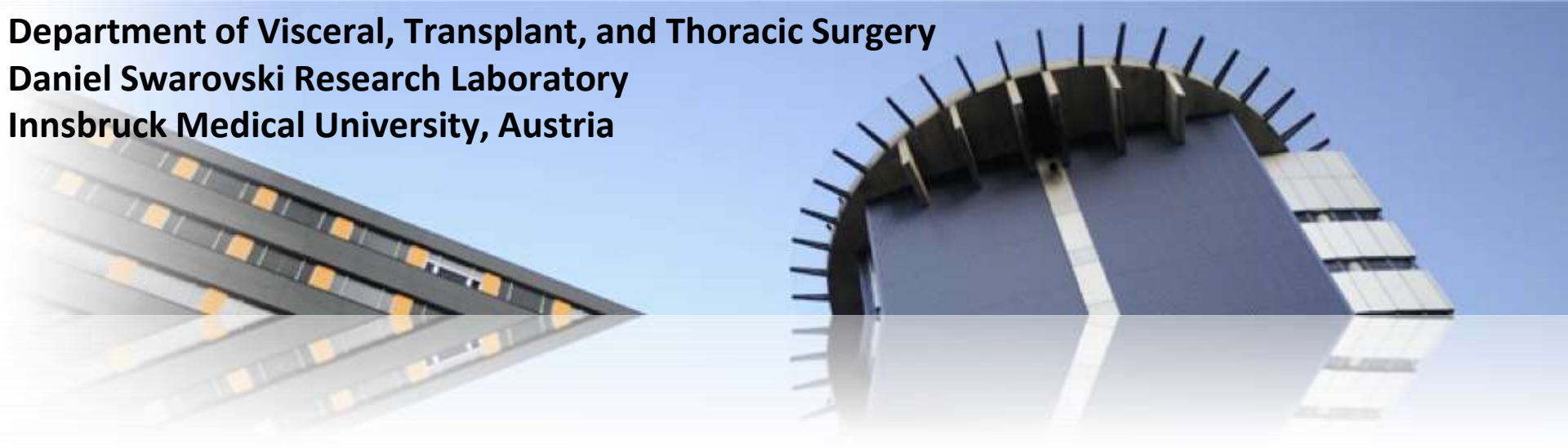
Department of Visceral, Transplant, and Thoracic Surgery
Daniel Swarovski Research Laboratory
Innsbruck Medical University, Austria



Erlebt die präoperative Colonlavage ein Revival ?

R.Kafka

tirol kliniken

Fast track in IBK 9 Nord
Start: 2004

ast track surgery
ies perioperatives mangement

We make them sick !
unter diesem Gesichtspunkt hat Prof.Kehlet viele perioperative Dogmen wie die Darmvorbereitung, prä- und postoperative Nüchternheit hinterfragt

zeigen sie mir einen 80 jährigen, der täglich 2 Liter trinkt

Es fehlt einem ja nicht`s

außer dem Tumor

Disclosure:

gegen MBP

- Daten gegen MPB
- orale AB
- ERAS guidelines Europa
- Compliance with ERAS und guidelines
- Umsetzung MBP in Östrreich
- Kontroverse Europa/Amerika

Identification of core items in the enhanced recovery pathway

Marco Braga a, *, Marco Scatizzi b, Felice Borghi c, Giancarlo Missana d, Danilo Radrizzani e, Marco Gemma f,
on behalf of the Perioperative Italian Society

Table 4
Multivariate logistic regression predictive model for postoperative overall morbidity.

	OR	95% CI	P
Primary analysis (pre-, intra-, and postoperative ERAS items considered)			
Early stop of i.v. fluids	1.34	1.23–1.47	<0.001
Secondary analysis (only pre- and intraoperative ERAS items considered)			
No bowel preparation	0.57	0.35–0.92	0.021
Removal of NGT at the end of surgery	0.49	0.27–0.89	0.019
Age (1-yr)	1.01	1–1.01	0.050

Primary analysis whole model $P < 0.001$. Pseudo $R^2 = 0.0783$.
Secondary analysis whole model $P = 0.0029$. Pseudo $R^2 = 0.0194$.

