



FACE TO FACE Optimal timing for surgery: a multidisciplinary approach? Surgical point of view

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ISSUES

SURGICAL TIMING IN UC AND CD

- **Ulcerative Colitis**
- **Crohn's Disease**

ISSUES

SURGICAL TIMING IN UC AND CD

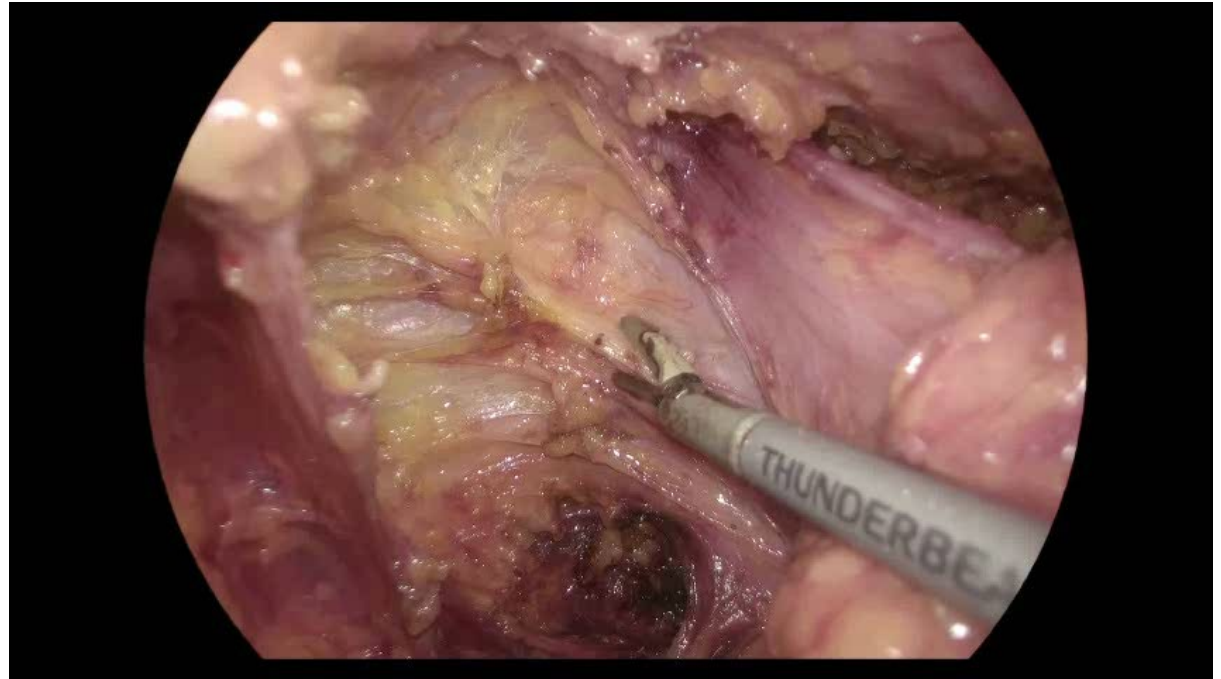
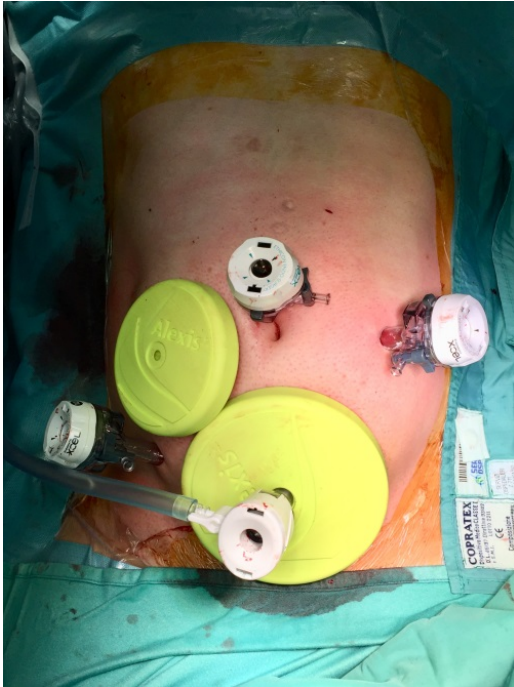
- **Ulcerative Colitis**

Impact of prolonged medical therapy on surgical rate

Effect of prolonged medical therapy on surgical approach

- **Crohn's Disease**

Ulcerative colitis



Ulcerative colitis

Changes in surgical timing

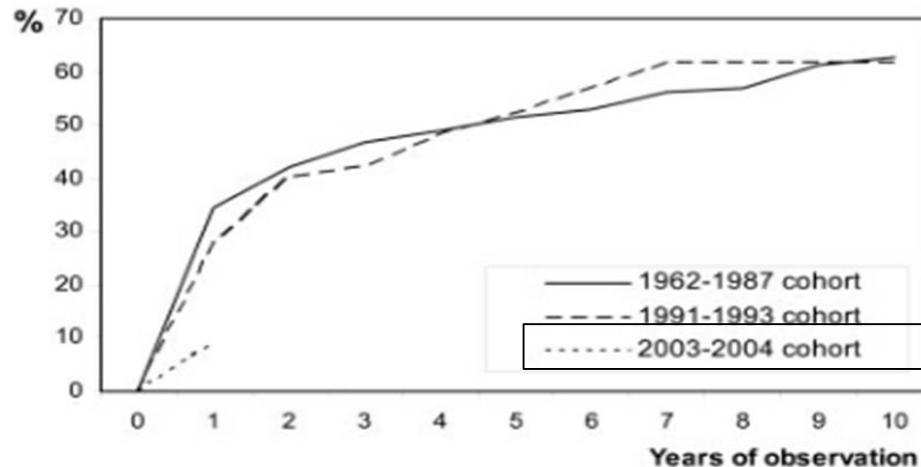
*Has the extensive use of biological drugs
changed the rate and the timing of surgery
in Ulcerative Colitis?*

Changes in Clinical Characteristics, Course, and Prognosis of Inflammatory Bowel Disease during the Last 5 Decades: A Population-Based Study from Copenhagen, Denmark

Jess, Inflamm Bowel Dis, 2007

**Three consecutive population-based IBD cohorts from Copenhagen
(Cohort 1:1962 – 1987 ; Cohort 2: 1991 – 1993 ; Cohort 3:2003 – 2004)**

RISK OF COLECTOMY IN THE FIRST DECADE



No significant changes in surgery rates in Cohort 1 and 2. The lower risk in Cohort 3 may be due to the shorter observation time

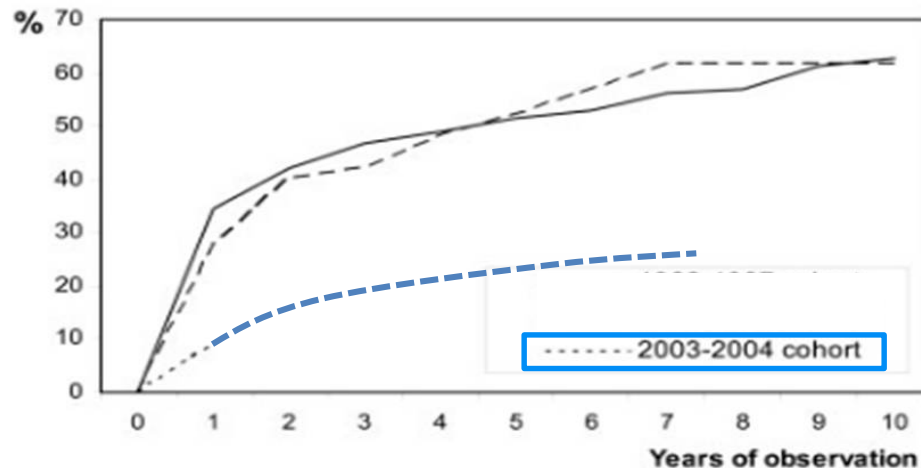
Disease Course and Surgery Rates in Inflammatory Bowel Disease: A Population-Based, 7-Year Follow-Up Study in the Era of Immunomodulating Therapy

Marianne K. Vester-Andersen, MD¹, Michelle V. Prosberg, MD¹, Tine Jess, MD, DMSci², Mikael Andersson, MSc³, Bo G. Bengtsson, MD³, Thomas Blixt, MD⁴, Pia Munkholm, MD, DMSci⁵, Flemming Bendtsen, MD, DMSci¹ and Ida Vind, MD, PhD¹

Denmark *Am J Gastroenterol* 2014

300 pts with UC 2003-2004 → reassessment 2011-2012
*Risk of colectomy **12.5%** at 7 yrs*

RISK OF COLECTOMY AT 7 YRS



Increasing use of immunomodulators:

- 86.4% steroids
- 64.3% immunosuppressants
- 23.5% Anti TNF- α

Bias

Colectomy risk in Biological Era assessed only patients for a limited period of time (only 2003-2004 and not for the entire follow-up period)

Timing of surgery in UC

Disease Outcome of Ulcerative Colitis in an Era of Changing Treatment Strategies: Results from the Dutch Population-Based IBDSL Cohort

Steven F. G. Jeuring,^{a,b} Paul H. A. Bours,^{a,b} Maurice P. Zeegers,^c

Maastricht University Medical Centre, Netherlands

JCC, 2015

Dutch population-based study

476 pts Cohort A (1991-1997)

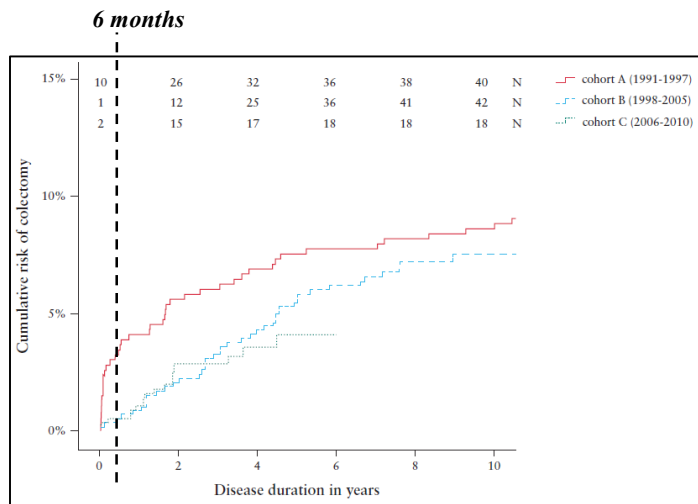
587 pts Cohort B (1998-2005)

598 pts Cohort C (2006-2010)

Higher use of biological agents in Cohort B and Cohort C (0%, 4.3% and 10.6%; $p < 0.01$)

EARLY COLECTOMY RATE: within 6 months after diagnosis

LATE COLECTOMY RATE: beyond 6 months after diagnosis



✓ Early colectomy rate decreased over time (1.5%, 0.5% and 0.3%; $p < 0.05$)

✓ Late colectomy rate remained unchanged (4%, 5.2% and 3.6%; $p = \text{n.s.}$)

As Infliximab Use for Ulcerative Colitis Has Increased, so Has the Rate of Surgical Resection

J Gastrointest Surg 2017

Kin C, Kate Bundorf M. Department of surgery, Stanford USA

Retrospective review of a private insurance claims database
2002-2013

58,681 pts (18-64 yrs) **with UC** at least 2 years follow-up

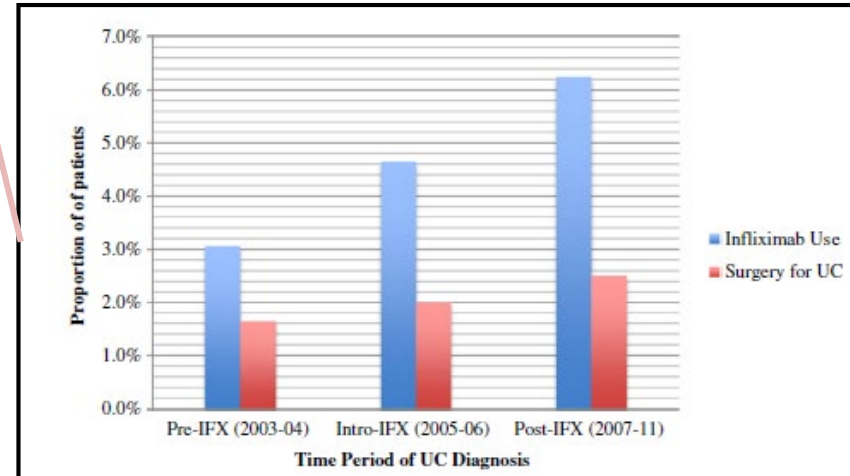
Outcome measures were **infliximab treatment and colectomy**

PreIFX (2003-2004) vs **Intro-to-IFX (2005-2006)** vs **Post-IFX (2007-2011)**

Pts of Post-IFX group were more likely to undergo an operation than those diagnosed before infliximab approval

	TAC or TPC		TAC		TPC	
	OR	p	OR	p	OR	p
Time period of diagnosis (ref = pre-inflix)						
Intro-inflix (2005-2006)	1.2	NS	1.08	NS	1.51	0.023
Post-inflix (2007-2011)	1.5	<0.001	1.36	0.04	1.76	<0.001

Period of diagnosis	Within 1 year after UC diagnosis				Within 2 years after UC diagnosis			
	IFX treatment	Any UC operation (TAC or TPC)	TAC	TPC	IFX treatment	Any UC operation (TAC or TPC)	TAC	TPC
Pre-inflix (2003-2004)	1.57	1.07	0.62	0.48	3.06	1.64	0.93	0.74
Intro-inflix (2005-2006)	3.04	1.18	0.67	0.56	4.64	2.00	1.01	1.12
Post-inflix (2007-2011)	4.63	1.69	0.90	0.84	6.24	2.50	1.30	1.28



Ulcerative Colitis

When should be used biologics?

