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FRIDAY | FEBRUARY 8, 2019

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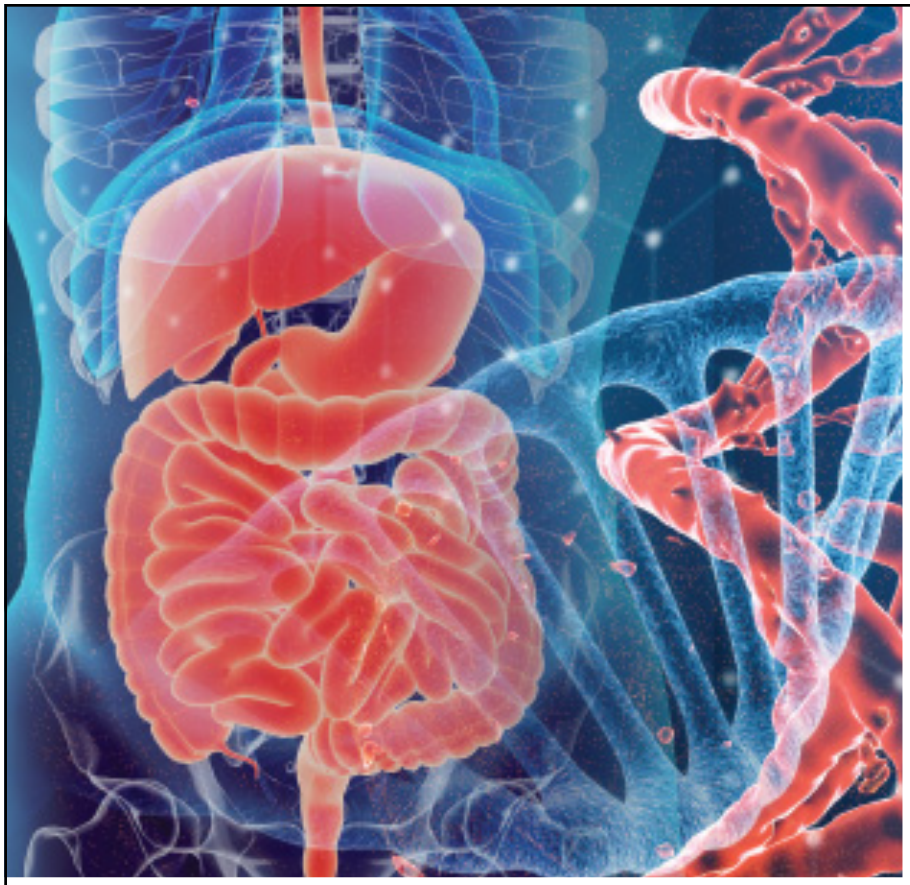

#IBDbiologics

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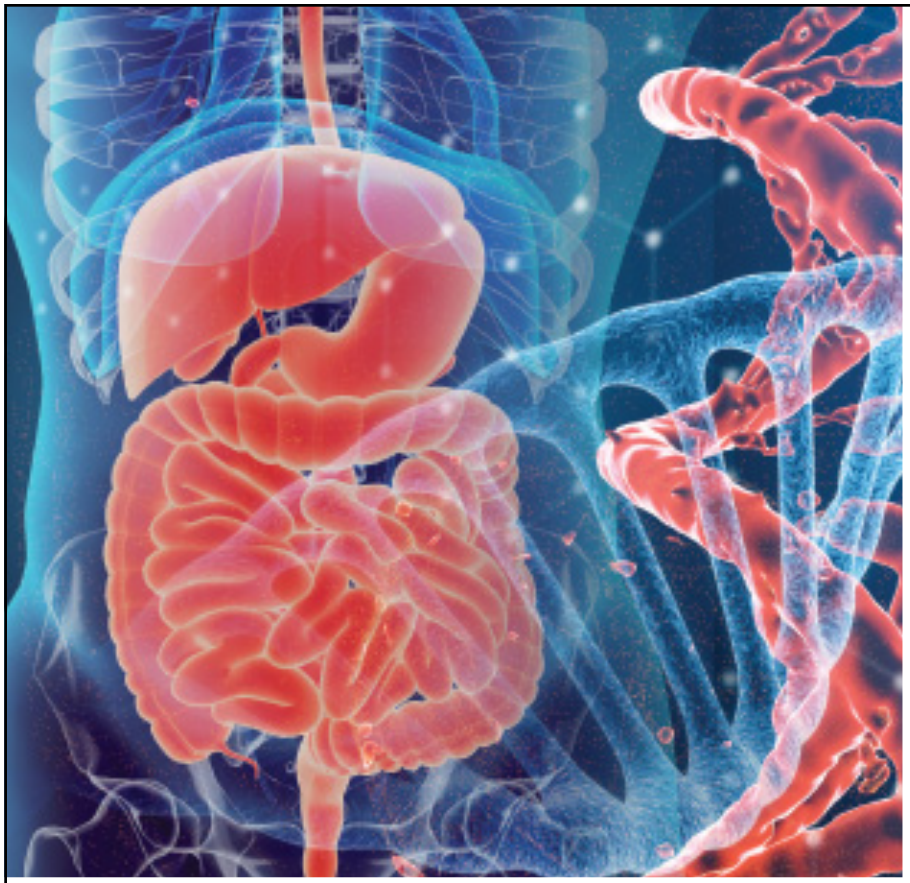
Section Chief, Gastroenterology, Hepatology and Nutrition
Co-Director, Digestive Diseases Center
University of Chicago Medicine
Chicago, IL



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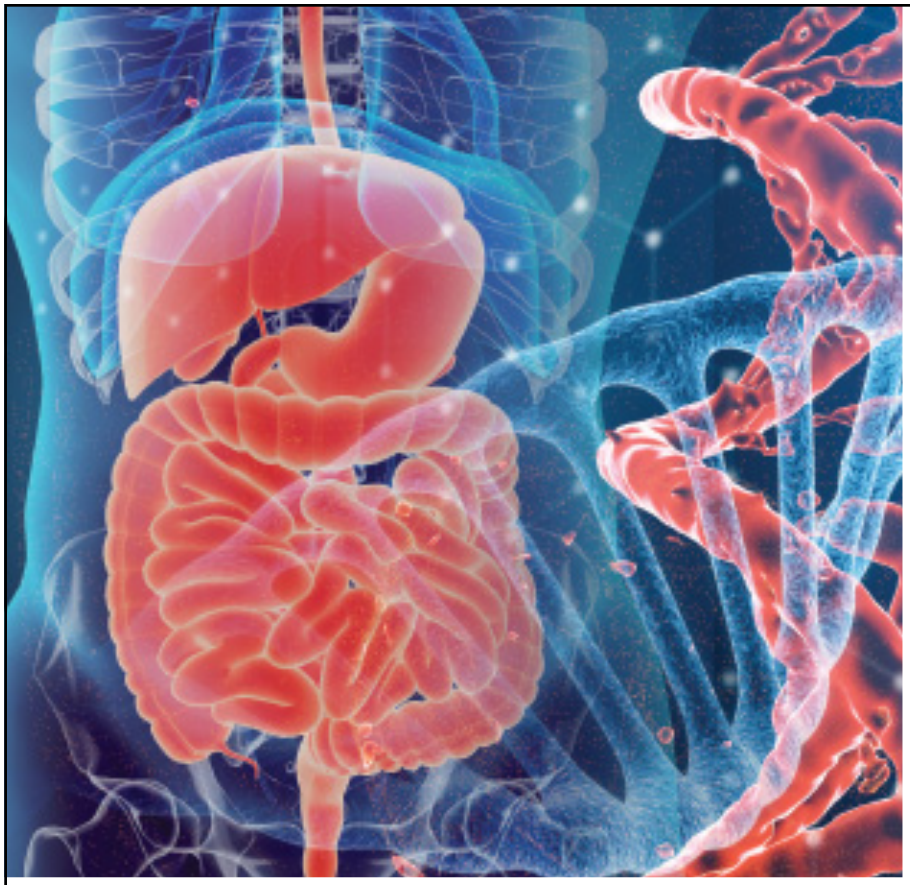