Clinical Nutrition ESPEN 25 (June 2018)

Darmvorbereitung Literatur

Contant CM, et al.

Mechanical bowel preparation for elective colorectal surgery: a multicentre randomised trial.

Lancet. 2007 Dec 22;370(9605):2112-7.

Bretagnol F, et al.

Rectal cancer surgery without mechanical bowel preparation.

Br J Surg. 2007 Oct;94(10):1266-71.

Wille-Jørgensen P, et al.

Pre-operative mechanical bowel cleansing or not? an updated metaanalysis.

Colorectal Dis. 2005 Jul;7(4):304-10. Review.

Darmvorbereitung Literatur

	With mechanical bowel preparation† n=670	Without mechanical bowel preparation† n=684	Difference (95% CI)	p value
No postoperative complication	462 (69·0%)	452 (66·1%)	−2·9 (−7·9 to 2·1)	0·28
Anastomotic leakage	32 (4·8%)	37 (5·4%)	0·6 (−1·7 to 2·9)	0·69
Minor anastomotic leakage	6 (0·9%)	6 (0·9%)	0·0 (−1·0 to 1·0)	1·0
Major anastomotic leakage	26 (3·9%)	31 (4·5%)	0·6 (−1·6 to 2·8)	0·64
Wound infection				0·82
Mild wound in				1·0
Severe wound				0·83
Fascia dehiscenc				0·69
Urinary tract infection	71 (10·6%)	70 (10·2%)	−0·4 (−3·6 to 2·9)	0·90
Pneumonia	39 (5·8%)	51 (7·5%)	1·6 (−1·0 to 4·3)	0·27
Intra-abdominal abscess	15 (2·2%)	32 (4·7%)	2·4 (0·5 to 4·4)	0·02
Abscess				0·85
Abscess				0·001
Secondary				0·99
Deaths	20 (3·0%)	26 (3·8%)	0·8 (−1·1 to 2·7)	0·50
Faecal contamination*	..	..	..	0·42
Clean contaminated	389 (58·1%)	380 (55·8%)	−2·3 (−7·6 to 2·9)	0·41
Contaminated	250 (37·4%)	276 (40·5%)	3·2 (−2·0 to 8·4)	0·26
Dirty	30 (4·5%)	25 (3·7%)	−0·8 (−2·9 to 1·3)	0·54
Operation time (min)	120 (90–150)	120 (90–144)	0·0 (−5·0 to 5·0)	0·48
Resumption of normal diet (days)	6 (4–8)	6 (4–8)	0·0 (−0·4 to 0·4)	0·91
Hospital stay (days)†	10 (8–14)	10 (8–13)	0·0 (−1·0 to 1·0)	0·40

BJS:
CONCLUSION: MBP does not lower the complication rate and can be omitted before elective colonic resection.

Lancet
INTERPRETATION: We advise that mechanical bowel preparation before elective colorectal surgery can safely be abandoned.

Darmvorbereitung Literatur

Bretagnol F et al.

Rectal cancer surgery without mechanical bowel preparation.

	No MBP ($n = 52$)	MBP ($n = 61$)
Age (years)*	61 (30–87)	64 (28–85)
Tumour stage		
0, I or II		
III or IV		
Preoperative radiotherapy		
Type of coloanal anastomo		
Stapled		
Handsewn		
J pouch		
Temporary ileostomy		
Duration of operation (min)*		

The present study has provided preliminary evidence for the safety of rectal cancer surgery without MBP. It showed no benefit of MBP before anterior resection, but that omission of bowel preparation might have a positive impact in terms of decreased morbidity and a shorter hospital stay.

Infectious abdominal complications	6 (12)	7 (11)	1·000
Clinical anastomotic leakage	5 (10)	5 (8)	
Wound abscess	0 (0)	2 (3)	
Peristomal abscess	1 (2)	0 (0)	
Infectious extra-abdominal complications	0 (0)	7 (11)	0·014
Urinary tract infection	0 (0)	2 (3)	
Pneumopathy	0 (0)	5 (8)	
Total	6 (12)	14 (23)	0·141

Fazit Darmvorbereitung:

- keine routinemäßige orthograde Darmvorbereitung bei elektiven chirurgischen Eingriffen am Magen/Darmtrakt
- Bei linksseitigen Koloneigriffen Yal am Vorabend und Chlysmoleinlauf morgends

orthograde Lavage nur bei subtotal stenosierenden Tumoren, geplanter protektiver Ileostomie oder intraoperativer Koloskopie !