ECCO Guideline/Consensus Paper

Third European Evidence-based Consensus on Diagnosis and Management of Ulcerative Colitis. Part 2: Current Management

Marcus Harbord,^{a,t,#} Rami Eliakim,^{b,#} Dominik Bettenworth,^c Konstantinos Karmiris,^d Konstantinos Katsanos,^e Uri Kopylov,^f Torsten Kucharzik,^g Tamás Molnár,^h Tim Raine,ⁱ Shaji Sebastian,^j Helena Tavares de Sousa,^k Axel Dignass,^{l,t} Franck Carbonnel;^{m,t} for the European Crohn's and Colitis Organisation [ECCO]



JCC 2017



IMMUNOMODULATOR-REFRACTORY ULCERATIVE COLITIS

ECCO statement 11K

Patients with moderate colitis refractory to thiopurines should be treated with anti-TNF [EL1], preferably combined with thiopurines, at least for infliximab [EL2], or vedolizumab [EL2]. In case of treatment failure, a different anti-TNF [EL4] or vedolizumab [EL2] should be considered, and colectomy recommended if further medical therapy does not achieve a clear clinical benefit [EL5]

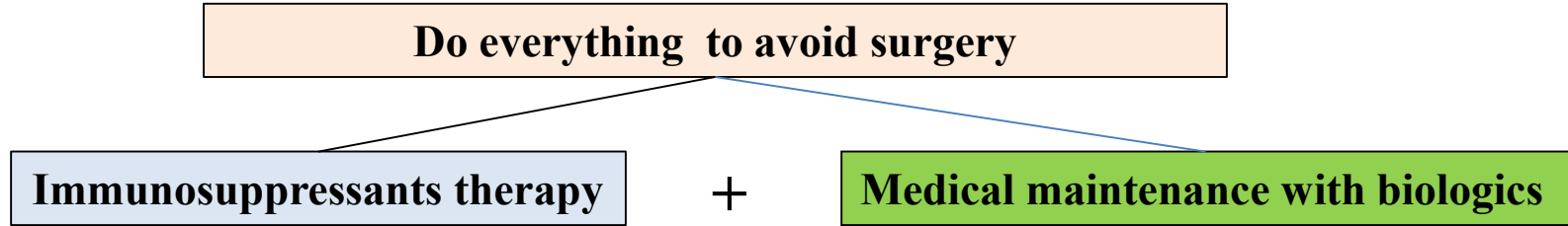
Ulcerative Colitis

Which is to me the COMMON therapeutic algorithm

Do everything to avoid surgery

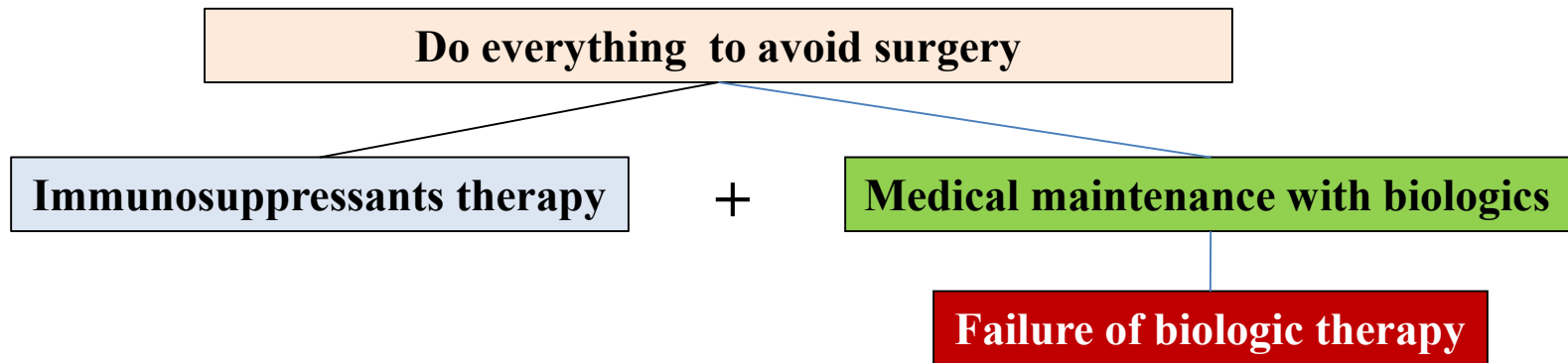
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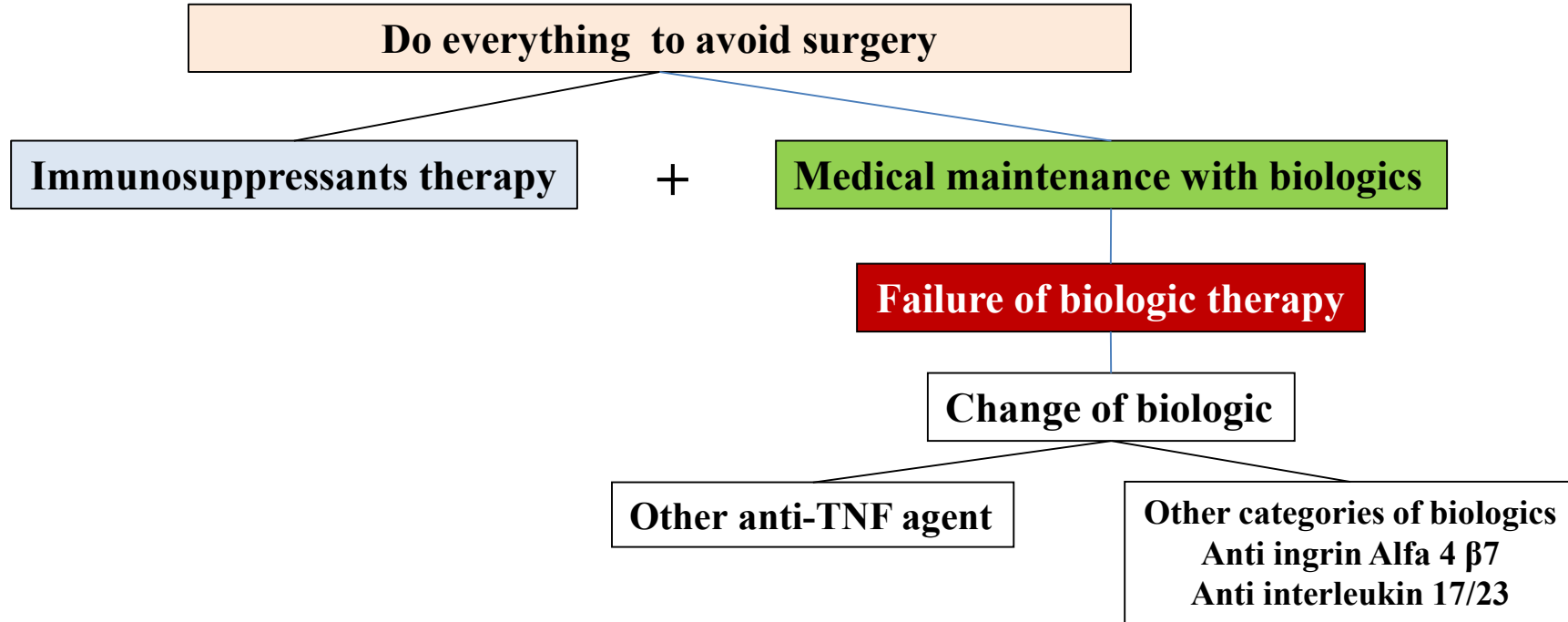
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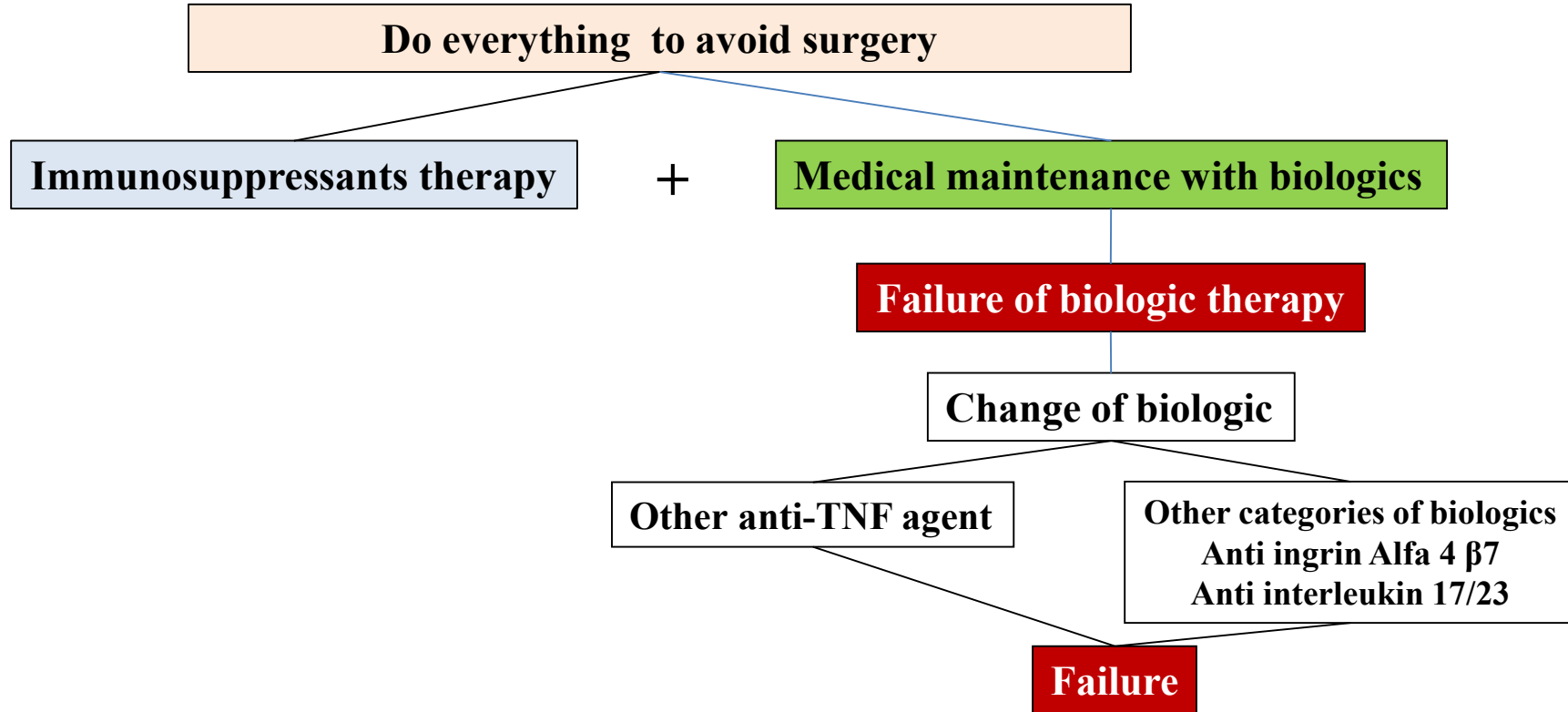
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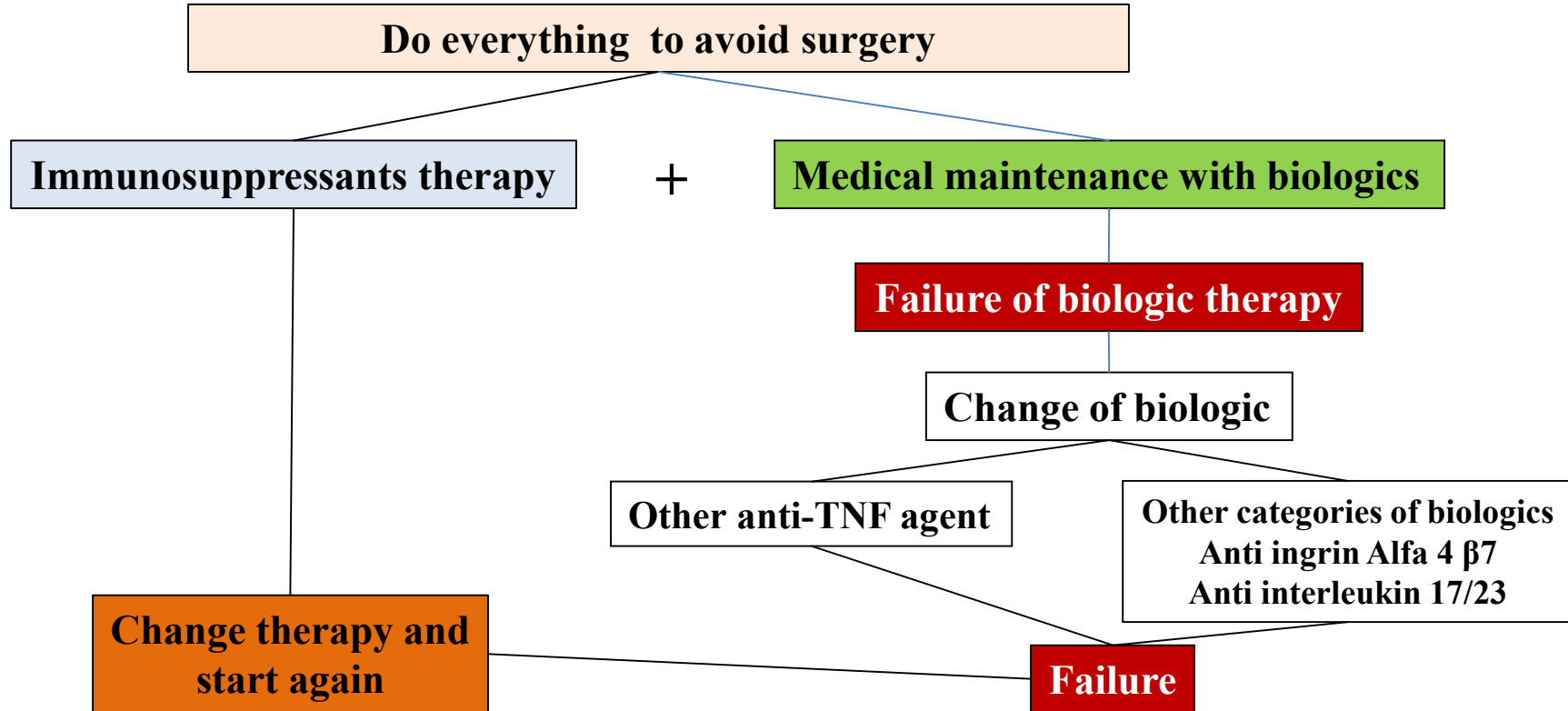
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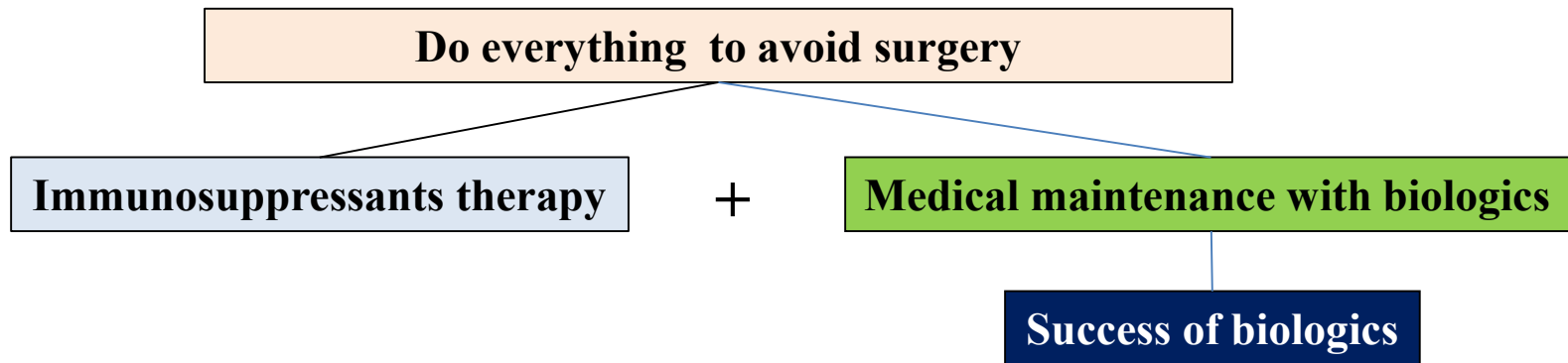
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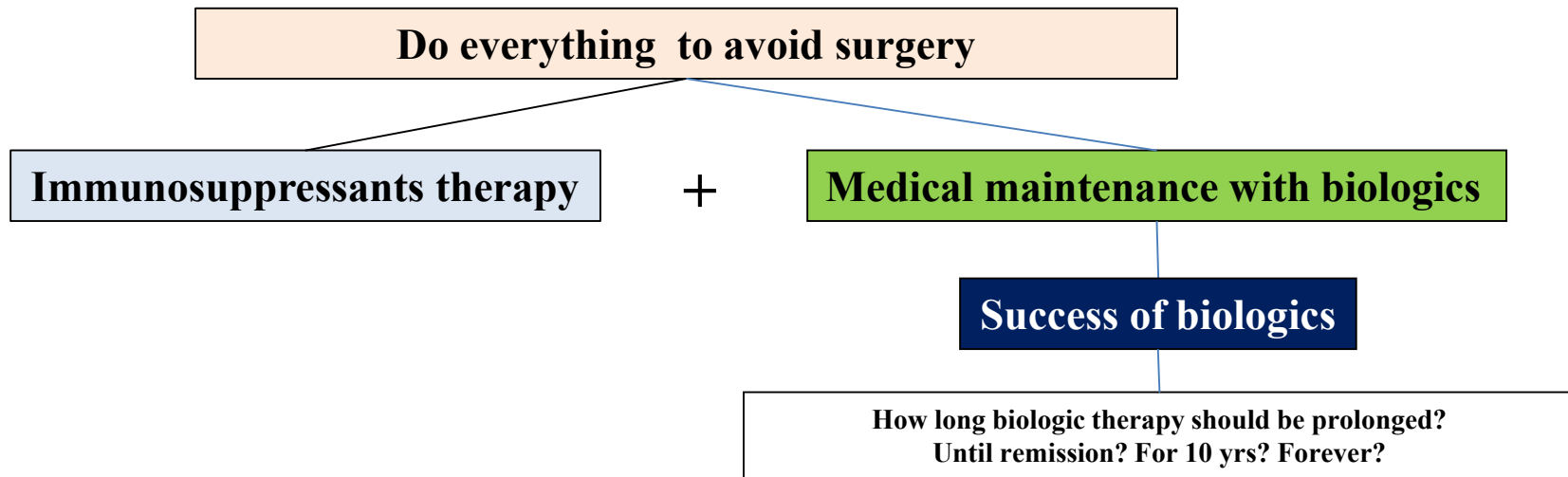
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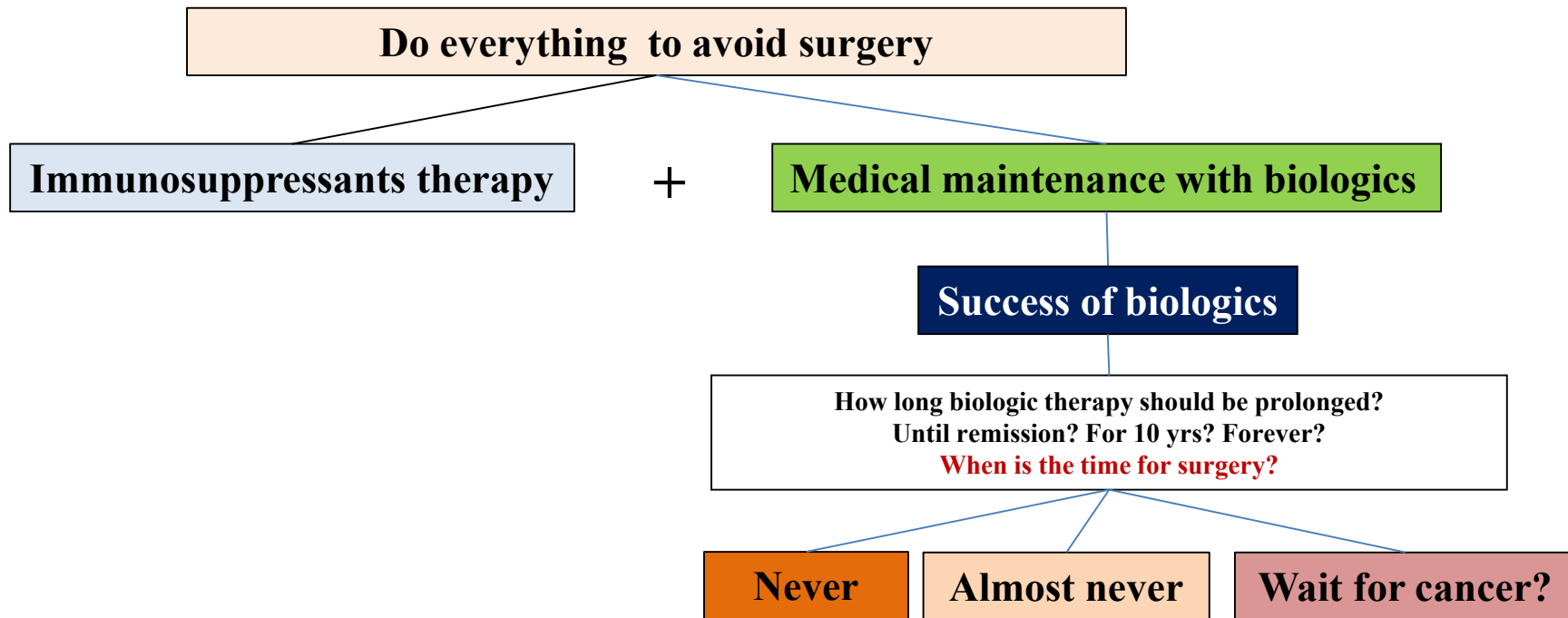
Ulcerative Colitis

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Ulcerative Colitis

Which is to me the COMMON therapeutic algorithm



Ulcerative Colitis

Which is to me the COMMON therapeutic algorithm

Do everything to avoid surgery

So at the end of the story:

- **Is the patient sent to surgery by gastroenterologist?**

Ulcerative Colitis

Which is to me the COMMON therapeutic algorithm

Do everything to avoid surgery

So at the end of the story:

- **Is the patient sent to surgery by gastroenterologist?**
- **Or is the exhausted patient that goes to the surgeon?**

PLEASE TELL ME THE TRUTH

Ulcerative Colitis