#IBDbiologics

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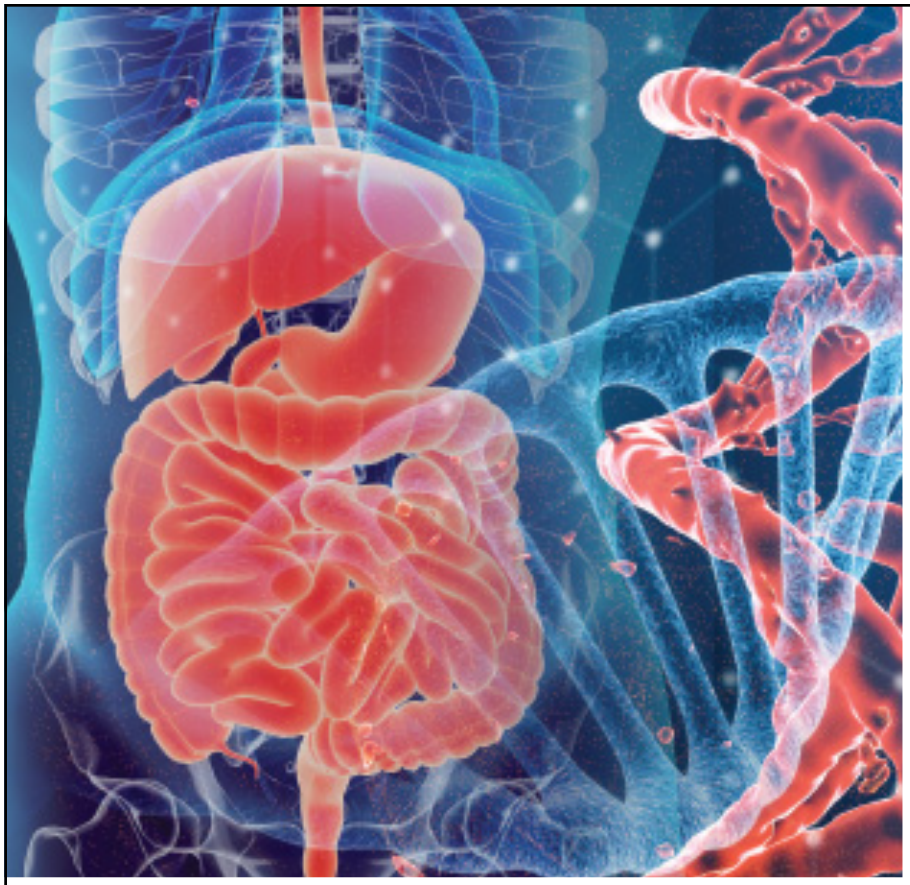


UNMET NEEDS AND GOALS OF MANAGEMENT OF IBD

David T. Rubin, MD, FACG, AGAF, FACP, FASGE

#IBDbiologics

CASE 1

- 18 yo woman newly diagnosed with Crohn's disease (CD) of the ileum and proximal colon, diarrhea
- Iron deficiency anemia
- Small perianal skin tags

CASE 2

- 26 yo man with 3 years of left-sided ulcerative colitis (UC)
- Treated intermittently with 5-ASA (non-compliant) and steroids
- Presenting now with flare
- Negative for *C. diff*
- Extension of disease to pancolitis
- Steroid-dependent

CASE 3

- 55 yo man
- Obese
- Psoriasis
- Years of “IBS”
- Now presents with bowel obstruction and found to have ileal stricture

CASE 4

- 70 yo woman
- 40 years of UC maintained with azathioprine and 5-ASA, stable remission for years
- Colonoscopy shows endoscopic and histologic quiescence

CURRENT GOALS IN IBD

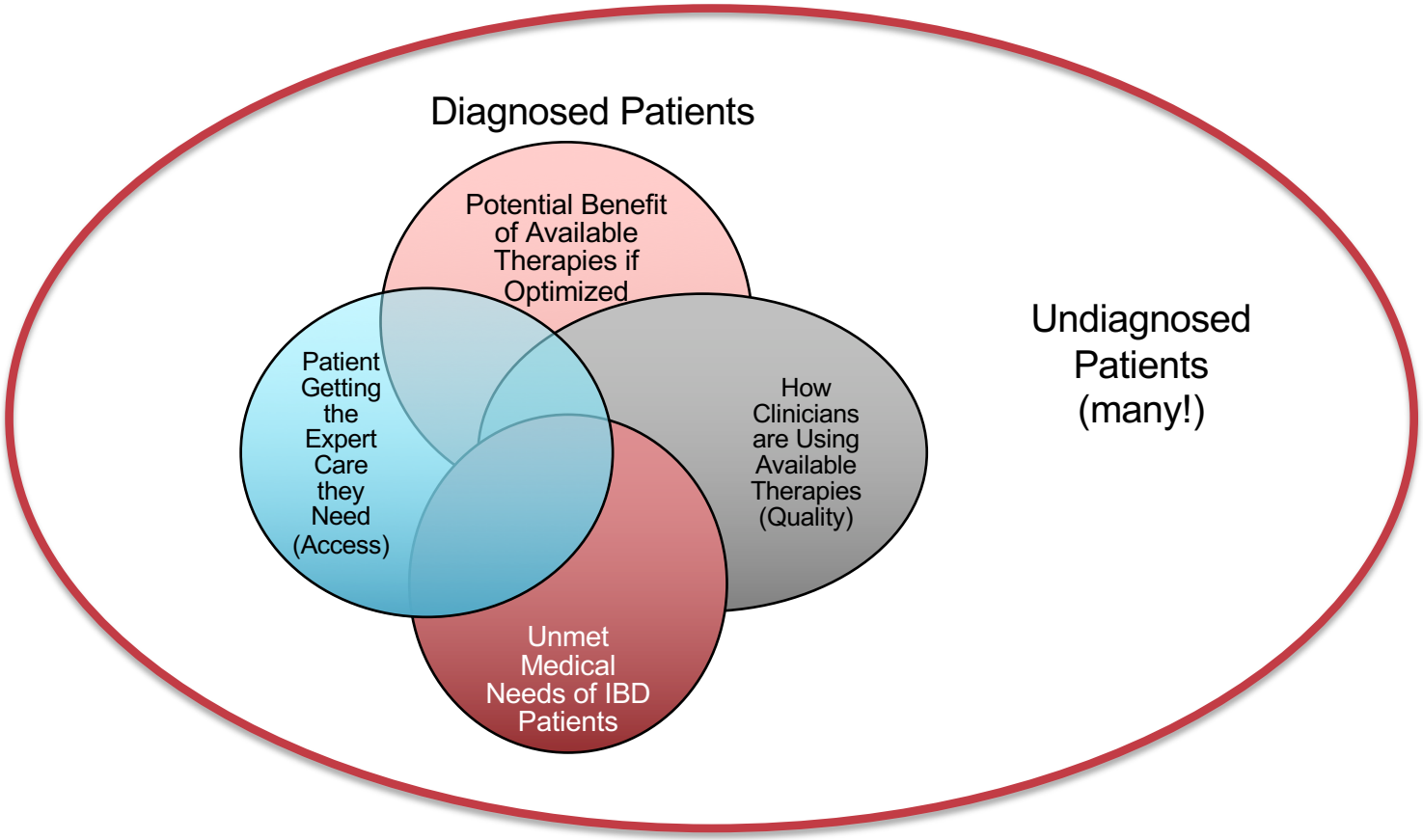
- Make the diagnosis quickly and accurately
  - Include elements of prognosis
- Achieve normal bowel function
  - Improve quality of life
- Induce remission rapidly
- Maintain steroid-free remission over time
  - Emphasis on mucosal healing, other biological markers (“deep remission”)
- Modify long-term outcomes of the disease
  - Avoid hospitalization and surgery
  - Eliminate disability
  - Minimize exposure to steroids
  - Reduce costs of care

EVOLVING PRINCIPLES OF IBD 2019

- Incorporate elements of prognosis into diagnosis and medical decision making
- Moving beyond “one size fits all” to “smart therapy for the right patient”
- Precision medicine — optimization of treatments instead of “guesswork”
- Monitoring disease activity to achieve deeper remission and to anticipate flares

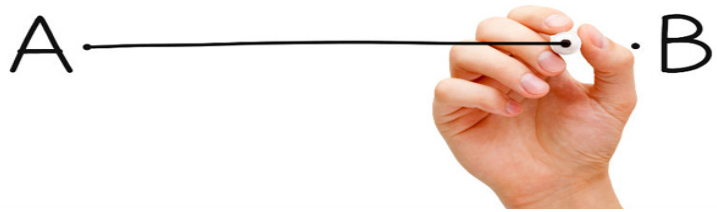
Rubin DT, et al. *Am J Gastroenterol Suppl.* 2016;3:4-7.

MISSED POTENTIAL VS UNMET NEEDS OF PATIENTS WITH IBD



WHY DON'T WE ACHIEVE PREFERRED OUTCOMES FOR EVERYONE?