Nebenwirkung orthograde Darmlavage bei älteren Patienten !!

Darmvorbereitung

Wirkung/Nebenwirkung

Weniger Stuhlmasse im Darm - ja

NW: flüssiger Darminhalt – spillage !

Reduktion der Darmflora – nein

(Santos JC et.al Br J Surg 1994)

NW: pseudomembranöse Colitis

Morbidität – MBP - ja (Aspiration, Dehydration, Verletzungen)

Einfluss auf Beschaffenheit des Darms - ja

Physiologic effects of bowel preparation.

Bowel preparation has significant adverse physiologic effects, which may be attributed to dehydration.

Holte K[1], Nielsen KG, Madsen JL, Kehlet H.

Dis Colon Rectum. 2004 Aug;

Morphologic alterations of mechanical bowel preparation before elective colorectal surgery: a randomized trial

Pascal Bucher,..Philipp Morell, Dis Colon & rectum 2006

Superficial mucus loss
Epithelia cell loss
edema in lamina propria
Lymphocyte cell infiltration and PMN cell infiltration

Mechanical bowel preparation ist associated with **structural alterations and inflammatory changes** in the large bowel wall

ERAS Guidelines Europe

Summary and recommendation:

MBP should not be used routinely in colonic surgery.

Evidence level:

High

Recommendation grade:

Strong

Preoperative bowel preparation

Mechanical bowel preparation (MBP) has adverse physiologic effects attributed to dehydration [34], is distressing for the patient, and is associated with prolonged ileus after colonic surgery [35]. Moreover, it has been shown that patients receiving MBP have a tendency towards a higher incidence of spillage of bowel contents, which might increase the rate of postoperative complications [36]. Thus, the "dogma" of MBP before elective abdominal surgery has been strongly challenged. The last Cochrane review of 2011 (which included 18 RCTs with 5,805 patients undergoing elective colorectal surgery) could not find statistically significant differences between patients with MBP versus no MBP, or with MBP versus rectal enema alone, in terms of anastomotic leakage, mortality rates, need for reoperation and wound infections [37].

Most of the RCTs on MBP have included patients undergoing open colorectal surgery, and the extrapolation

U. O. Gustafsson • M. J. Scott • W. Schwenk … O. Ljungqvist
World J Surg (2013) 37:259–284

Randomized clinical trial

Randomized clinical trial of oral and intravenous *versus* intravenous antibiotic prophylaxis for laparoscopic colorectal resection

A. Ikeda, T. Konishi, M. Ueno, Y. Fukunaga, S. Nagayama, Y. Fujimoto, T. Akiyoshi and T. Yamaguchi

Department of Gastroenterological Surgery, Cancer Institute Hospital of the Japanese Foundation for Cancer Research, 3-8-31 Ariake Koto-ku, Tokyo, 135-8550, Japan

Correspondence to: Dr T. Konishi (e-mail: tkonishi-tky@umin.ac.jp)

Conclusion: Intravenous perioperative antimicrobial prophylaxis alone is not inferior to combined preoperative oral and intravenous perioperative prophylaxis with regard to SSI in patients with colorectal cancer undergoing elective laparoscopic resection. Registration number: UMIN000019339 (http://www.umin.ac.jp/ctr/).

BJS 2016; 103: 1608–1615

received 1 g cefmetazole intravenously at least 30 min before skin incision, then every 3 h during surgery until skin closure. After completion of surgery, two additional doses of intravenous prophylaxis were given within 24 h. Patients in the combined oral/intravenous (oral/IV) group received two oral doses of 750 mg metronidazole with 1000 mg kanamycin at 15.00 and 21.00 hours on the day before the surgery in addition to the same intravenous antibiotic regimen as patients in the IV-only group.

