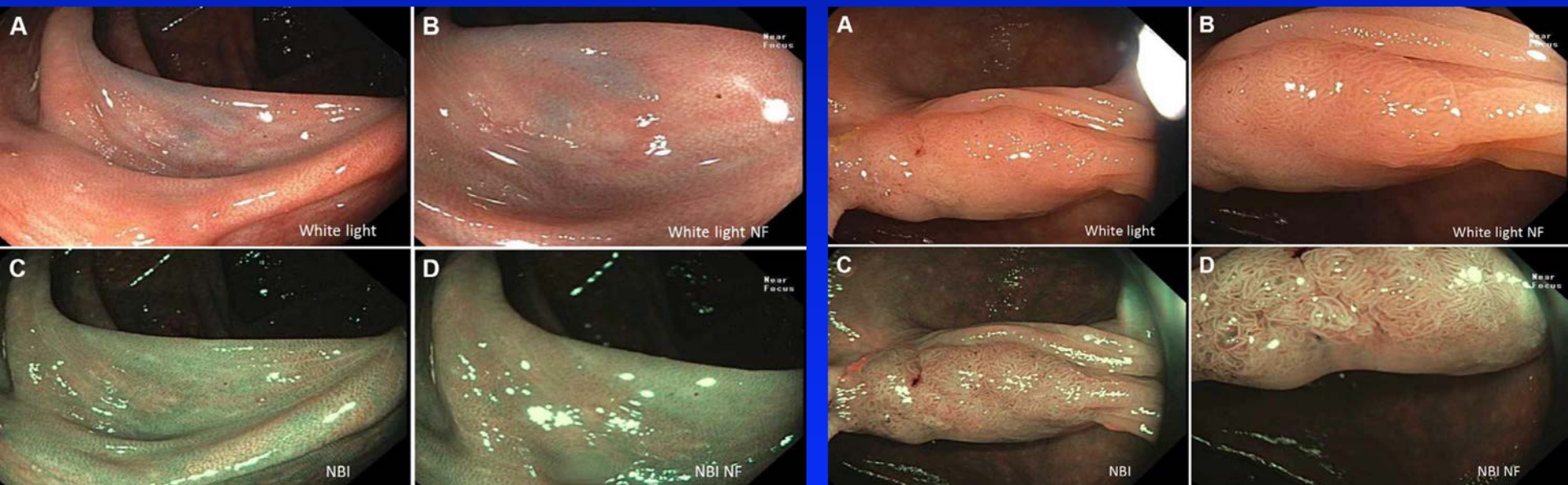
2000 - 2011



Weniger Surveillance Koloskopien nötig bei gleichem Ergebnis

Muss man die Narbe nach Polypectomie biopsieren?

Kandal...Wallace, Gut 2019;68:1633–1641



230 patients 255 EMR scars
recurrent adenoma 24%

negative predictive value (NPV) $\geq 97\%$
positive predictive value (PPV) $\geq 81\%$

Conclusion:

Nicht Biopsieren -> Resezieren

Rektumkarzinom: Radiochemotherapie

→ watch and wait

Chadi et al. Gastroenterology 2018; 155:1795

2-year cumulative incidence of local regrowth

11 studies: 602 pat

cT1/2: 19%

cT3: 31%

cT4: 37%