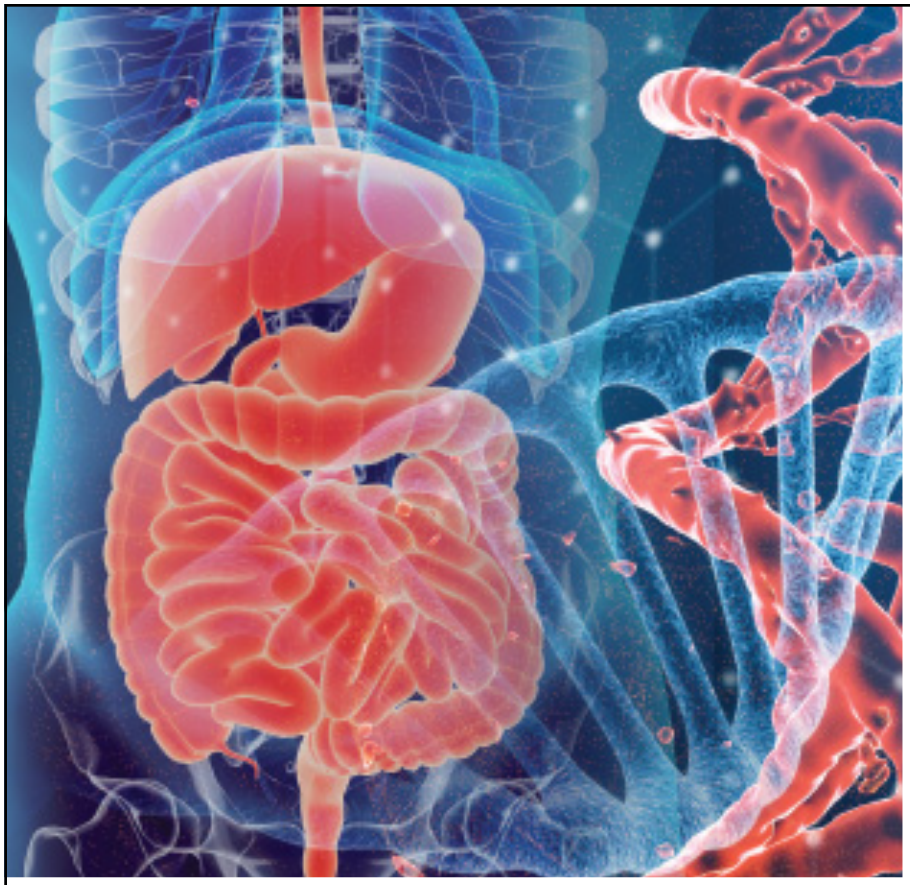
- We are too late
- Therapies don't work: guesswork (no predictive biomarkers)
- Therapies are not optimized
- We are treating the wrong problem
- Wrong endpoints: symptom improvement is "enough"



HOW CAN WE DO THIS BETTER?

- Choosing therapies based on prognosis as well as severity
- Utilizing validated objective endpoints of disease control
- Understanding therapy risk in the context of disease risk
- Adjusting therapies serially until endpoints are achieved (treat-to-target)
- Optimizing therapies to match disease severity and inflammatory burden

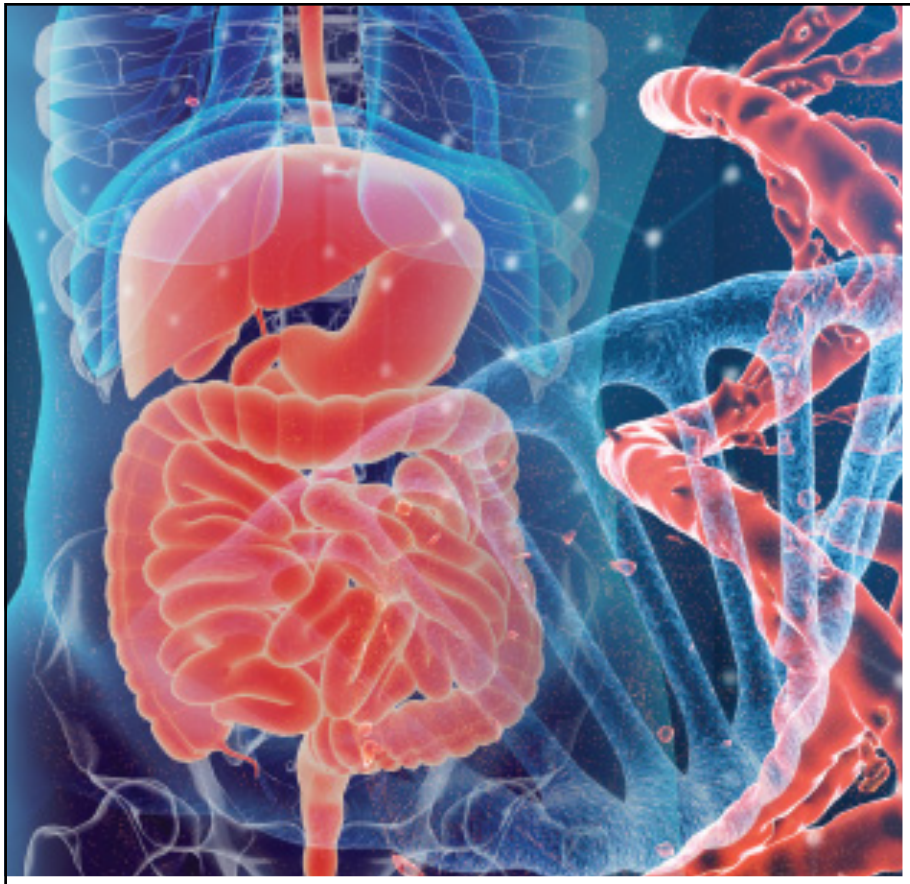
FACTORS IN TREATMENT CHOICE



TARGETED TREATMENT IN PATIENTS WITH IBD: EXAMINING THE EVIDENCE

Anita Afzali, MD

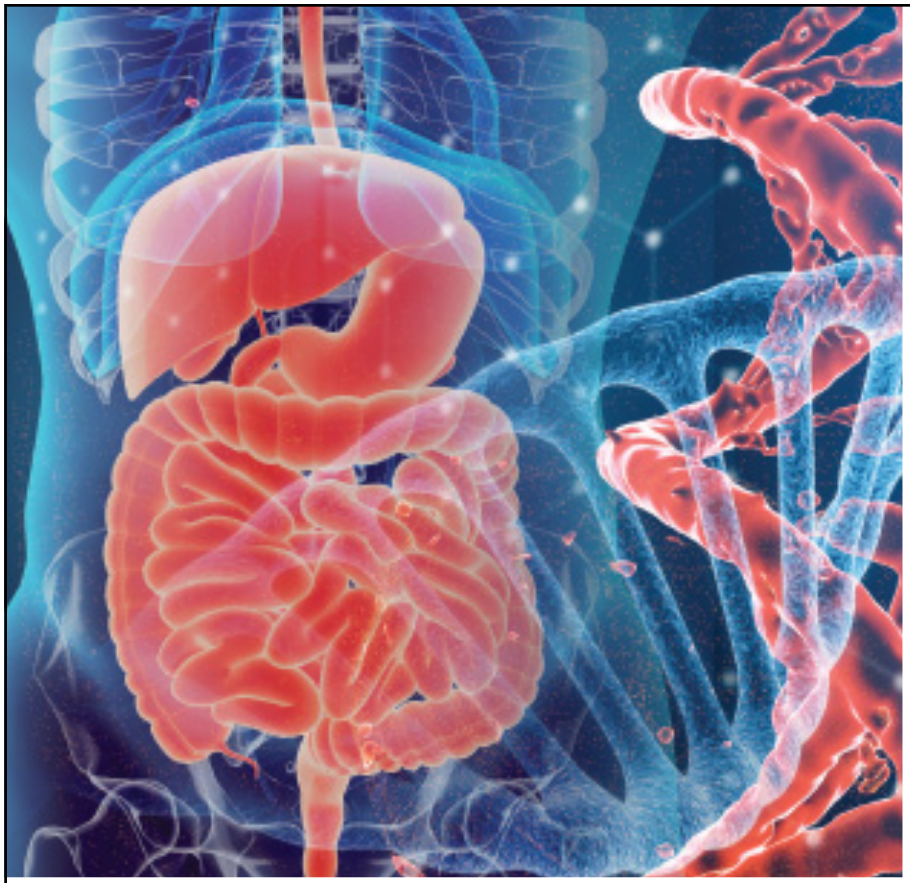
#IBDbiologics



#IBDbiologics

LEARNING OBJECTIVE 1

Evaluate clinical and real-world evidence for current and emerging targeted treatments for patients with IBD