All patients, except those with bowel obstruction, underwent mechanical bowel preparation with magnesium citrate at 08.00 hours and sodium picosulfate at 11.00 hours on the day before surgery. Patients had all hair within the proposed surgical field shaved using electrical hair-clippers after induction of anaesthesia, and the skin was prepared

THE LANCET Infectious Diseases

Available online 2 November 2016
In Press, Corrected Proof — Note to users

Series

New WHO recommendations on preoperative measures for surgical site infection prevention: an evidence-based global perspective

Dr Benedetta Allegranzi, MD[a,*], Peter Bischoff, MD[b], Stijn de Jonge, MD[c], N Zeynep Kubilay, MD[a], Bassim Zayed, MD[a], Stacey M Gomes, MS[d], Mohamed Abbas, MD[e], Jasper J Atema, MD[c], Sarah Gans, MD[c], Miranda van Rijen, MD[f], Prof Marja A Boermeester, MD[c], Prof Matthias Egger, MD[g], Prof Jan Kluytmans, MD[f,h], Prof Didier Pittet, MD[e,i], Prof Joseph S Solomkin, MD[d,j], the WHO Guidelines Development Group[†],

Show more

http://dx.doi.org/10.1016/S1473-3099(16)30398-X

WHAT'S THE SOLUTION?

A range of precautions - **before, during and after surgery** - reduces the risk of infection

BEFORE SURGERY

Ensure patients bathe or shower

normal soap

Do not shave patients

Clipping only in selected cases !!!

Only use antibiotics when recommended

Single shot before skin inzision

Use chlorexidine alcohol-based antiseptic solutions to prepare skin

Mupirocin nasal in MRSA carrier

Surgical scrub technique: hand wash or alcohol-based handrub

DURING SURGERY

Limit the number of people and doors being opened

Ensure all surgical equipment is sterile and maintain asepsis throughout surgery

AFTER SURGERY

Do not continue antibiotics to prevent infection – **this is unnecessary and contributes to the spread of antibiotic resistance**