Which is to me the COMMON therapeutic algorithm

Actually

*All biologic agents are administered in the order
in which they were introduced in the “market”
regardless of the type of colitis*

WE NEED A CORRECT ALGORITHM FOR THE USE OF BIOLOGICS

ISSUES

SURGICAL TIMING IN UC AND CD

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- **Crohn's Disease**

Association of Preoperative Anti-Tumor Necrosis Factor Therapy With Adverse Postoperative Outcomes in Patients Undergoing Abdominal Surgery for Ulcerative Colitis

Audrey S. Kulaylat, MD; Afif N. Kulaylat, MD; Eric W. Schaefer, MS; Andrew Tinsley, MD; Emmanuelle Williams, MD; Walter Koltun, MD; Christopher S. Hollenbeak, PhD; Evangelos Messaris, MD, PhD The Pennsylvania State University- USA

JAMA Surgery 2018

UC

Retrospective study on a national database

2476 pts with UC

38.4% Subtotal colectomy/total abdominal colectomy

vs

14.3% Proctocolectomy/end ileostomy

vs

47.3% IPAA

MEDICATION USE WITHIN 90 DAYS OF SURGERY AMONG 3 COHORTS

No differences in the administration of anti-TNF agent among the 3 cohorts

Variable	OR (95% CI)	
	Any Complication	P Value
Subtotal Colectomy or Total Abdominal Colectomy		
Anti-TNF agent use	0.86 (0.62-1.18)	.35
Age, 10-y increase	0.96 (0.87-1.06)	.40
Female	1.31 (1.01-1.71)	.045
CCI, 1-point increase	0.99 (0.87-1.11)	.83
Malnutrition	1.12 (0.68-1.83)	.65
Failure to thrive	1.14 (0.66-1.92)	.64
Corticosteroid use	0.94 (0.72-1.25)	.69
Immunomodulator use	1.14 (0.82-1.58)	.43
Emergency procedure	1.19 (0.87-1.62)	.27
Total Proctocolectomy With End Ileostomy		
Anti-TNF agent use	1.01 (0.59-1.70)	.98
Age, 10-y increase	1.06 (0.87-1.31)	.66
Female	1.17 (0.75-1.84)	.49
CCI, 1-point increase	1.05 (0.84-1.31)	.67
Malnutrition	0.95 (0.34-2.42)	.91
Failure to thrive	0.60 (0.22-1.43)	.27
Corticosteroid use	0.67 (0.42-1.05)	.08
Immunomodulator use	1.13 (0.65-1.93)	.66
Emergency procedure	0.92 (0.43-1.90)	.83
Ileal Pouch-Anal Anastomosis		
Anti-TNF agent use	1.38 (1.05-1.82)	.02
Age, 10-y increase	1.07 (0.96-1.18)	.21
Female	1.30 (1.02-1.65)	.03
CCI, 1-point increase	1.05 (0.91-1.21)	.50
Malnutrition	1.25 (0.59-2.61)	.56
Failure to thrive	0.68 (0.32-1.36)	.29
Corticosteroid use	1.03 (0.81-1.32)	.80
Immunomodulator use	1.02 (0.77-1.34)	.90
Emergency procedure	1.47 (0.83-2.62)	.18
Diverting stoma	0.89 (0.66-1.22)	.47