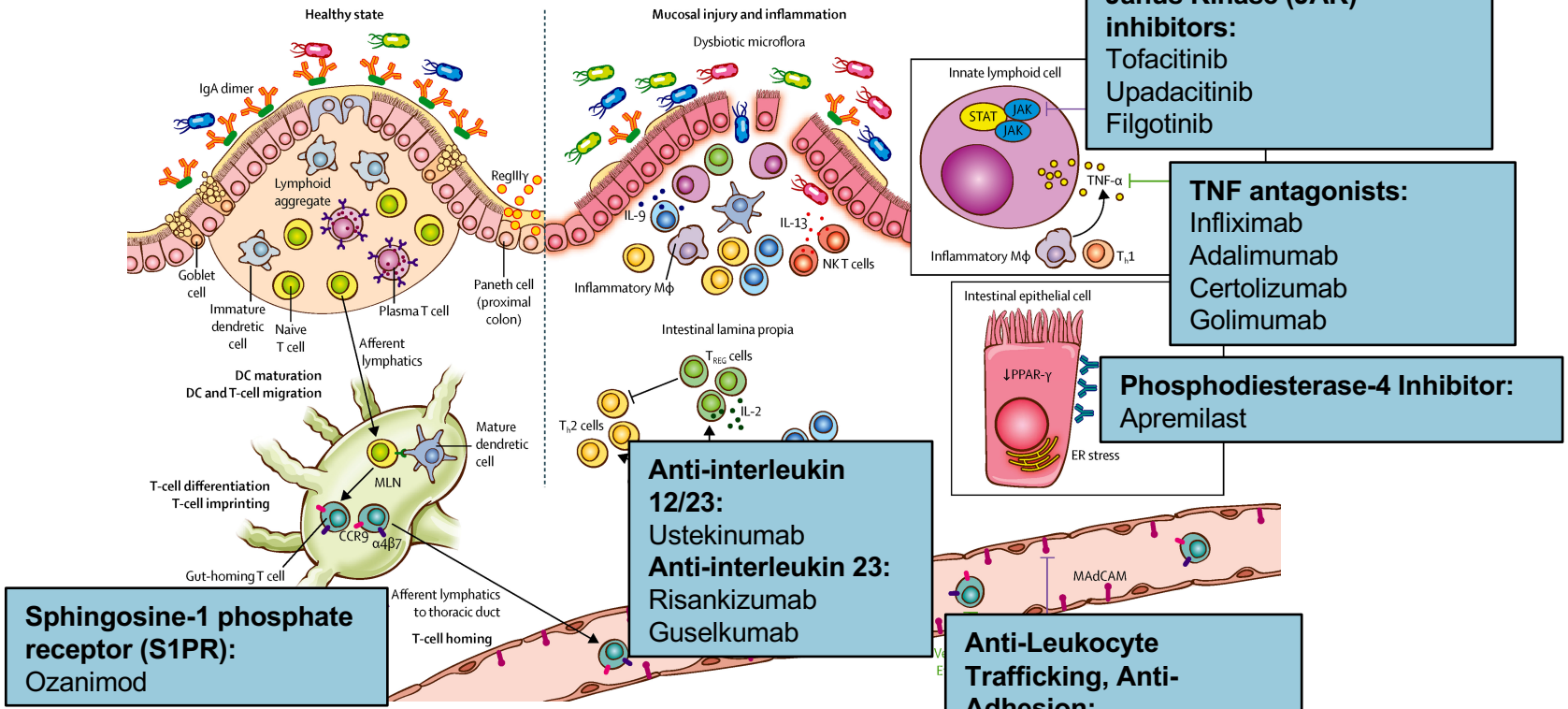


#IBDbiologics

LEARNING OBJECTIVE 2

Select patients with IBD who would benefit from early biologic therapy based on risk stratification

NOVEL TARGETS AND THERAPIES IN IBD



Janus Kinase (JAK) inhibitors:
Tofacitinib
Upadacitinib
Filgotinib

TNF antagonists:
Infliximab
Adalimumab
Certolizumab
Golimumab

Phosphodiesterase-4 Inhibitor:
Apremilast

Anti-interleukin 12/23:
Ustekinumab
Anti-interleukin 23:
Risankizumab
Guselkumab

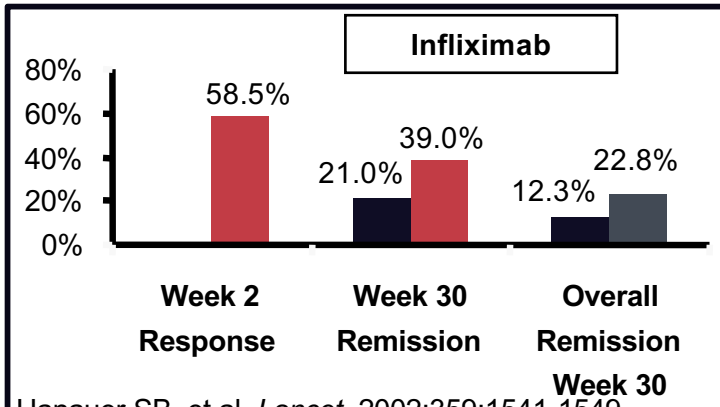
Sphingosine-1 phosphate receptor (S1PR):
Ozanimod

Anti-Leukocyte Trafficking, Anti-Adhesion:
Natalizumab
Vedolizumab
Etrolizumab
Anti-MAdCAM

Modified from Ungaro R, et al. *Lancet.* 2017;389:1756-1770.

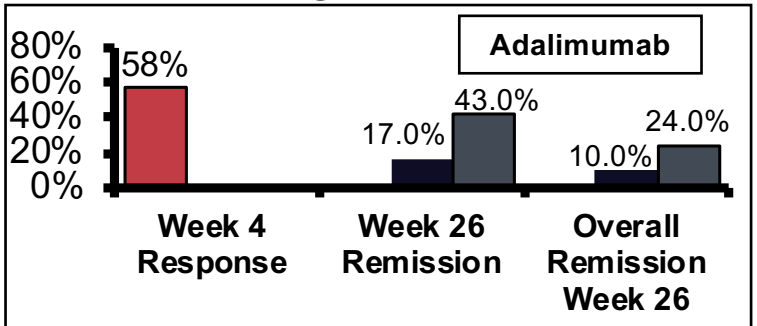
OVERALL REMISSION RATES ACROSS MAINTENANCE TRIALS IN CD

ACCENT I



Hanauer SB, et al. *Lancet.* 2002;359:1541-1549.

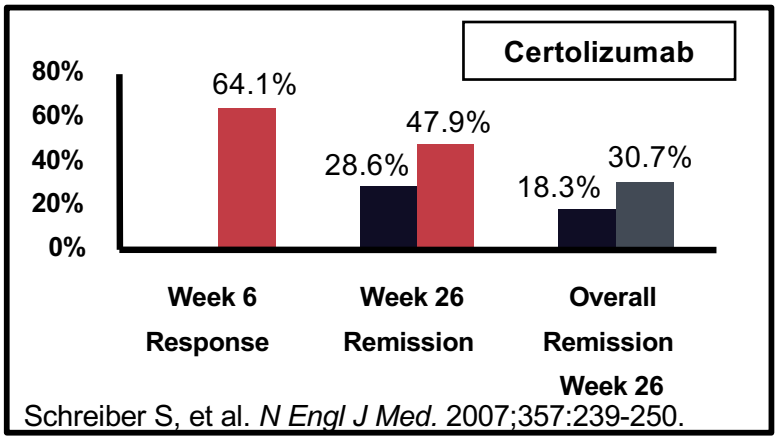
CHARM



Colombel JF, et al. *Gastroenterology.* 2007;132:52-65.

- Overall remission rate = Remission of Responders x Response
- ACCENT I, CHARM, and PRECISE 2 have similar overall response and remission rates when including all enrolled patients

PRECISE 2



Schreiber S, et al. *N Engl J Med.* 2007;357:239-250.

ANTI-TNF THERAPY: OVERALL EFFICACY AND SAFETY

- Most studies have shown “similar” efficacy and safety across class
- All/most treat multiple immune diseases (RA, psoriasis, IBD)
- Dose and duration related adverse effects
  - Psoriasiform rash, drug-induced lupus, demyelinating disease
  - Sensitization reactions
    - If + Ab, can use second or third agent but decreasing efficacy; can switch to out of class
- Relative contraindications
  - Opportunistic infections (TB, histo, etc.) – should avoid class
  - Heart failure class III or IV – should avoid class
  - Demyelinating disease – should avoid class
  - Chronic viral hepatitis – talk with your hepatologist

FACTORS THAT INFLUENCE PHARMACOKINETICS (PK)

Factor	Impact on PK
Presence of ADAs	• Decreases serum drug concentration • 3-fold increased clearance • Worse clinical outcomes
Concomitant use of immunomodulator	• Reduces formation of ADAs • Increases serum drug concentration • Decreases drug clearance • Better clinical outcomes
High baseline TNF	• May decrease serum drug concentration by increasing clearance
Low albumin	• Increases clearance • Worse clinical outcomes
High baseline CRP	• Increases clearance
Body size	• High BMI may increase clearance
Gender (sex)	• Males have higher clearance

Adapted from Ordas I, et al. *Clin Pharmacol Ther.* 2012;91:635-646.