Check wounds for infection and use standard dressings on primary wounds

Studien

Name	Jahr	MBP		Medikamente			
				Oral			
Name	jahr	mbp	MBP, Applizierte Med	Medikament	Applikationsw	Darreichungsschema	
		ob eine Mechanische Darmvorbereit		Placebo weggelassen			
Ikeda A1, Koni	2016	ja	Applizierte Medikame				
Hata H1, Yama	2016	ja	Applizierte Medikame				
Hjalmarsson C	2015	ja	Applizierte	Sulfamethoxa:	oral	2 h vor Operationsstart 0,8 g	T
Sadahiro S,	2014	ja	Applizierte				
Oshima T, Tak	2013	ja	Applizierte Medikame				
Kobayashi M, I	2007	ja	Applizierte Medikame				
Espin-Basany I	2005	ja	Applizierte Medikam				
Lewis RT	2002	ja	Applizierte Medikame				
Ishida H,	2001	ja	Applizierte Medikame				
Yabata E, Okat	1997	ja	Applizierte Medikame				
Taylor EW1,	1994	ja	Applizierte Medikame				
Schoetz DJ Jr1,	1990	ja	Applizierte	Neomycin	oral	Am Operationsvortag um 13 Uhr; 14 Uhr; 23 Uhr; je 1 g	E
Stellato TA1,	1990	ja	Applizierte Medikame	Neomycin	oral	Einen Tag präoperativ um 13 Uhr 14 Uhr; 23 Uhr; je 1 g	E
Nøhr M1,	1990	ja	Applizierte Medikame				
Khubchandan	1989	ja	Applizierte Medikame				
Reynolds JR,	1989	ja	Applizierte Medikame				
Kling PA, Dahlg	1989	ja	Applizierte	Neomycin	oral	Einen Tag präoperativ um 12 Uhr; 14 Uhr; 23 Uhr; je 1 g	E
Coppa GF, Eng	1988	ja	Applizierte				
Petrelli NJ1,	1988	ja	Applizierte	Neomycin	oral	Einen Tag präoperativ um 13 Uhr; 14 Uhr; 23 Uhr; je 1 g	E
Lau WY, Chu KY	1988	ja	Applizierte	Neomycin	oral	Einen Tag präoperativ um 13 Uhr; 14 Uhr; 23 Uhr; je 1 g	E
Raahave D, He	1988	ja	Applizierte	Neomycin	oral	Einen Tag präoperativ. 3 mal je 1 g	E
Playforth MJ, S	1988	ja	Applizierte				
Burdon DW,	1987	ja	Applizierte Medikame	Neomycin	oral	Einen Tag präoperativ um 13 Uhr; 14 Uhr; 23 Uhr; je 1 g	E
University of M	1987	ja	Applizierte Medikame	Tinidazol	oral	Einen Tag präoperativ um 22 Uhr 2 g	
Hancke E,	1986	ja	Applizierte	Neomycin	oral	Am Operationsvortag um 13 Uhr; 14 Uhr; 23 Uhr; je 1 g	M
Weaver M, Bur	1986	ja	Applizierte Medikame	Neomycin	oral	Am Einen Tag präoperativ um 13 Uhr; 14 Uhr; 23 Uhr; je 1 g	E
University of M	1986	ja	Applizierte Medikame	Tinidazol	oral	Einen Tag präoperativ um 22 Uhr 2 g	
Jagelman DG,	1985	ja	Applizierte Medikame	Neomycin	oral	Einen Tag präoperativ 3 x je 1 g im Abstand von 3 h	
Hildebrandt J,	1985	ja	Applizierte Medikame	Neomycin	oral	2 mal je 3 g mit 3 h Zeitunterschied	
Hansell DT,	1983	ja	Applizierte	Kanamycin	oral	3 Tage lang präoperativ alle 6 h und am Tag wo die Operation stattfand um 06 Uhr; je 1	M
Kaiser AB,	1983	ja	Applizierte Medikame				
Condon RE,	1983	ja	Applizierte	Erythromycin	oral	Einen Tag präoperativ um 13 Uhr; 14 Uhr; 23 Uhr; je 1 g	M
Coppa GF, Eng	1983	ja	Applizierte Medikame	Neomycin	oral	in den präoperativen 24 h insgesamt 8 g in aufgeteilte Dosen	E
Lazorthes, Laz	1982	ja	Applizierte Medikame	Kanamycin	oral	Drei Tage lang präoperativ alle 6 h; je 1 g	M
Beggs FD,	1982	ja	Die Darmvorbereitung	Neomycin	oral	in den 5 Tage vor der Operation 4 x am Tag je 1 g	M
Aeberhard P,	1981	ja	Applizierte	MEtronidazol	oral	vom 3. bis zum 2. präoperativen Tag je um 06, 14 und 21 Uhr je 0,2 g	K
Lewis RT,	1981	ja	Applizierte	Metronidazol	oral	in den 2 präoperativen Tagen 3 x am Tag je 0,75 g	E
Dion YM,	1980	ja	Applizierte Medikame	Neomycin	oral	Einen Tag präoperativ 3 x je 1 g	M
Keighley MR,	1979	ja	Applizierte	Metronidazol	oral	in den 2 präoperativen Tagen je 1,2 g . Die letzte Verabreichung 36 h präoperativ.	K
Barber MS, Hir	1979	ja	Applizierte	Neomycin	oral	nach Nichols et all. = Quelle Nichols RL, Condon RE: präoperative preparation of the colon	E

New WHO recommendations on preoperative measures for surgical site infection prevention: an evidence-based global perspective

*Benedetta Allegranzi, Peter Bischoff, Stijn de Jonge, N Zeynep Kubilay, Bassim Zayed, Stacey M Gomes, Mohamed Abbas, Jasper J Atema, Sarah Gans, Miranda van Rijen, Marja A Boermeester, Matthias Egger, Jan Kluytmans, Didier Pittet, Joseph S Solomkin, and the WHO Guidelines Development Group**

(6) MBP with the use of oral antibiotics	Is MBP combined with oral antibiotics effective for the prevention of SSI in colorectal surgery?	Preoperative oral antibiotics combined with MBP are suggested for use in adult patients undergoing elective colorectal surgery	Conditional recommendation (moderate)	It may require organisational resources for appropriate administration and possible additional costs; the oral antibiotics commonly used for MBP are inexpensive
(7) MBP without the use of oral antibiotics	Is MBP without oral antibiotics effective for the prevention of SSI in colorectal surgery?	MBP alone (without the administration of oral antibiotics) should not be used in adult patients undergoing elective colorectal surgery	Strong recommendation (moderate)	It may require organisational resources for appropriate administration and possible additional costs; the oral antibiotics commonly used for MBP are inexpensive

www.thelancet.com/infection Vol 16 December 2016

Colorectal Dis. 2009 Feb;11(2):162-7. doi: 10.1111/j.1463-1318.2008.01559.x. Epub 2008 May 3.