LOGISTIC REGRESSION ANALYSES FOR 90-DAY POSTOPERATIVE OUTCOME

NO ASSOCIATION between use of a **biologic agent** and postoperative complications in patients submitted to **STC/TAC or PCT/EI**

In patients submitted to IPAA use of a biologic agent was associated with 38% higher complications

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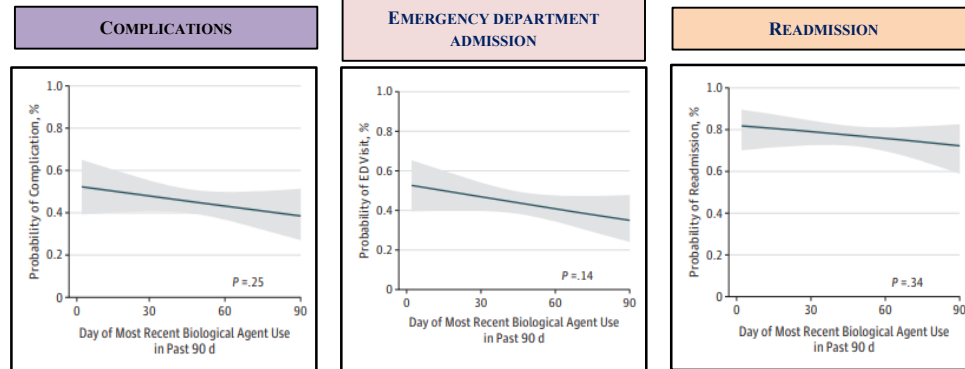
47.3% IPAA

MEDICATION USE WITHIN 90 DAYS OF SURGERY AMONG 3 COHORTS

No differences in the administration of anti-TNF agent among the 3 cohorts

Logistic Regression Models of Complications, Emergency Department (ED) Visits, and Readmissions Within 90 Days

Restorative proctocolectomy with IPAA



Risk of complications, emergency department admission and readmission decrease since last administration of anti-TNF agent

Delayed Ileal Pouch Anal Anastomosis Has a Lower 30-Day Adverse Event Rate: Analysis From the National Surgical Quality Improvement Program

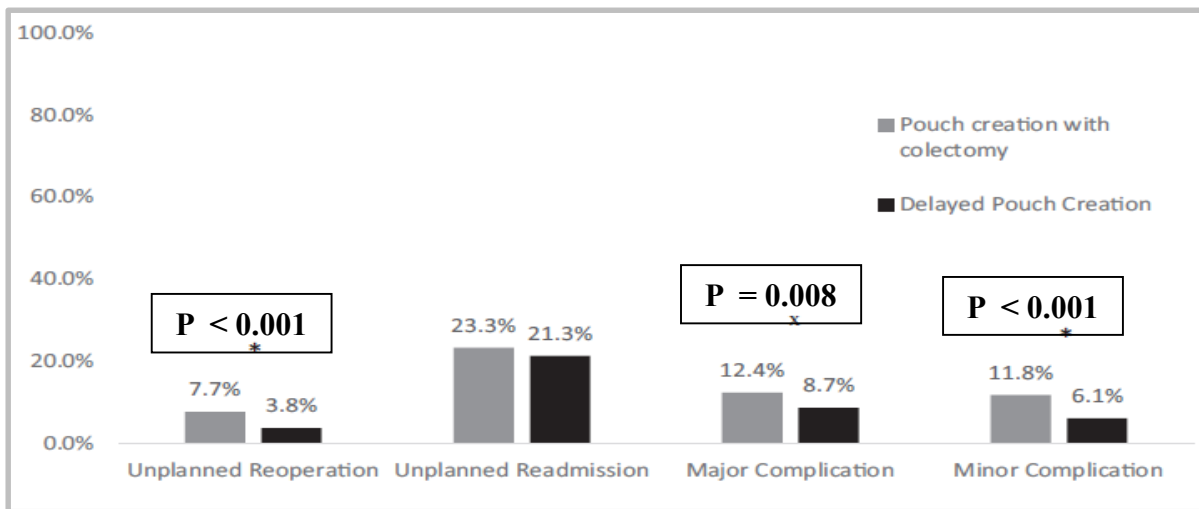
Bharati Kochar, MD, MSCR, ^{*,†} Edward L. Barnes, MD, MPH, ^{*,†} Anne F. Peery, MD, MSCR,

IBD 2018

University of North Carolina, USA

2390 IPAA (2011-2015) Database ACS NSQIP

1571 PTC (Pouch at the Time of Colectomy) vs **819 DPC** (Delayed Pouch Creation)



Higher risk of complications in case of IPAA at the time of PTC due to an higher use of biologics ($P < 0.01$)

Higher Surgical Morbidity for Ulcerative Colitis Patients in the Era of Biologics

New York Presbyterian Hospital

Ann Surg 2017

Jonathan S. Abelson, MD,* Fabrizio Michelassi, MD,* Jialin Mao, MD, MS,† Art Sedrakyan, MD,†
and Heather Yeo, MD, MHS*†

Retrospective study on New York database
7070 pts with UC – 1995/2013
3803 pts 1995-2005 vs 3267 pts 2006-2013

TABLE 1. Patient and Initial Procedure Characteristics

	1995–2005 (N = 3803)	2006–2013 (N = 3267)	P
Age, yrs			
Mean (Std)	49.8 (19.6)	51.0 (20.2)	0.01
<45	1591 (41.8%)	1244 (38.1%)	<0.01
45–65	1178 (31.0%)	1038 (32.4%)	
≥65	1034 (27.2%)	965 (29.5%)	
Male	2002 (52.6%)	1674 (51.2%)	0.24
Race/Ethnicity*			<0.01
White (non-Hispanic)	3023 (86.5%)	2625 (80.7%)	
Black (non-Hispanic)	163 (4.7%)	158 (4.9%)	
Hispanic	118 (3.4%)	165 (5.1%)	
Other	189 (5.4%)	305 (9.4%)	
Insurance			<0.01
Medicare	1029 (27.1%)	997 (30.5%)	
Medicaid	233 (6.1%)	264 (8.1%)	
Commercial	2436 (64.1%)	1930 (59.1%)	
Other	105 (2.8%)	76 (2.3%)	
Comorbidities			
CAD	276 (7.3%)	208 (6.4%)	0.14
Hypertension	661 (17.4%)	768 (23.5%)	<0.01
CHF	205 (5.4%)	188 (5.8%)	0.51
Diabetes	341 (9.0%)	347 (10.6%)	0.02
CPD	352 (9.3%)	430 (13.2%)	<0.01
Obesity	70 (1.8%)	161 (4.9%)	<0.01
Anemia	687 (18.1%)	674 (20.6%)	<0.01
PVD	81 (2.1%)	139 (4.3%)	<0.01
CVD	29 (0.8%)	26 (0.8%)	0.87
Depression	190 (5.0%)	267 (8.2%)	<0.01
Renal Failure	11 (0.3%)	157 (4.8%)	<0.01
Weight Loss	380 (10.0%)	579 (17.7%)	<0.01
No. Comorbidities			<0.01
0	1955 (51.4%)	1364 (41.8%)	
1	1146 (30.1%)	974 (29.8%)	
2+	702 (18.5%)	929 (28.4%)	
Elective admission	2092 (55.0%)	1741 (53.3%)	0.15
Initial surgery			<0.01
TAC with stoma	1711 (45.0%)	1607 (49.2%)	
TAC without stoma	755 (19.9%)	468 (14.3%)	
TPC without pouch or stoma	125 (3.3%)	48 (1.5%)	
TPC with pouch	125 (3.3%)	78 (2.4%)	
TPC with stoma only	156 (4.1%)	147 (4.5%)	
Ileostomy	112 (2.9%)	921 (28.2%)	<0.01
MIS	220 (5.8%)	477 (10.6%)	<0.01
Concurrent clostridium difficile infection			<0.01
Hospital volume			
Low	1524 (40.1%)	1155 (35.4%)	
Medium	1148 (30.2%)	1007 (30.8%)	
High	1131 (29.7%)	1105 (33.8%)	

There was a significant increase in the proportion of patients who underwent at least three procedures after 2005 (9% vs 14%, $P < 0.01$)

	1995–2005 (N = 3803)	2006–2013 (N = 3267)	P
Number of subsequent procedures			<0.01
0	2364 (62.2%)	1844 (56.4%)	
1	1087 (28.6%)	963 (29.5%)	
2+	352 (9.3%)	460 (14.1%)	<0.01
Creation of pouch and stoma			<0.01
None	840 (22.1%)	482 (14.8%)	
Pouch and stoma	950 (25.0%)	1070 (32.8%)	
Pouch only	111 (2.9%)	61 (1.9%)	
Stoma only	1902 (50.0%)	1654 (50.6%)	

A smaller proportion of patients underwent a total proctocolectomy and pouch creation without stoma creation in the later time period
(3.3% vs 2.4%, $P = 0.02$)

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HOSPITALIZATION OUTCOMES FOR THE INDEX ADMISSION

	1995-2005 (N = 3803)	2006-2013 (N = 3267)	P
Inhospital death	208 (5.5%)	266 (8.1%)	<0.01
Major events*	200 (5.3%)	242 (7.4%)	<0.01
Procedural complications†	377 (9.9%)	402 (12.3%)	<0.01
Transfusion	1341 (35.3%)	1277 (39.1%)	<0.01
TPN	960 (25.2%)	674 (20.6%)	<0.01
OTR	1653 (46.0%)	2190 (73.0%)	<0.01
LOS [Median (IQR)]	10 (7-19)	9 (6-17)	<0.01
Charges‡ [Median (IQR)]	\$46,593 (\$30,415-\$77,737)	\$66,861 (\$45,582-\$117,116)	<0.01

HOSPITALIZATION OUTCOMES FOR 90-DAY OUTCOMES

	1995-2005 (N = 3803)	2006-2013 (N = 3267)	P
Readmission§	1404 (39.1%)	1421 (47.4%)	<0.01
Major events*	247 (6.5%)	307 (9.4%)	<0.01
Procedural complications†	538 (14.1%)	620 (19.0%)	<0.01
Transfusion	1426 (37.5%)	1398 (42.8%)	<0.01
TPN	1044 (27.5%)	758 (23.2%)	<0.01
Charges‡ [Median (IQR)]	\$57,695 (\$35,091-\$101,029)	\$88,311 (\$53,626-\$152,653)	<0.01

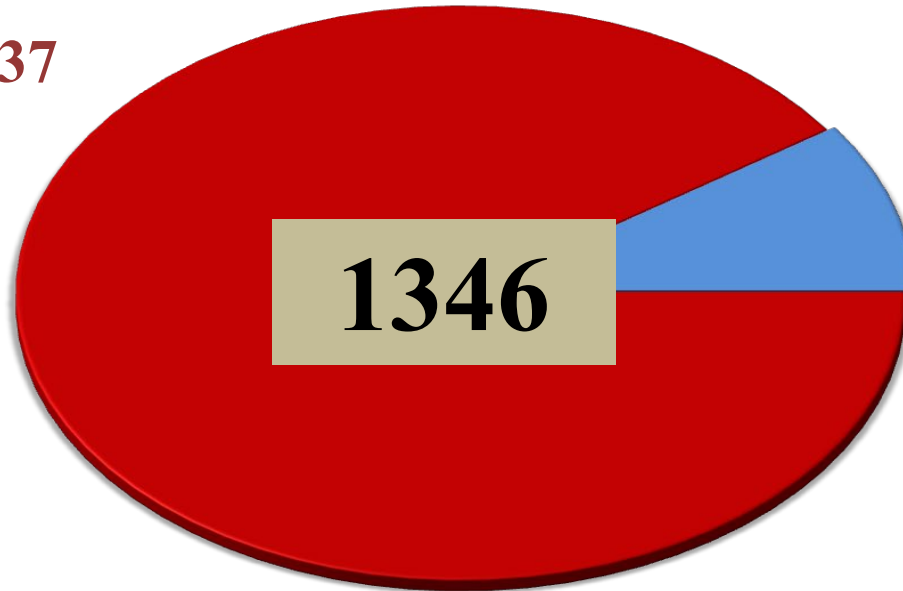
HOSPITALIZATION OUTCOMES FOR 1 YEAR OUTCOMES

	1995-2005 (N = 3803)	2006-2013 (N = 3267)	P
Readmission§	2345 (65.2%)	2170 (72.3%)	<0.01
Major events*	300 (7.9%)	355 (10.9%)	<0.01
Procedural complications†	659 (17.3%)	762 (23.3%)	<0.01
Transfusion	1539 (40.5%)	1492 (45.7%)	<0.01
TPN	1116 (29.3%)	831 (25.4%)	<0.01
Charges‡ [Median (IQR)]	\$74,150 (\$42,300-\$132,293)	\$119,862 (\$67,370-\$209,828)	<0.01