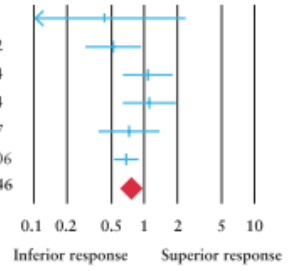
TNF EXPOSURE RESPONSE: PRIMARY NON-RESPONDER (PNR)

(a)

Response to second-line biologics—prior primary non-response [PNR] vs. intolerance

Study name	Risk ratio	Lower limit	Upper limit	Events / Total Group-A	Events / Total Group-B
GEMINI-I induction	0.44	0.08	2.38	3 / 44	2 / 13
GEMINI-I maintenance	0.52	0.29	0.93	11 / 33	14 / 22
GEMINI II and III	1.08	0.64	1.81	25 / 109	20 / 94
GEMINI II maintenance	1.11	0.64	1.92	20 / 68	17 / 64
CERTIFI	0.73	0.38	1.38	10 / 36	18 / 47
UNIT 1	0.69	0.53	0.89	72 / 305	105 / 306
PNR vs. intolerance	0.76	0.61	0.96	141 / 595	176 / 546

Risk ratio and 95% CI



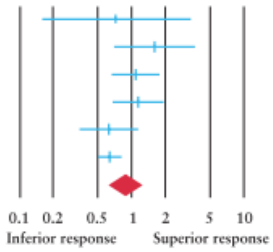
24% less likely to achieve remission with 2nd biologic

(b)

Response to second-line biologics—prior primary non-response [PNR] vs. loss of response [LOR]

Study name	Risk ratio	Lower limit	Upper limit	Events / Total Group-A	Events / Total Group-B
GEMINI-I induction	0.73	0.16	3.37	3 / 44	3 / 32
GEMINI-I maintenance	1.62	0.71	3.67	11 / 33	7 / 34
GEMINI II and III	1.09	0.68	1.75	25 / 109	30 / 143
GEMINI II maintenance	1.15	0.70	1.91	20 / 68	24 / 94
CERTIFI	0.63	0.35	1.11	10 / 36	42 / 95
UNIT 1	0.64	0.51	0.81	72 / 305	171 / 466
Primary PNR vs. secondary LOR	0.88	0.64	1.21	141 / 595	277 / 864

Risk ratio and 95% CI

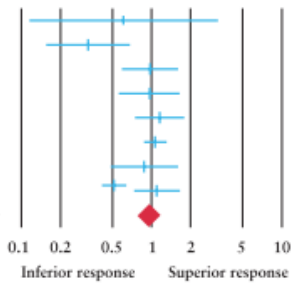


(c)

Response to second-line biologics—prior loss of response [LOR] vs. intolerance

Study name	Risk ratio	Lower limit	Upper limit	Events / Total Group-A	Events / Total Group-B
GEMINI-I induction	0.61	0.11	3.23	3 / 32	2 / 13
GEMINI-I maintenance	0.32	0.16	0.67	7 / 34	14 / 22
GEMINI II and III	0.99	0.60	1.63	30 / 143	20 / 94
GEMINI II maintenance	0.96	0.56	1.64	24 / 94	17 / 64
CERTIFI	1.15	0.75	1.77	42 / 95	18 / 47
UNIT 1	1.07	0.88	1.30	171 / 466	105 / 306
GAIN	0.88	0.49	1.59	15 / 77	21 / 95
Sandborn CZP	1.10	0.74	1.65	33 / 79	25 / 66
Secondary LOR vs. intolerance	0.96	0.78	1.18	325 / 1020	222 / 707

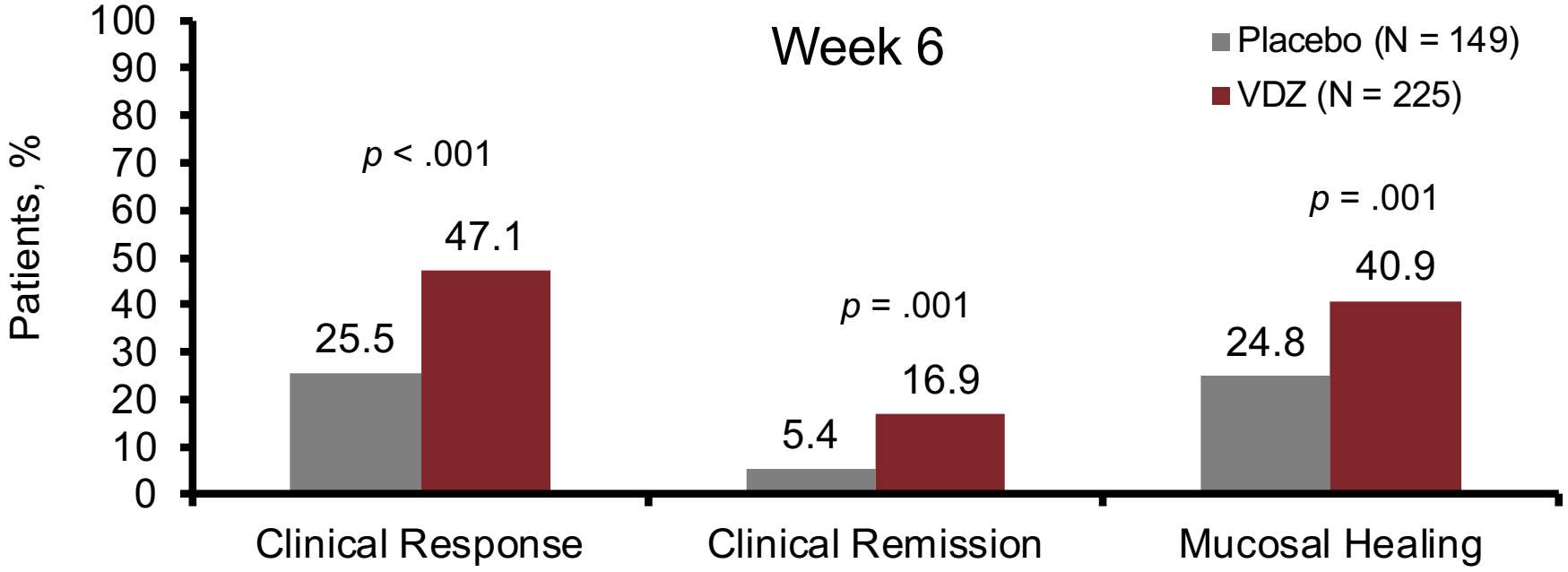
Risk ratio and 95% CI



Patients with PNR to anti-TNF agents less likely to respond to second-line non-TNF biologic, compared with patients dc'd for secondary LOR or intolerance

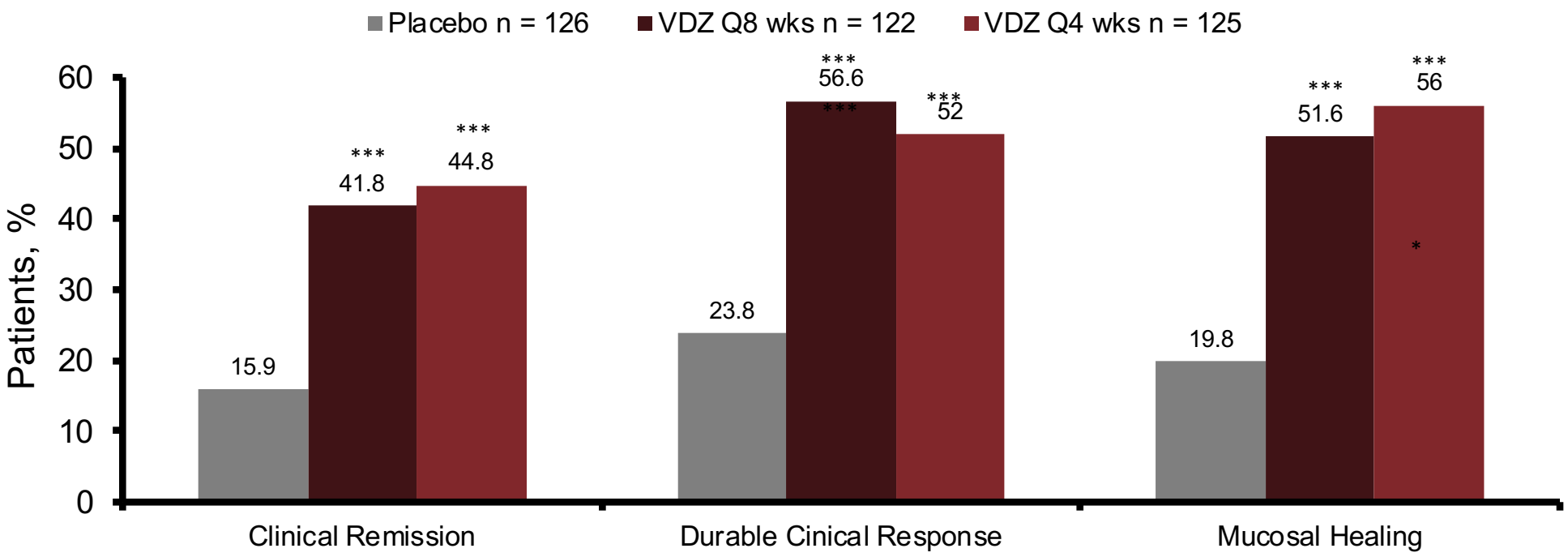
Singh S, et al. *J Crohns Colitis.* 2018;12:635-643.

VEDOLIZUMAB: CLINICAL RESPONSE AND REMISSION IN UC (GEMINI I)



Feagan BG, et al. *N Engl J Med*. 2013;369:699-710.