'Fast-track' colonic surgery in Austria and Germany--results from the survey on patterns in current perioperative practice.

Hasenberg T[1], Keese M, Längle F, Reibenwein B, Schindler K, Herold A, Beck G, Post S, Jauch KW, Spies C, Schwenk W, Shang E.

The response rate was 63% in Austria (76 centres) and 30% in Germany (385 centres).
Mechanical bowel preparation is used by the majority
Austria, 91%
Germany, 94%

CONCLUSION: Although there is an evident benefit of fast-track management, the survey shows that they are not yet widely used as a routine in Austria and Germany.

Original Paper

Digestive Surgery

Dig Surg 2009;26:123–129
DOI: 10.1159/000206149

Multimodal Perioperative Rehabilitation in Elective Conventional Resection of Colonic Cancer: Results from the German Multicenter Quality Assurance Program 'Fast-Track Colon II'

Chris Braumann[a] Nina Guenther[a] Peter Wendling[b] Rainer Engemann[c]
Christoph T. Germer[d] Wolfgang Probst[e] Hans-P. Mayer[f] Bernd Rehnisch[g]
Michael Schmid[h] Klaus Nagel[i] Wolfgang Schwenk[a]
for the 'fast-track Colon II' (FTCII) Quality Assurance Group[1]

Table 3. Factors of perioperative treatment and postoperative recovery in 748 patients undergoing multimodal rehabilitation for open resection of colonic tumors

	n	%
No mechanical bowel preparation	629	84.1

Surgeon. 2018 Apr 14. pii: S1479-666X(18)30037-4. doi: 10.1016/j.surge.2018.03.003. [Epub ahead of print]

How does the application of surgical components in enhanced recovery programs for colorectal surgery change over time?

Veziant J[1], Leonard D[2], Pereira B[3], Slim K[4]; French speaking Group for Enhanced Recovery after Surgery (GRACE).

RESULTS: 2565 patients with a mean age of 63.6 ± 14.4 years from 63 colorectal centers were included. There were 1853 (72.2%) colectomies and 558 (21.7%) rectal resections. The median duration of hospital stay was 5 days [Interquartiles 4-8]. Overall morbidity was 21.9%, surgical morbidity was 8.1%, including 2.8% anastomotic fistulae. Overall, the ERP component most often applied with was postoperative nasogastric tube omission (93.6%), followed by laparoscopic approach (81.7%), absence of drainage (74.9%), and colonic preparation omission (67.3%). Implementation of surgical components significantly decreased over time: less laparoscopy (from 86.8% to 76.6%, p < 0.001), less drain omission (from 88.7% to 72%, p < 0.001), less nasogastric tube omission (from 100% to 93.4%, p = 0.002) and less colonic preparation omission (from 73.6% to 65.6%, p = 0.01).

Compliance mit ERAS Elementen geht zurück !

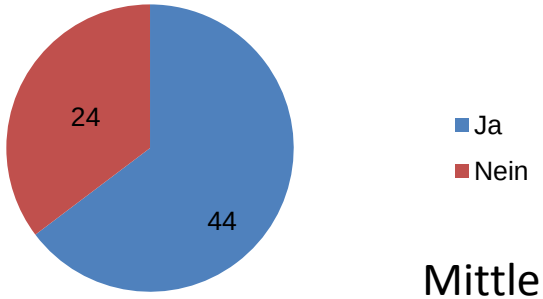
Umsetzung von „ERAS“ in den österreichischen Krankenanstalten

Diplomarbeit Maria Kuster 2017

Der Fragebogen wurde per Mail an 81 öffentliche Krankenhäuser in Österreich gesendet. Von 69 Krankenhäusern wurde ein ausgefüllter Fragebogen zurückgesendet. Das entspricht einer