“...Since the introduction of biologic agents in 2005, patients having surgery recently have dramatically **worse postoperative morbidity** during the **index hospitalization, at 90-day and 1-year follow...**”

Ileo-anal pouch

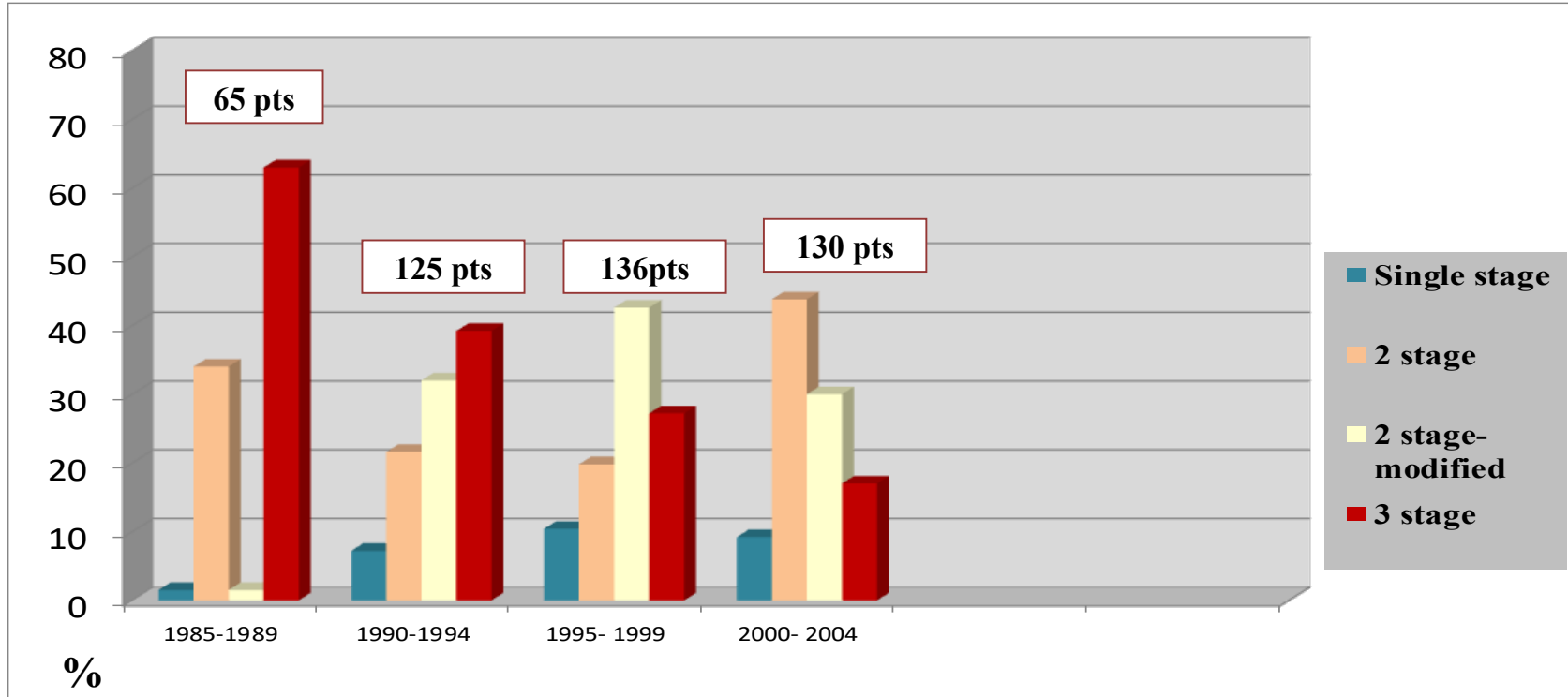
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FAP 109

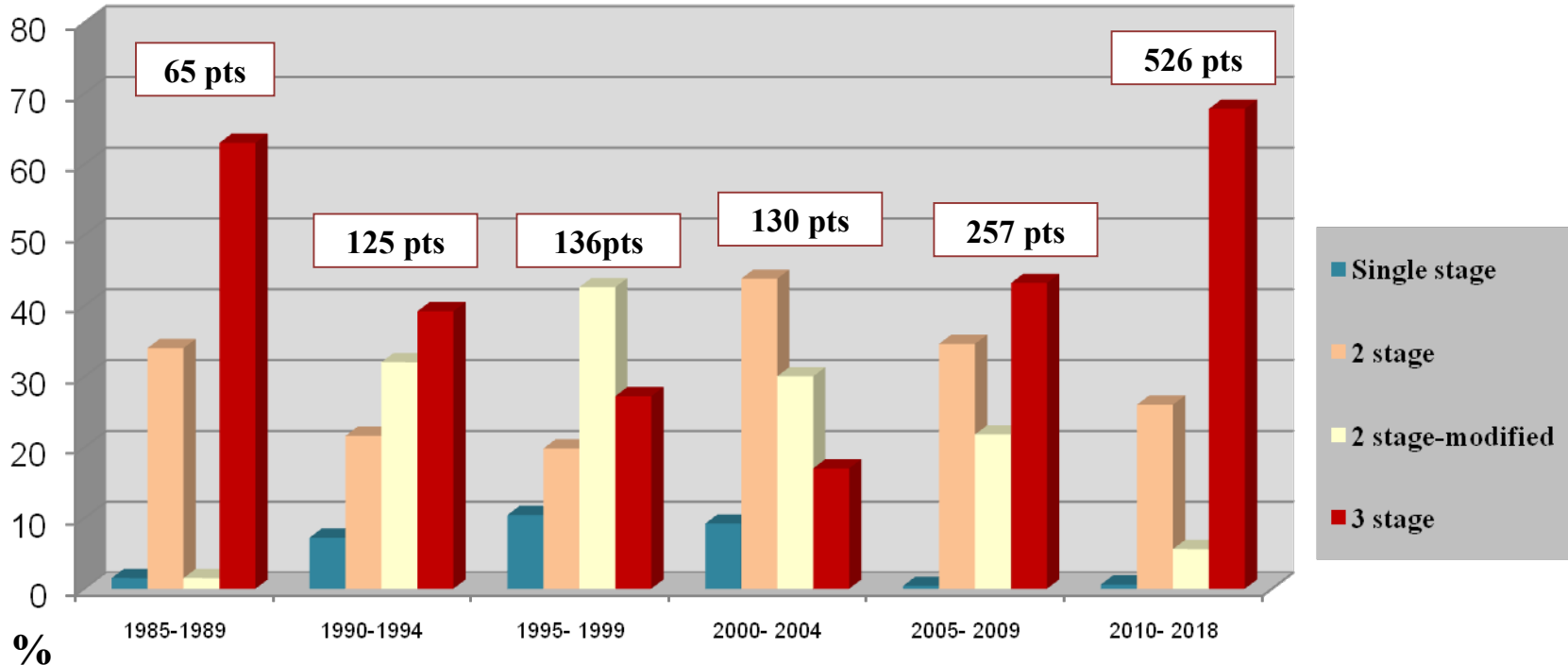
ILEOANAL ANASTOMOSIS

1237 pts with UC



ILEOANAL ANASTOMOSIS

1237 pts with UC



ISSUES

SURGICAL TIMING IN UC AND CD

- **Ulcerative Colitis**
- **Crohn's Disease - *Small Bowel disease***

Changes in surgical timing

Has the surgical behaviour been changed by prolonged medical therapy?

Changes in surgical timing

TERMINAL ILEITIS

EVIDENCES

MEDICAL THERAPY

1/3 patients end up with surgical resection despite medical treatment

SURGICAL THERAPY

- Laparoscopic ileocolonic resection is an **low morbidity** operation
- Quick relieve of complaints and fast **restoration of QoL**
- **Morbidity rates:15% Reoperation rates only 1.5%**

Surgery can be considered as an alternative to long-term medical therapy for certain indications

Management of Crohn's Disease in Adults

Gary R. Lichtenstein, MD¹⁻⁴, Stephen B. Hanauer, MD¹⁻⁴, William J. Sandborn, MD¹⁻³ and The Practice Parameters Committee of the American College of Gastroenterology

Am J Gastroenterol 2009

“...the ability to reduce the risk of postoperative recurrence after surgical resection coupled with the potential substantial benefits of appropriate surgical therapy, **no longer justifies the prolongation of medical management to avoid surgery...**”

“...the primary objective of therapy for CD is to **restore** the patient **to health and well-being...**”

Changes in surgical timing

TERMINAL ILEITIS TODAY

Clinical Practice Guideline for the Surgical Management of Crohn's Disease

Scott Strong, M.D. • Scott R. Steele, M.D. • Marylise Boutrous, M.D.
Liliana Bordineau, M.D. • Jonathan Chun, M.D. • David B. Stewart, M.D.
Jon Vogel, M.D. • Janice F. Rafferty, M.D.

Dis Colon & Rectum 2015

Prepared on behalf of The Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons



“ Patients who demonstrate an inadequate response to, develop complications from, or are noncompliant with medical therapy should be considered for surgery... (Grade 1C) ”

SURGICAL INTERVENTION WARRANTED IN:

- Pts **unable to tolerate medical therapy** because of **side effects**
- **Pts noncompliant** with medical therapy
- Pts **without** adequate **control** of their **disease** activity with medical therapy

If disease is limited in extent, short-length ileocolic disease surgery should be strongly considered as first option



**European evidence based consensus on the
diagnosis and management of Crohn's disease:
current management**

S P L Travis, E F Stange, M Lémann, et al.

GUT 2006



ILEOCAECAECAL DISEASE

ECCO Statement 7A

Localised ileocaecal Crohn's disease with obstructive symptoms can be treated by primary surgery [EL2b, RG C]

ECCO Guideline/Consensus Paper

ECCO-ESCP Consensus on Surgery for Crohn's Disease

Willem A. Bemelman,^a Janindra Warusavitarne,^b Gianluca M. Sampietro,^c
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on behalf of the European Crohn's and Colitis Organisation [ECCO] and
the European Society of Colo-Proctology [ESCP]



2018



ILEOCAECAL DISEASE

ECCO Statement 7A

Surgery is the preferred option in patients with localised ileocaecal Crohn's disease with obstructive symptoms, but no significant evidence of active inflammation [EL4]

Quality of Life after Intestinal Resection in Patients with Crohn Disease: A Systematic Review

Australia
Dig Surg 2017

Francis J. Ha^a Louisa Thong^a Hanan Khalil^{a, b}

Systematic review

Impact of intestinal resection for CD on the HRQOL*

9 studies included 1108 pts

CHARACTERISTICS OF SURGERY

- **Ileocolic resection** was the **most commonly** performed intestinal **resection** (range 57–100%)
- The vast **majority of intestinal resections** were performed **electively** (range 95–100%)
- **Indications** for surgery were most commonly **bowel obstruction** (range 23–79%), **stricturing disease** (24%), **perforation** (40–53%), **failure of medical therapy** (4–29%)



SATISFACTION AFTER SURGERY

2 studies evaluated the patient satisfaction for surgery postoperatively

- Up to 80% of patients were satisfied with their intestinal resection and would undergo it again if necessary
- 80% of patients who underwent an open approach **WOULD PREFER A LAPAROSCOPIC APPROACH**

When possible!