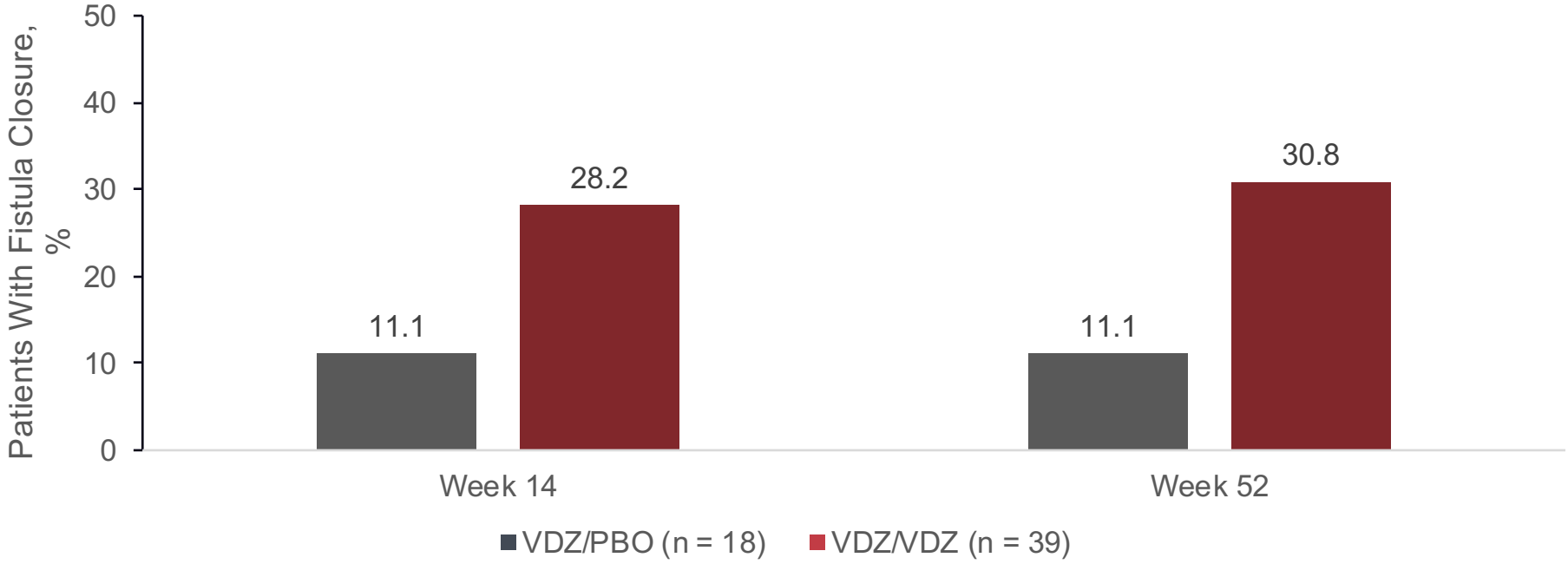
VEDOLIZUMAB: MAINTENANCE OF REMISSION IN UC (GEMINI I) AT WEEK 52



****p* < .001

Feagan BG, et al. *N Engl J Med*. 2013;369:699-710.

VEDOLIZUMAB IN FISTULIZING CD (GEMINI 2)



Feagan B, et al. *J Crohns Colitis.* 2018;12:621-626.

PROPOSED POSITIONING OF TNF INHIBITORS VS VDZ

Anti-TNF

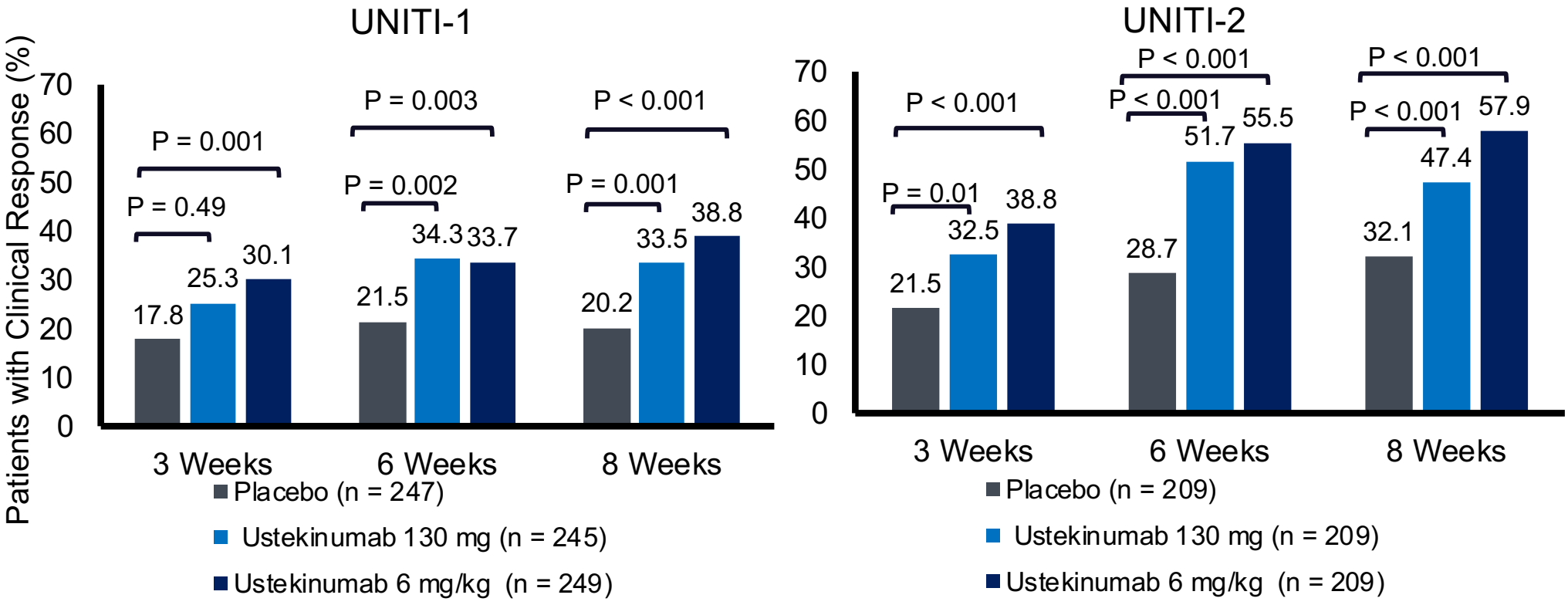
- Hospitalized acute severe colitis
- Perianal, fistulizing disease (IFX)
- Severe EIMs (e.g. PG, iritis)
- Pregnancy (CTZ)

VDZ

- TNF-refractory patients
- High or at risk for opportunistic infections
- At risk or with history of malignancy
- Elderly
- CHF

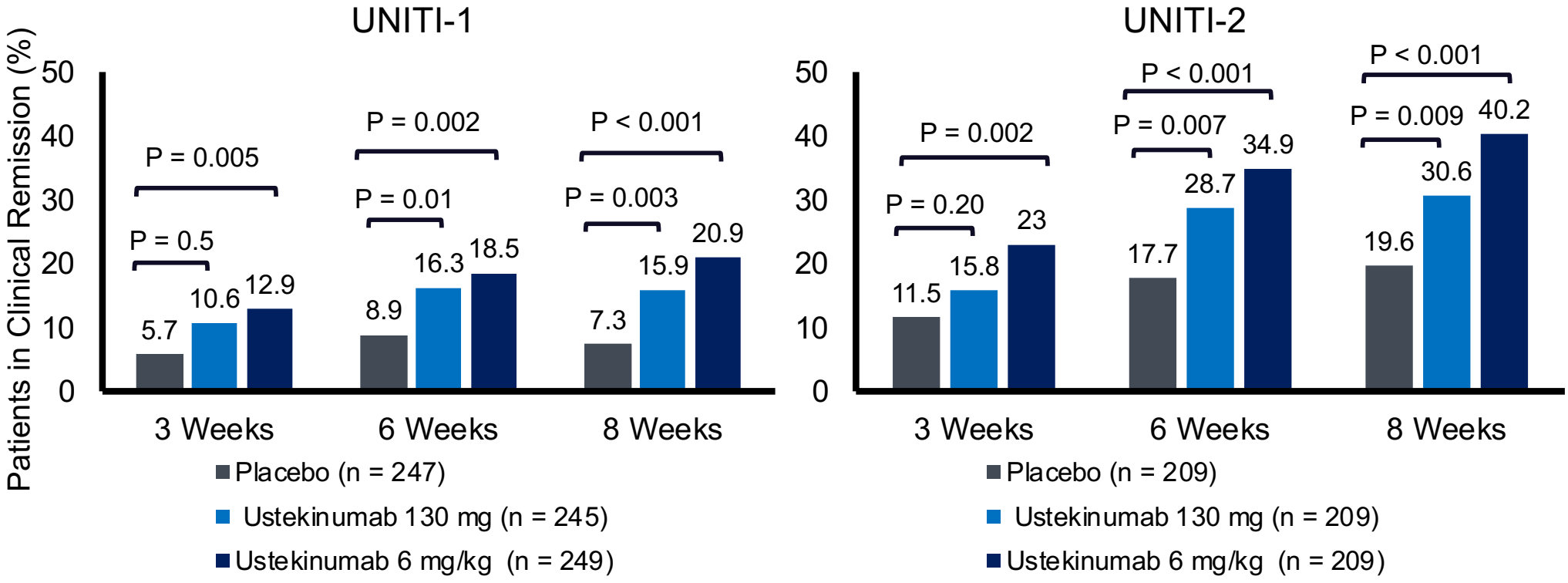
PK of vedolizumab similar to TNF inhibitors