Rückmeldungsquote von 85,2 %

44 (62 % haben ERAS Protokoll)



Jahr	Anzahl	Anteil (%)
1998	1	2,3
2004	1	2,3
2005	2	4,5
2006	2	4,5
2007	5	10,4
2008	6	13,6
2009	3	6,8
2010	4	9,1
2011	4	9,1
2012	6	13,6
2013	2	4,5
2014	1	2,3
2016	1	2,3

TABELLE 1: ZEITANGABEN BEGINN MIT ERAS

Mittlere Dauer bis Anwendung Jahre :
Uni: 8 Zentrum: 12 peripher: 12

Darmvorbereitung
58 orale Darmreinigung durchführen (84 %)
11 Abteilungen verneinten die Frage (16 %.)

Wobei 18 (31%) nur bei Rektumresektion mit protektiver ileostomie vorbereiten

Änderung der Vorgehensweise und Gabe eines nichtresorbierbaren Antibiotikums.

	Anzahl	Anteil (%)	
Ja	13	18,8	
Nein	45	65,2	
Nicht beantwortet	11		16

7 davon wissen noch nicht welches,
4 geben Rifaximin, 1 Erythromycin, 1 x Neomycin

Is There a Role for Oral Antibiotic Preparation Alone Before Colorectal Surgery? ACS-NSQIP Analysis by Coarsened Exact Matching

DISEASES OF THE COLON & RECTUM 2017

Richard Garfinkle, M.D. • Jad Abou-Khalil, M.D., M.Sc. • Nancy Morin, M.D.

	Univariate OR after coarsened exact matching (95% simultaneous CI with Bonferroni correction)	*p*	*Multivariate OR after coarsened exact matching (95% simultaneous CI with Bonferroni correction)*	*p*
Mechanical bowel preparation alone vs no preparation				
Surgical site infection	0.85 (0.75–0.98)	0.008	0.90 (0.80–1.01)	0.033
Anastomotic leak	0.88 (0.75–1.06)	0.028	0.86 (0.74–1.02)	0.038
Ileus	0.80 (0.71–0.89)	0.007	0.89 (0.82–0.97)	0.007
Major morbidity	0.84 (0.75–0.94)	0.008	0.91 (0.84–1.01)	0.037
Mortality	0.50 (0.32–0.69)	<0.001	0.54 (0.41–0.71)	<0.001
Oral antibiotic preparation alone vs no preparation				
Surgical site infection	0.62 (0.46–0.82)	0.004	0.63 (0.45–0.87)	<0.001
Anastomotic leak	0.58 (0.37–0.90)	0.007	0.60 (0.34–0.97)	0.008
Ileus	0.78 (0.61–0.98)	0.008	0.79 (0.59–0.98)	0.009
Major morbidity	0.74 (0.58–0.94)	0.008	0.73 (0.55–0.96)	0.003
Mortality	0.49 (0.19–0.99)	0.010	0.32 (0.08–1.18)	0.066
Combined mechanical bowel and oral antibiotic preparation vs no preparation				
Surgical site infection	0.42 (0.35–0.49)	<0.001	0.44 (0.40–0.49)	<0.001
Anastomotic leak	0.52 (0.41–0.65)	<0.001	0.53 (0.44–0.63)	<0.001
Ileus	0.57 (0.50–0.69)	<0.001	0.68 (0.62–0.75)	<0.001
Major morbidity	0.58 (0.51–0.65)	<0.001	0.65 (0.60–0.72)	<0.001
Mortality	0.42 (0.30–0.58)	<0.001	0.54 (0.39–0.75)	<0.001
Combined mechanical bowel and oral antibiotic preparation vs oral antibiotic preparation alone				
Surgical site infection	0.78 (0.55–1.08)	0.081	0.86 (0.57–1.29)	0.33
Anastomotic leak	0.88 (0.48–1.51)	0.31	0.68 (0.31–1.51)	0.22
Ileus	0.86 (0.66–1.12)	0.058	0.86 (0.62–1.20)	0.25
Major morbidity	0.71 (0.51–0.93)	0.008	0.82 (0.59–1.13)	0.12
Mortality	0.77 (0.28–1.84)	0.63	0.88 (0.12–6.33)	0.87

lone by

The Role of Bowel Preparation in Colorectal Surgery

Results of the 2012–2015 ACS-NSQIP Data

Aaron L. Klinger, MD, Heather Green, MS,* Dominique J. Monlezun, MD, PhD, MPH,† David Beck, MD,* Brian Kann, MD,* Herschel D. Vargas, MD,* Charles Whitl… D,* and David Margolin, MD**