QUALITY OF LIFE AFTER SURGERY

All studies reported a significant improvement of QoL after intestinal resection 30 days postoperatively

Five studies evaluated long-term HRQOL after intestinal resection, and all but one study found significant improvement in HRQOL lasting up to 5 years

* Health related quality of life introduced in 1993 by Centers for Disease Control

ISSUES

TERMINAL ILEITIS

The question is

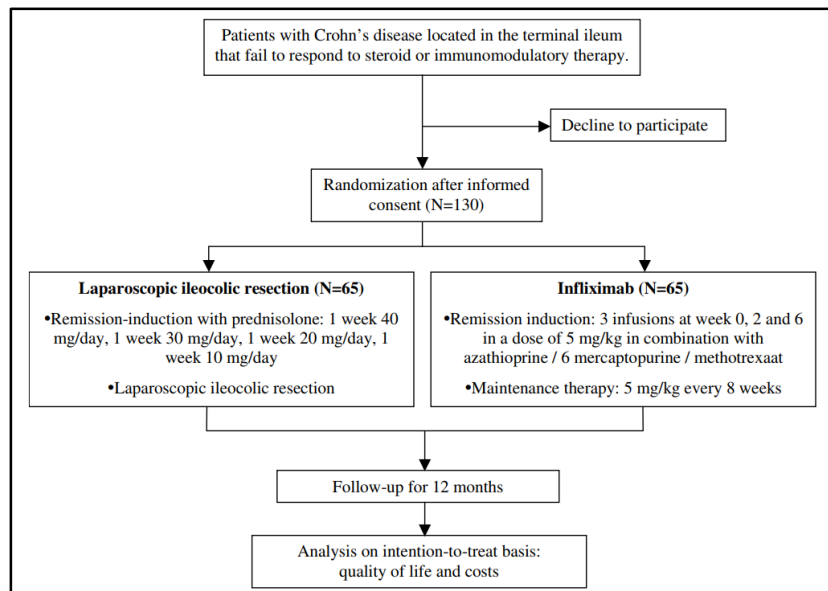
**Prolong medical therapy
if it is successfully**

**Anticipate surgical
resection**

Laparoscopic ileocolic resection versus infliximab treatment of distal ileitis in Crohn's disease: a randomized multicenter trial (LIR!C-trial) *Netherland-UK*

BMC Surg 2008

Multicenter RCT pts with CD in the terminal ileum
Randomized to **either IFX** or **laparoscopic ileocolic resection**



PRIMARY OUTCOMES

Quality of life

SECONDARY OUTCOMES

Hospital stay

Scheduled and unscheduled hospital admission

Laparoscopic ileocaecal resection versus infliximab for terminal ileitis in Crohn's disease: a randomised controlled, open-label, multicentre trial. *Netherland-UK Lancet Gastroenterol Hepatol 2017*

Ponsioen CY, de Groof EJ, Eshuis EJ, Gardenbroek TJ, Bossuyt PMM, Hart A, Warusavitarne J, Buskens CJ, van Bodegraven AA, Brink MA, Consten ECJ, van Wagensveld BA, Rijk MCM, Crolla RMPH, Noomen CG, Houdijk APJ, Mallant RC, Boom M, Marsman WA, Stockmann HB, Mol B, de Groof AJ, Stokkers PC, D'Haens GR, Bemelman WA; LIR!C study group

Multicenter **RCT** pts with CD in the terminal ileum
29 teaching hospital and tertiary care centres
2008-2015
73 laparoscopic resection vs 70 IFX therapy

PRIMARY OUTCOMES

Quality of life

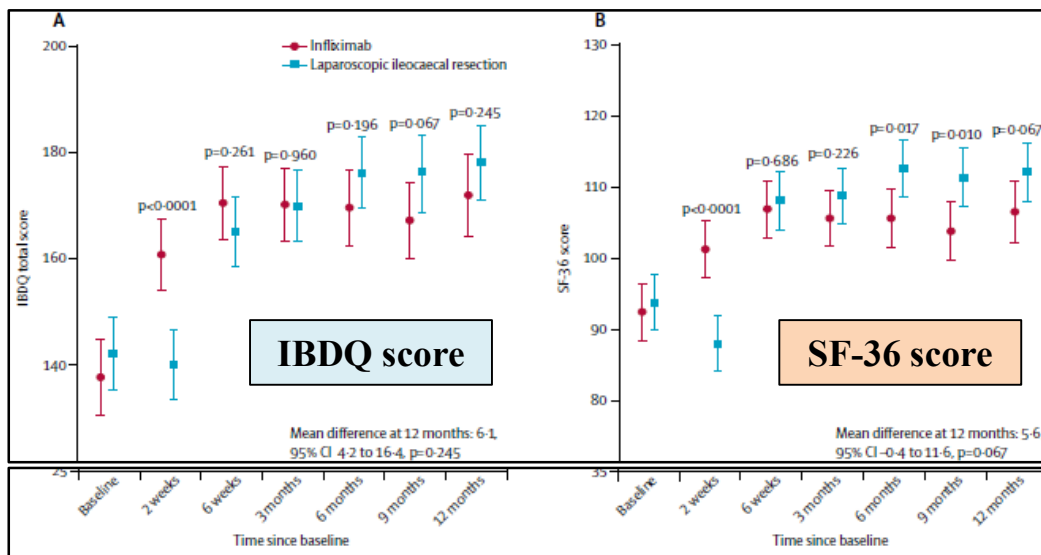


IBDQ score at 12 months

178.1 in the resection group
172.0 in the infliximab group
(p=ns)

SF-36 total score

112.1 in the resection group
106.5 in the infliximab group
p=ns



Laparoscopic ileocaecal resection versus infliximab for terminal ileitis in Crohn's disease: a randomised controlled, open-label, multicentre trial. *Netherland-UK Lancet Gastroenterol Hepatol 2017*

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Multicenter RCT pts with CD in the terminal ileum
29 teaching hospital and tertiary care centres
2008-2015
73 laparoscopic resection vs 70 IFX therapy

SECONDARY OUTCOMES

Hospital stay

Days of scheduled hospital admission

6.5 in the resection group
6.8 in the infliximab group
(p=ns)

% of pts with unscheduled hospital admission

18% in the resection group
21% in the infliximab group
(p=ns)

UNSCHEDULED AND SCHEDULED ADMISSION

	Infliximab (n=70)	Laparoscopic ileocaecal resection (n=73)
Unscheduled admissions		
Number of patients readmitted	5 (21%)	13 (18%)
Time spent in hospital per patient, days	7.0 (3.0-11.0)	5.0 (3.5-10.0)
Total number of days spent in hospital by all patients	122	149
Patients admitted to intensive care unit	0	2 (3%)
Mean time spent in intensive care unit, days*	0	17.0
Scheduled admission		
Time spent in hospital per patient, days	6.8 (3.2)	6.5 (3.8)
Total number of days spent in hospital by all patients	473	471

Data are n (%), median (IQR), or mean (SD) unless otherwise stated. All patients had at least one scheduled admission for either infliximab infusions or surgery. *No SD is available for the mean number of days spent in an intensive care unit because only two patients were admitted.

ADVERSE EVENTS

	Infliximab (n=65)	Laparoscopic ileocaecal resection (n=70)
Total	2 (3%)	8 (11%)
Pneumonia	1 (2%)	0
Perianal abscess	1 (2%)	0
Ileus	0	3 (4%)
Anastomotic leakage	0	3 (4%)
Intra-abdominal abscess or haematoma*	0	2 (3%)

Data are n (%). *One patient with an anastomotic leakage also developed an intra-abdominal abscess. Difference in total proportion of patients with serious adverse events tested with Fisher's exact test (p=0.10).

Ileocecal resection is not associated with more serious adverse events

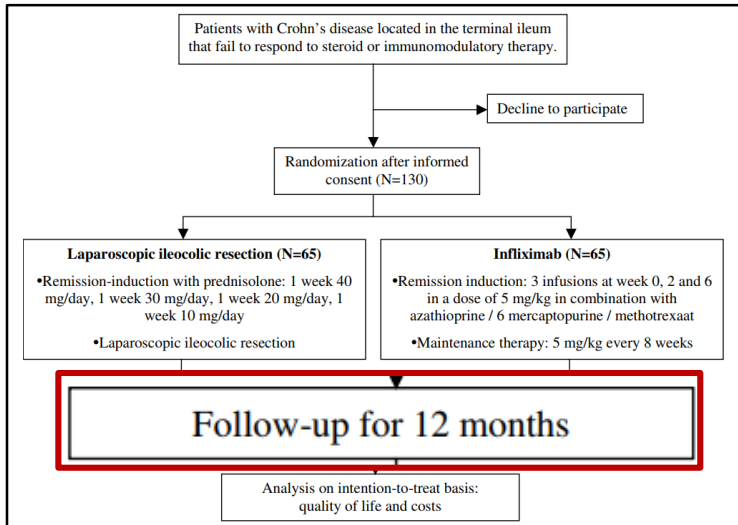
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Multicenter **RCT pts with CD in the terminal ileum**
29 teaching hospital and tertiary care centres
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DURING FOLLOW UP



After a mean follow-up 4 years
37% of pts in the IFX group had surgical resection

Median time to resection in the infliximab group
70 weeks (range 27-172)

“...Laparoscopic resection in pts with limited ileocecal Crohn's disease in whom conventional therapy has failed could be considered a reasonable alternative to IFX therapy...”

ISSUES

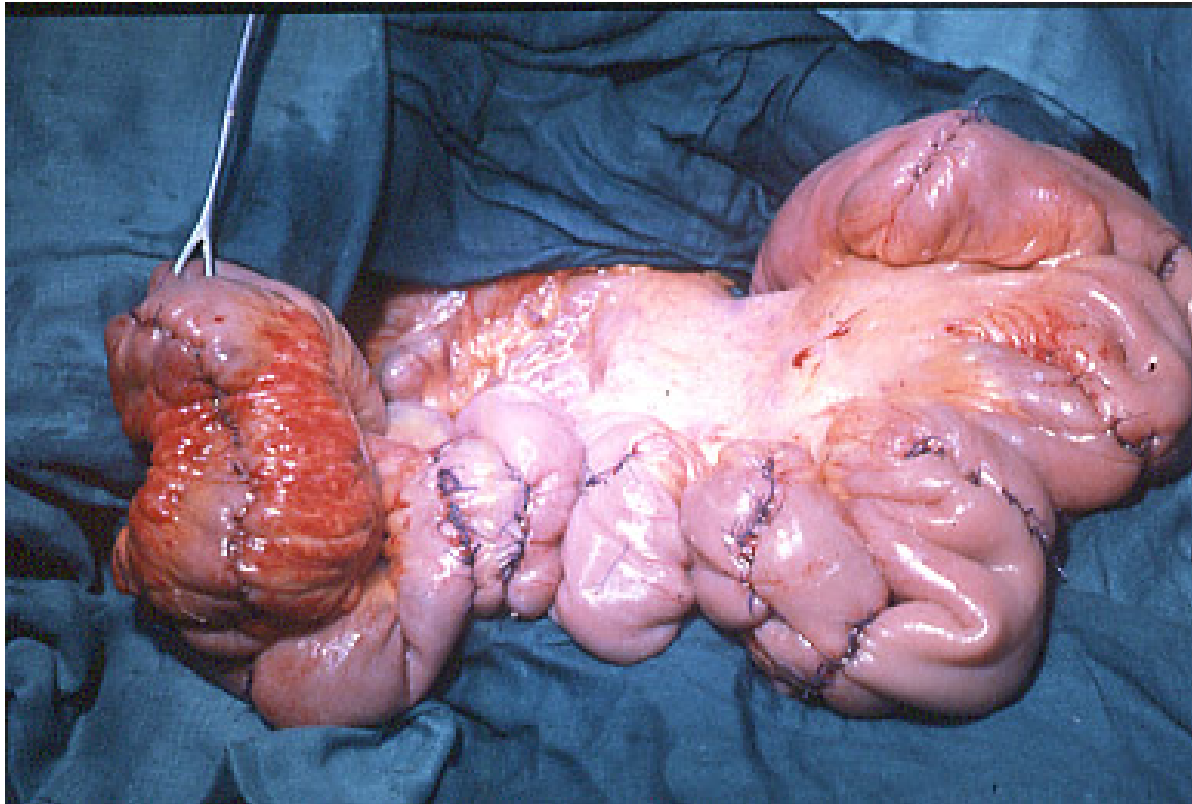
SURGICAL TIMING IN UC AND CD

- **Ulcerative Colitis**
- **Crohn's Disease - *Small Bowel disease***

Changes in surgical timing

Has the surgical behaviour been changed by prolonged medical therapy?