USTEKINUMAB: CLINICAL RESPONSE IN CD



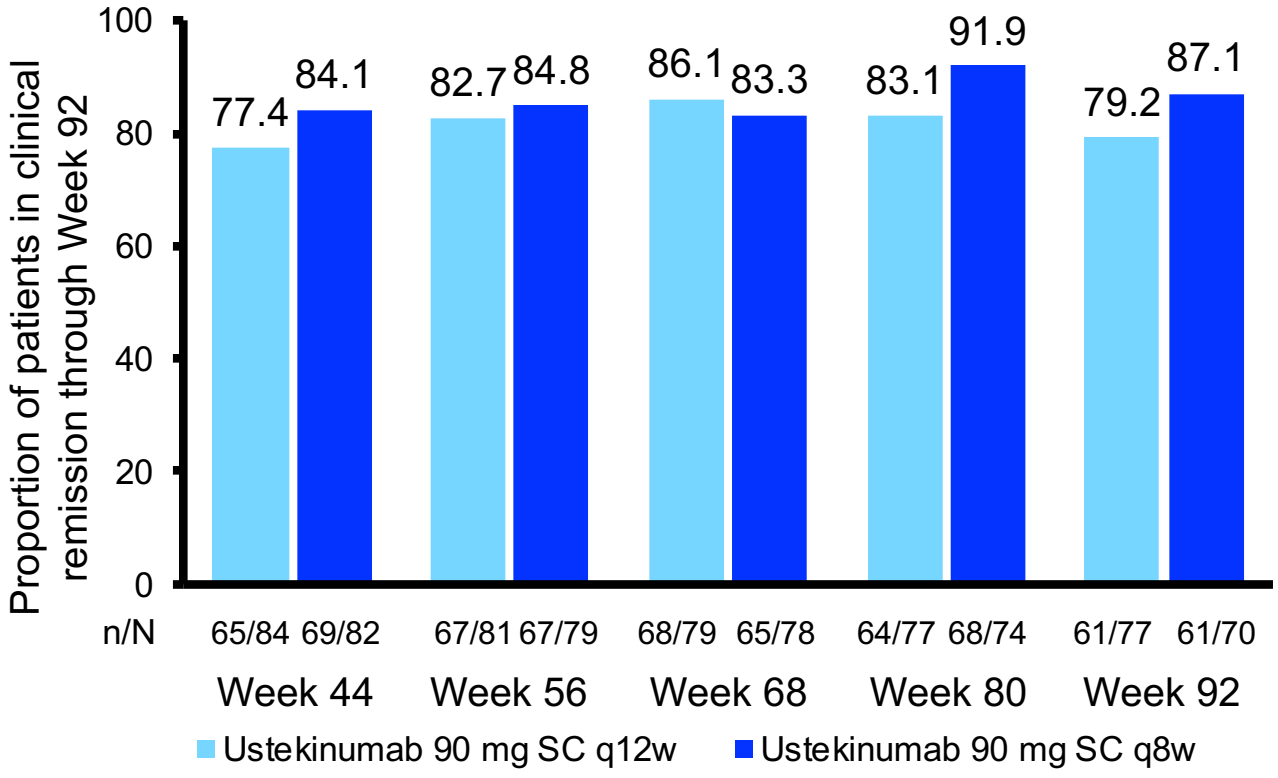
Feagan BG, et al. *New Eng J Med.* 2016;375:1946-1960.

USTEKINUMAB: CLINICAL REMISSION IN CD



Feagan BG, et al. *New Eng J Med.* 2016;375:1946-1960.

USTEKINUMAB: MAINTENANCE OF REMISSION IN CD AT WEEK 92



- Pts taking UST q12w:
  - 52% less likely to be hospitalized or require surgery
  - 33% less likely to switch to alternative biologics
- Pts taking UST q8w:
  - 40% less likely to be hospitalized or require surgery
  - 53% less likely to switch to alternative biologics

Sandborn W, et al. *Aliment Pharmacol Ther.* 2018;48:65-77.

FISTULA HEALING IN PIVOTAL STUDIES OF USTEKINUMAB IN CD

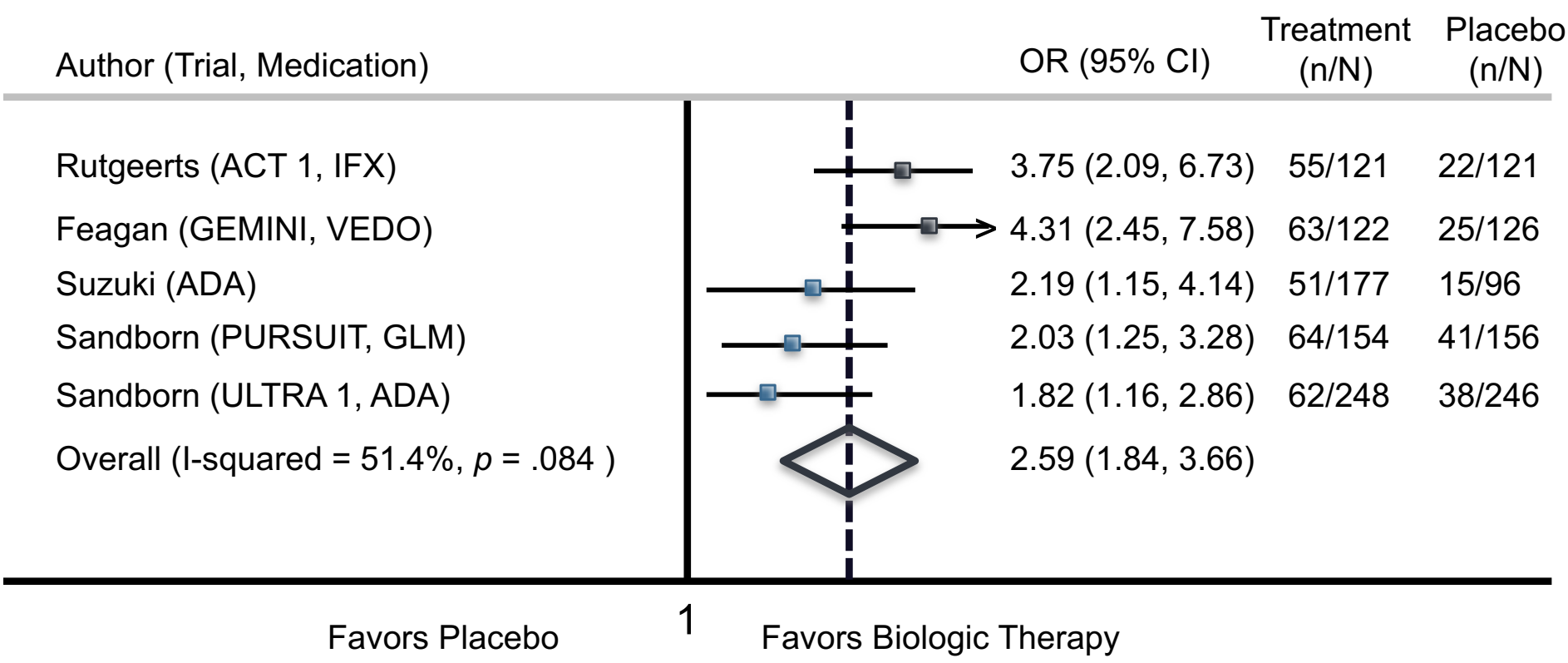
Fistula Assessments at Week 8 Among Randomized Patients With Open Perianal Fistulas at Baseline in Certifi, UNITI-1, and UNITI-2				
Combined Treatment Group (total n)	**PBO (n = 588)**	**1 mg/kg or 130 mg UST (n = 585)**	**6 mg/kg UST (n = 589)**	**All UST (n = 1,306)**
Fistula response at wk 8, %	**16.9**	**25.8 (*p* = 0.2)**	**27.7 (*p* = 0.14)**	**26.0 (*p* = 0.14)**
Fistula resolution at wk 8, %	**14.1**	**24.2 (*p* = 0.134)**	**27.7 (*p* = 0.052)**	**24.7 (*p* = 0.073)**

Sands B, et al. *Gastroenterology.* 2017;152(5):S185.