Conclusions: Combined MBP/ABP … cantly lower rates of SSI, organ space infection, wou… omotic leak than no preparation and a lower … Combined bowel preparation signific… ious complications in colon and rect… risk of *Clostridium difficile* infection. … tive colon or rectal resection we recommend … both mechanical agents and oral antibiotics whene…

Nur MBP
schlechteste Variante !
Keine Angabe zu AB

TABLE 3. Modified Forwa… ward Stepwise Regression Augmenting a Doubly Robust Propensity Score-adjusted Multivariable Regression of P… rative Outcomes by Bowel Prep (N = 27,087)

	Surgical Site Infection			Organ Space Infection			Anastomotic Leak			Wound Dehiscence			*C. difficile*		
Bowel Prep	**OR**	**95% CI**	***P***	**OR**	**95% CI**	***P***	**OR**	**95% CI**	***P***	**OR**	**95% CI**	***P***	**OR**	**95% CI**	***P***
Dual							*-Reference-*								
Mechanical	2.25	1.91–2.65	<0.001	1.64	1.37–1.97	<0.001	1.60	1.32–1.96	<0.001	1.85	1.16–2.95	0.010	1.71	0.98–3.00	0.059
Antibiotic	1.61	1.20–2.16	0.002	1.07	0.74–1.54	0.731	1.01	0.67–1.51	0.969	1.56	0.68–3.58	0.296	1.27	0.43–3.69	0.666

Surg Endosc
DOI 10.1007/s00464-017-5722-7

GUIDELINES

Keine Angabe über was
Und wann ???

Clini guideline for enhanced recovery after colon a rgery from the American Society of Colon and Rectal Su s (ASCRS) and Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

Joseph C. Carmichael[1] · Deborah S. Keller[2] · Gabriele Baldini[3] · Liliana Bordeianou[4] · Eric Weiss[5] · Lawrence Lee[6] · Marylise Boutros[6] · James McClane[7] · Scott R. Steele[8] · Liane S. Feldman[6,9]

Mechanical bowel preparation plus oral antibiotic bowel preparation prior to colorectal surgery is the preferred preparation and associated with reduced complication rates. Grade of recommendation: weak recommendation based on moderate quality evidence, 2B

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EDITORIAL

Mechanical bowel preparation before colorectal surgery. Where do we stand?

In summary, rather than questioning the futility of MBP alone, these studies have stressed the importance of preoperative intestinal bacterial decontamination with OA. In this same sense, a subgroup analysis, published in the Cochrane review in 2011 [6], clearly showed that the most favorable option for reducing surgical site infections was: OA without MBP (6% for OA alone *vs.* 8% for MBP + OA *vs.* 10.6% for MBP without OA and 10.3% for and 10.3% for patients having neither OA nor MBP).

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Slim K, Martin G. Paris/Brüssel

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ELSEVIER MASSON

EDITORIAL

Mechanical bowel preparation before colorectal surgery. Where do we stand?

Authors Reply

Carmichael JC, Keller DS, Baldini G, et al.

Nutzen

Risiko

Zusammenfassung

Es haben weltweit weniger als 50% der Chirurgen je aufgehört vorzubereiten

Daten für orale Antibiotika und MBP basieren auf teilweise alten heterogenen Daten – verschiedene AB – verschiedene Applikationsformen – Effekt nur auf SSI

Derzeit europäische ERAS Guidelines contra MBP !

Wenn dann alle WHO guidelines zur SSI Prophylaxe umsetzen, europäische Studien laufen (z.B: DC Winter)

Zu erforschen:

Einfluss aufs Mikrobiom – zeitgemäße AB (Rifaximin)

orales AB versus gallengängiges AB – (Clavamox)

am Vortag

Danke für Ihr Interesse

Kontaktieren Sie uns:

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