Strictureplasties



Surgical Unit, University of Bologna, 1995-2018



SMALL BOWEL CROHN'S DISEASE

1247 patients operated

2248 procedures



358 conservative procedures (18.0 %)

1010 SXPL

Sparing Surgery in Small Bowel CD

**What is the role of bowel sparing
surgery / strictureplasty in
biological era?**

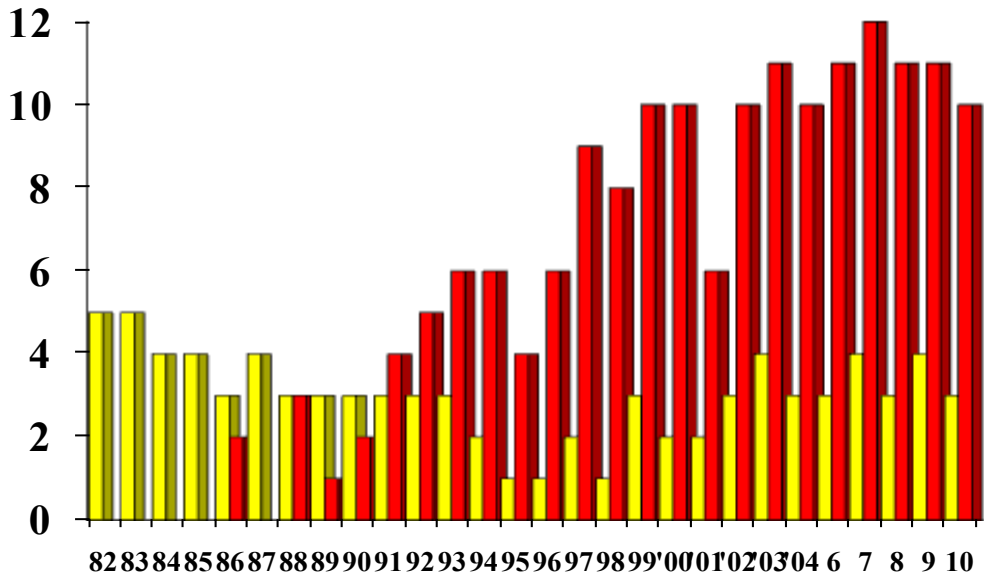


Surgical Unit, University of Bologna

SMALL BOWEL CROHN'S DISEASE

Segmental Ileal Resection and Bowel Sparing Surgery

1010 strictureplasties in 358 procedures





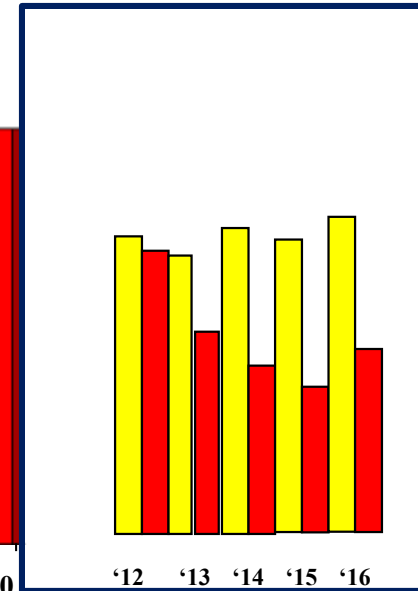
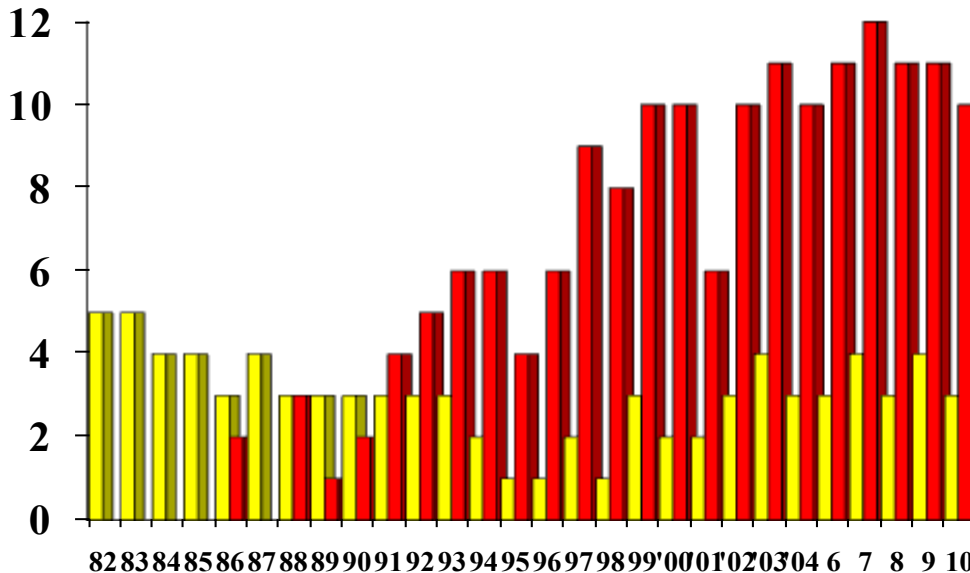
Surgical Unit, University of Bologna

SMALL BOWEL CROHN'S DISEASE

Segmental Ileal Resection and Bowel Sparing Surgery

1010 strictureplasties in 358 procedures

Extensive use of biological drugs



LAST 5 YEARS !

BIOLOGICAL THERAPY AND CD

EFFECTS OF BIOLOGICAL THERAPY



HEALING OF MUCOSA

but

**Increased or almost equal
fibrosis and thickness of
small bowel wall**

- **Reduction in fashioning of conservative surgery**
- **Onset of postoperative complications**

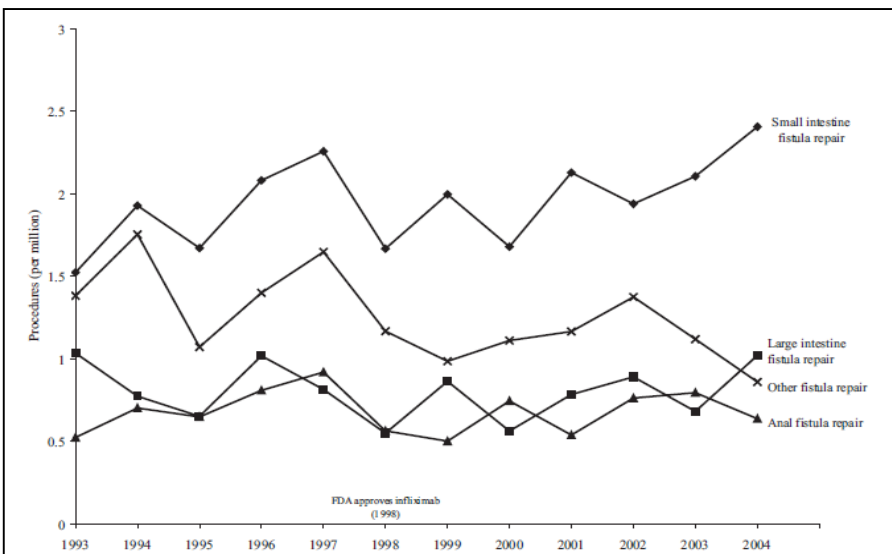
University of Lebanon, New Hampshire

Annals of Surgery, 2010

Trends in Surgery for Crohn's Disease in the Era of Infliximab

Douglas W. Jones, MD, and Samuel R. G. Finlayson, MD, MPH†‡*

USA Population-based. Nationwide Inpatient Sample Database (Agency for Healthcare Research and Quality) analysis
All hospital admissions for CD for each year from **1993** (75.228 admission) through **2004** (139.083 admission)



SURGICAL RATE IN SMALL BOWEL DISEASE

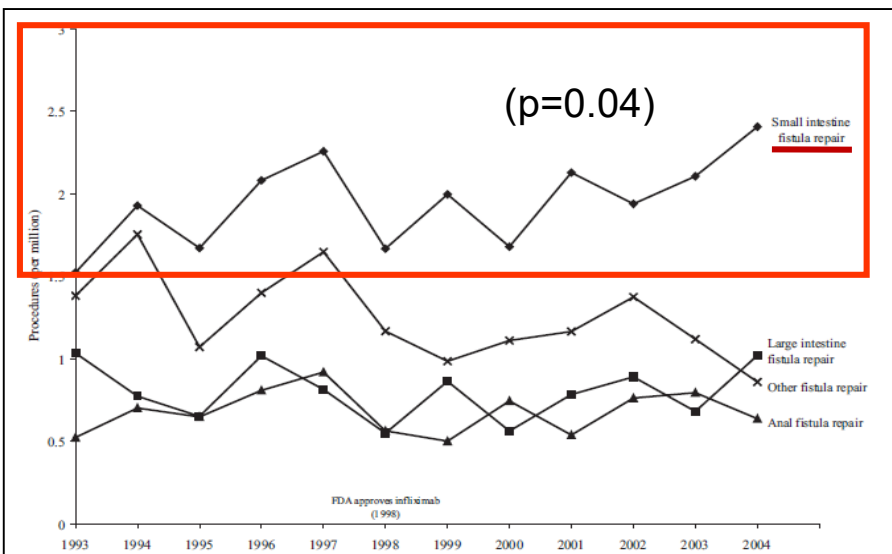
Small bowel resections were performed at an overall mean rate of 13.3 per 1,000,000 per year between 1993 and 2004 and showed **NO SIGNIFICANT REDUCTION** during that time.

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**Surgical resection for fistulas
increased by 60%**

1993
1.5 per 1,000,000



2004
2.4 per 1,000,000

Small Bowel Resection Rates in Crohn's Disease and the Indication for Surgery Over Time: Experience from a Large Tertiary Care Center

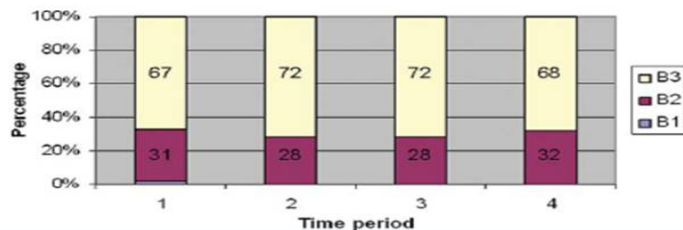
Mark Lazarev, MD,* Thomas Ullman, MD,[†] Wolfgang H. Schraut, MD, PhD,[‡] Kevin E. Kip, PhD,[§]
Melissa Saul, MS,^{||} and Miguel Regueiro, MD[‡] University Hospital Baltimore

Inflamm Bowel Dis 2010

Single center retrospective study
1995-2007
227 with small bowel disease

AIM: determine if the rate of small bowel resection has declined over time according to preoperative therapy

Time Period	Total CD Patients per Year	Total SB Surgeries per Year	Surgical Rate per Year
1	229	15	1.6
2	378	22	1.9
3	387	19	1.6
4	581	27	1.9



CONCLUSION

“...rate of small bowel resection has remained unchanged despite increased utilization of anti-TNF agents. The indications for surgery have remained unaltered”

Small Bowel Resection Rates in Crohn's Disease and the Indication for Surgery Over Time: Experience from a Large Tertiary Care Center

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Inflamm Bowel Dis 2010

Single center retrospective study
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AIM: determine if the rate of small bowel resection has declined over time according to preoperative therapy

Change in behavioral phenotype
based on surgical findings

	Postop B2	Postop B3
Preop B2	71 65%	37 35%

CONCLUSION

“...one-third of patients were ultimately found to have penetrating disease...”



Surgical Unit, University of Bologna, 1995-2018

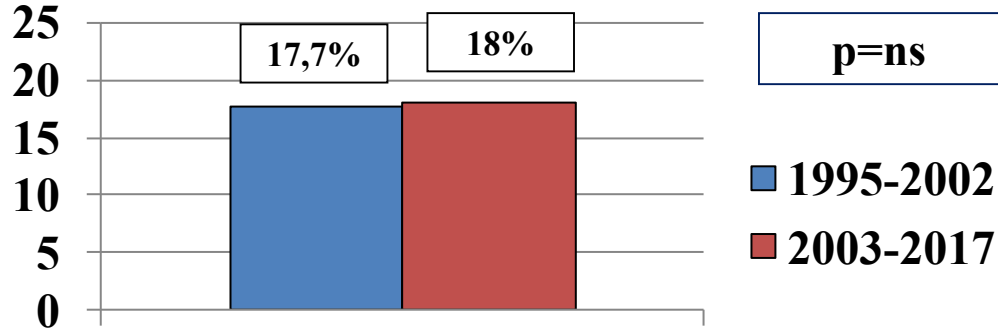
SMALL BOWEL CROHN'S DISEASE (2248 PROCEDURES)

1010 SXPL

RATE OF STRICTUREPLASTIES (358 PROCEDURES)

1995-2002 vs 2003-2018

%



SXPL

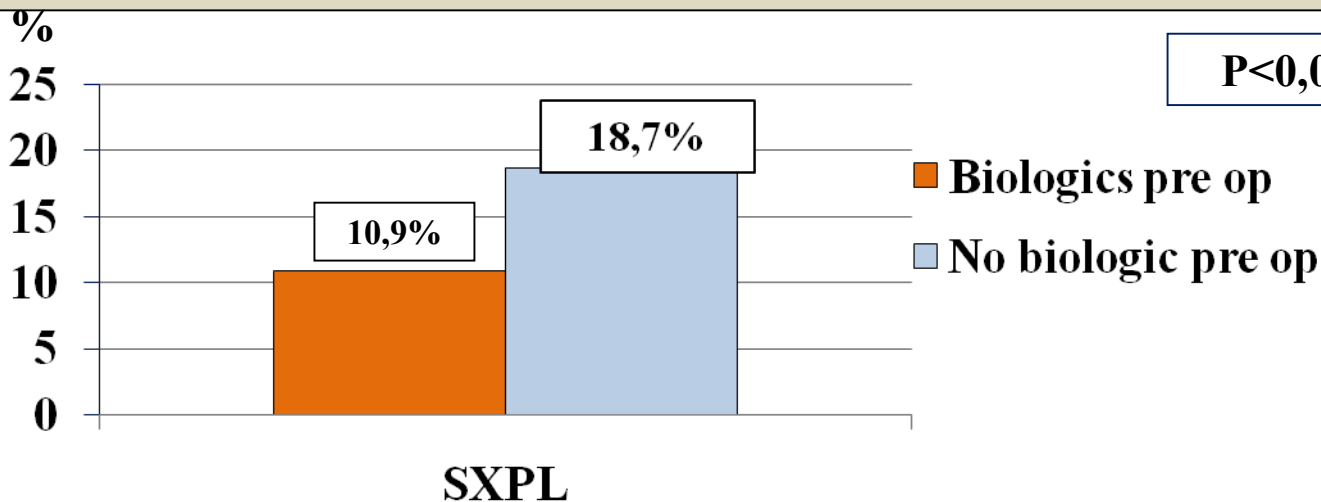
**No differences in overall
rate of strictureplasties
over time**



Surgical Unit, University of Bologna, 1995-2018

SMALL BOWEL CROHN'S DISEASE

**RATE OF STRICTUREPLASTIES (1010 SPLX ON 358 PROCEDURES)
ACCORDING TO **USE OF BIOLOGICS** 2003-2018**



Preop. use of biologics could reduce the feasibility of SXPL

ISSUES

SURGICAL TIMING IN UC AND CD

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- **Crohn's Disease - *Colitis***

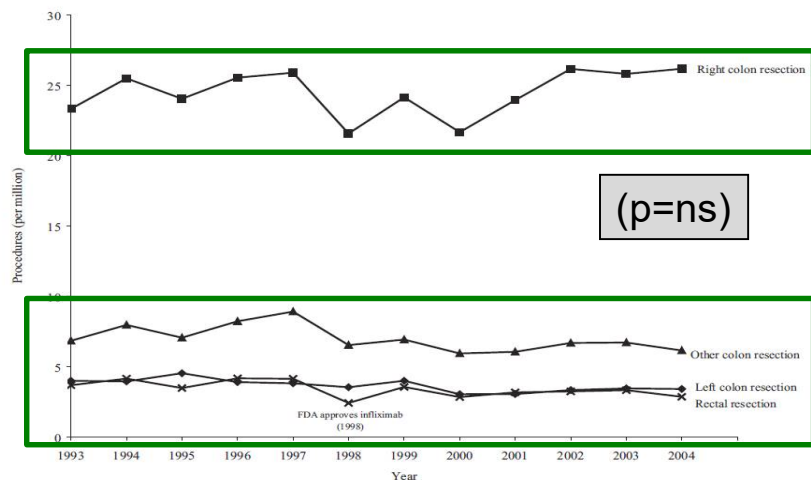
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SURGICAL RATE IN CROHN'S COLITIS

No changes in need for surgery during years

CHANGES IN SURGICAL THERAPY IN CROHN'S COLITIS

Total proctocolitis

- Very aggressive disease
- Timing of surgery is almost the same of UC, both in elective and in emergency conditions

SURGICAL INDICATION

TOTAL PROCTOCOLECTOMY IS MANDATORY

OUR NEW APPROACH

**BIOLOGICS MODIFIED
THE SURGICAL
ALGORITHM**

CHANGES IN SURGICAL THERAPY IN CROHN'S COLITIS



PROCTOCOLITIS

SURGICAL OPTIONS

Loop ileostomy

Total proctocolectomy with
permanent ileostomy

Sub-total colectomy, ileostomy and
leave the rectum



Anti TNF- α THERAPY and NEW BIOLOGICS (?)



Increased rate of rectal recovery



IRA

Risk of permanent stoma in extensive Crohn's colitis: the impact of biological drugs

M. Coscia*, L. Gentilini*, S. Laureti*, P. Gionchetti†, F. Rizzello†, M. Campieri†, C. Calabrese† and G. Poggioli*

S.Orsola-Malpighi Hospital, University of Bologna, Italy

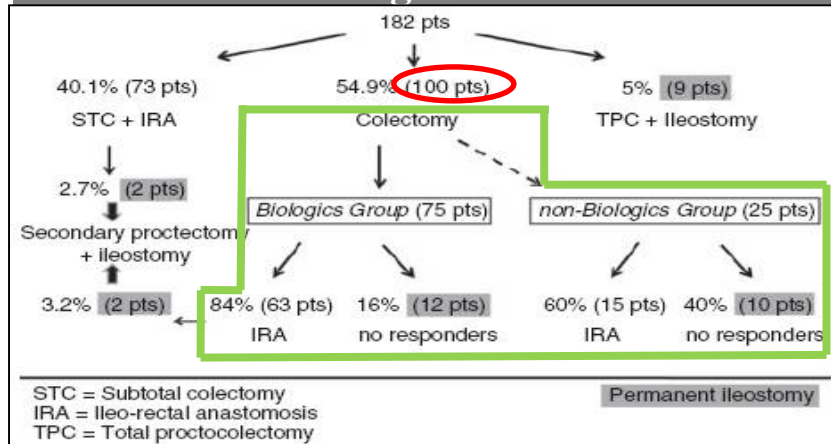
Colorectal Dis, 2013



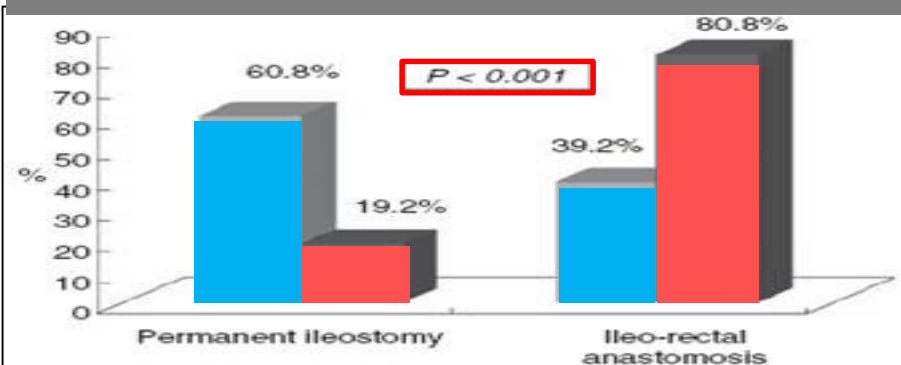
Retrospective study on 233 pts

51 pts treated before 2002 (Pre-biological Era) VS 182 pts treated after 2002 (Biological Era)

Biological Era



Permanent stoma rate



- Pre-Biological Era - Biological Era

FINAL RESULTS

- Full regression of anorectal lesions and subsequent ileo-rectal anastomosis in more than 80%

Risk of permanent stoma in extensive Crohn's colitis: the impact of biological drugs

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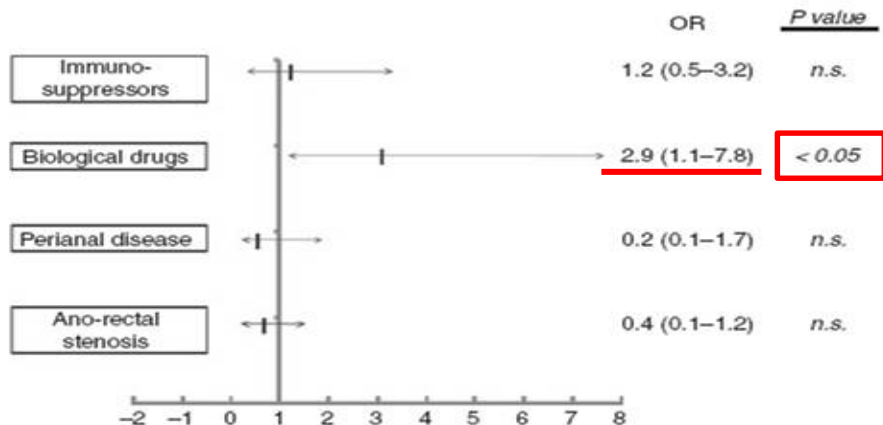
Colorectal Dis, 2013



Retrospective study on 233 pts

51 pts treated before 2002 (Pre-biological Era) VS 182 pts treated after 2002 (Biological Era)

UNIVARIATE ANALYSIS



MULTIVARIATE ANALYSIS

Factor	Preservation of anal function	Odds ratio (95% CI)	P value
Immunosuppressors	Yes	0.8 (0.3-2.4)	n.s.
	No	1.0 (reference)	
Biological drugs	Yes	3.1 (1.0-9.5)	< 0.05
	No	1.0 (reference)	
Perianal disease	Yes	0.4 (0.1-3.3)	n.s.
	No	1.0 (reference)	
Anorectal stenosis	Yes	0.4 (0.1-1.2)	n.s.
	No	1.0 (reference)	

Biological drugs are the only protective factor against permanent stoma

Conclusion

- Gastroenterologists and patients still have a certain reluctance to contact early the surgeon
- Biologics have changed surgical behaviour
 - the effect on small bowel disease is still debated*
 - the effect on colitis is certainly positive*
- Today surgical timing should be evaluated according to patients' QoL. **The perception of patient**

Perception of patients

Timing of surgery in ulcerative colitis in the biologic therapy era—the patient's perspective

Jörn Gröne^{1,2} • Eva-Maria Lorenz¹ • Claudia Seifarth¹ • Hendrik Seeliger¹ • Martin E. Kreis¹ • Mario H. Mueller³

Department of Surgery, Charité University Medicine, Berlin, Germany

Int J Colorectal Dis, 2018

193 pts with UC submitted to IPAA (2004-2015)

Aim: to determine whether or not pts would have **preferred an earlier operation** and the **reasons** for their preference

109 pts – 57% have completed the questionnaire

RESULTS

- **35.8%** of UC pts reported to have preferred **their operation MONTHS earlier**
- **16.5%** of UC pts reported to have preferred **their operation YEARS earlier**

Indications for surgery

- ✓ Refractory disease - 70.6%
- ✓ Colitis-associated colorectal cancer - 11%
- ✓ High-grade dysplasia or stenosis - 11.9%
- ✓ Septic complications - 6.4%

50.6% of these pts would have preferred **an earlier operation**

Perception of patients

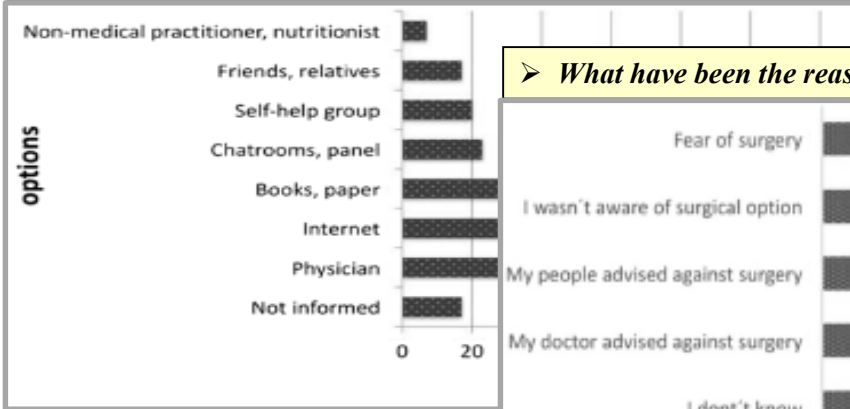
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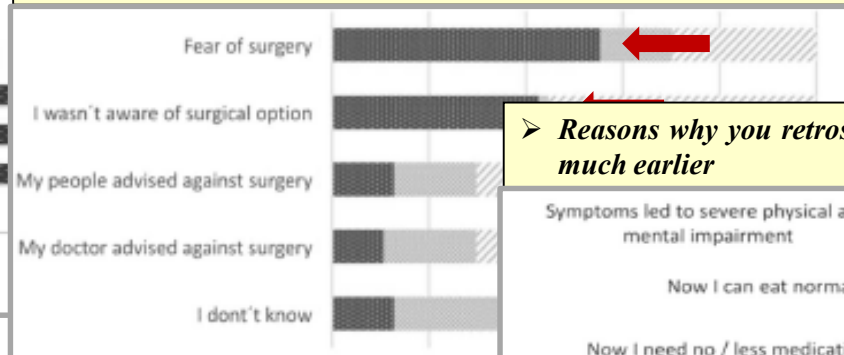
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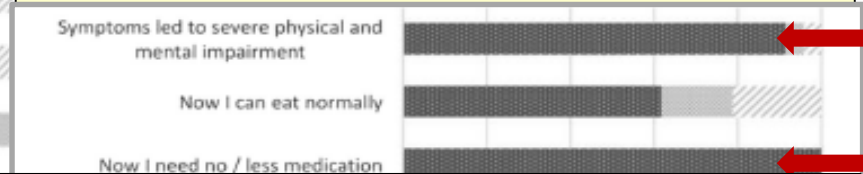
➤ Which media and sources were used for information about the disease and surgical treatment options ?



➤ What have been the reasons for delayed surgery ?



➤ Reasons why you retrospectively would have preferred surgery much earlier



“...early **interdisciplinary discussion by an IBD dedicated team** should be performed reducing therapy costs, side effects of immunosuppressive medication and complications...”



EARLIER SURGICAL CONSULTATION