POSITIONING OF USTEKINUMAB IN CROHN'S DISEASE

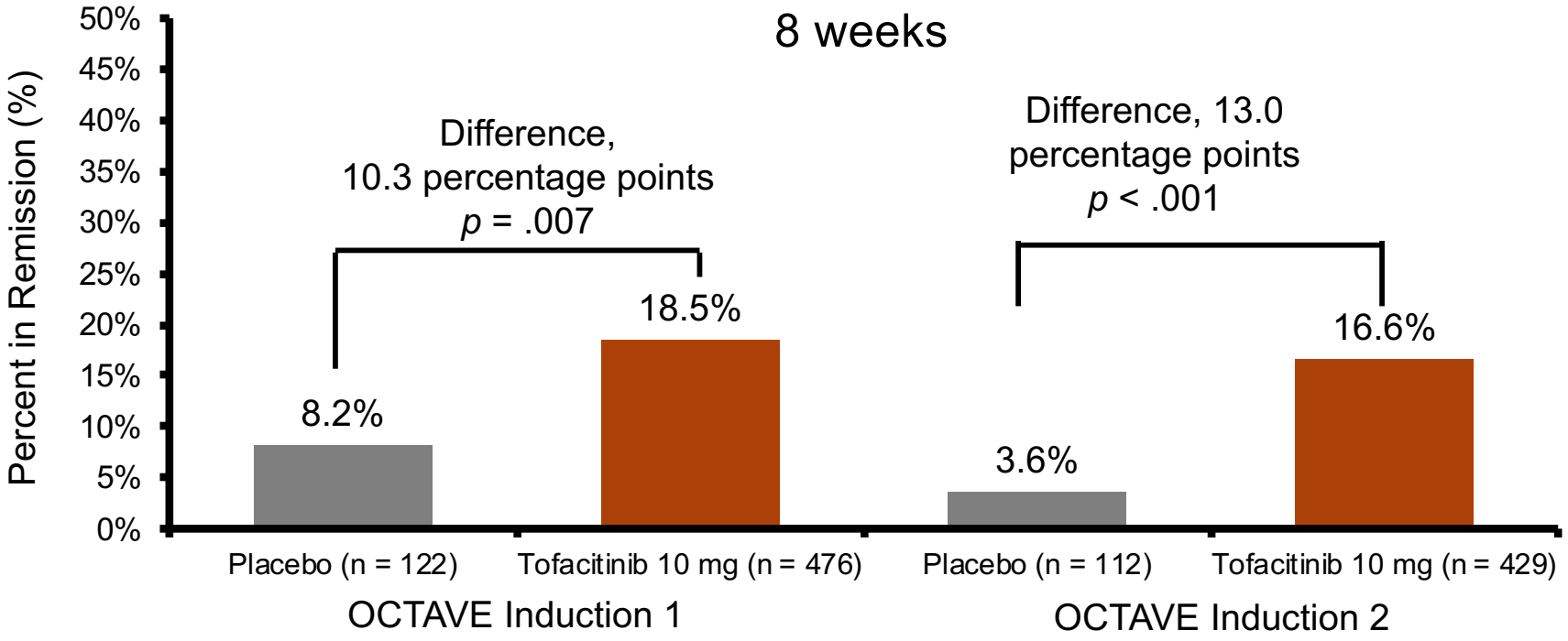
- No comparative effectiveness studies to other MOA – *yet*
- Consider patients based on:
  - Rapidity of onset
  - Immunogenicity very low: < 2%
  - Safety considerations – no association with TB seen in UST trials
  - Patient populations: CHF, MS, RA, etc.
  - Psoriasiform rash from anti-TNF
  - Convenience
  - Cost

EFFECTIVENESS OF BIOLOGICS IN ATTAINING MUCOSAL HEALING IN UC: MAINTENANCE TRIALS



Cholapranee A, et al. *Aliment Pharmacol Ther*. 2017.45(10):1291-1302.

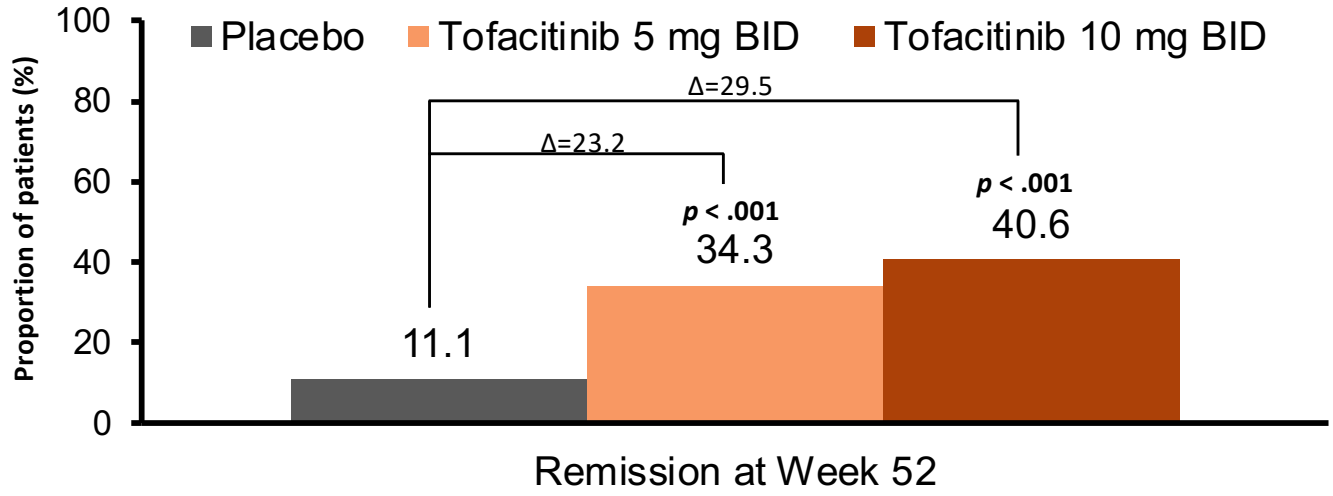
TOFACITINIB FOR INDUCTION OF REMISSION IN PATIENTS WITH UC



Remission = total Mayo score of ≤ 2, with no subscore > 1 and a rectal bleeding subscore of 0.

Sandborn WJ, et al. *N Engl J Med*. 2017;376:1723-1736.

TOFACITINIB: MAINTENANCE OF REMISSION IN UC AT WEEK 52 (OCTAVE SUSTAIN)



n/N	22/198	68/198	80/197
Diff. from placebo (95% CI)	-	23.2 (15.3, 31.2)	29.5 (21.4, 37.6)

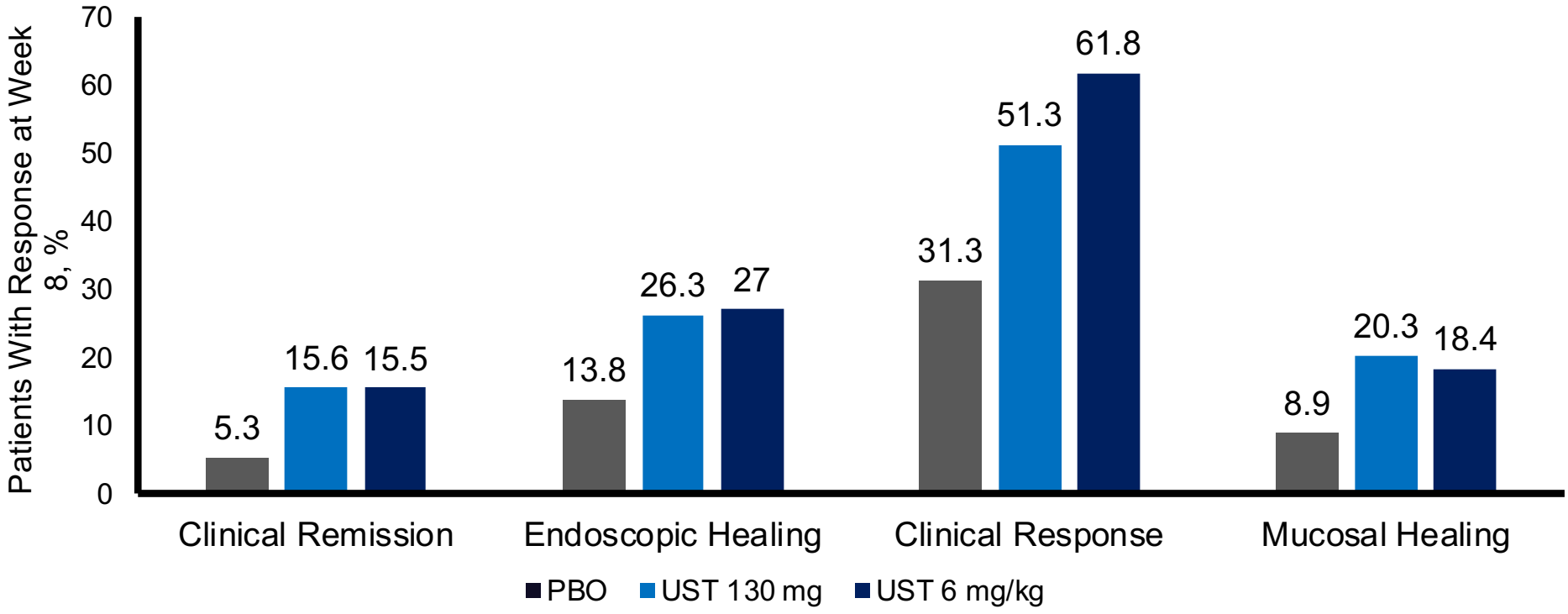
Sandborn WJ, et al. *N Engl J Med.* 2017;376:1723-1736.

POSITIONING TOFACITINIB IN UC

- Oral
- Patients with concomitant rheumatoid arthritis or psoriatic arthritis
- Rapid onset
  - Post-hoc analysis data from phase 3 trials of induction therapy – significant improvement in symptoms vs placebo within 3 days[1]
- Short half-life, no immunogenicity
- To avoid steroids?
- Unproven but possible: bridge to another treatment
- Depends on our payers

Hanauer S, et al. *Clin Gastreoenterol Hepatol.* 2019;17:139-147.

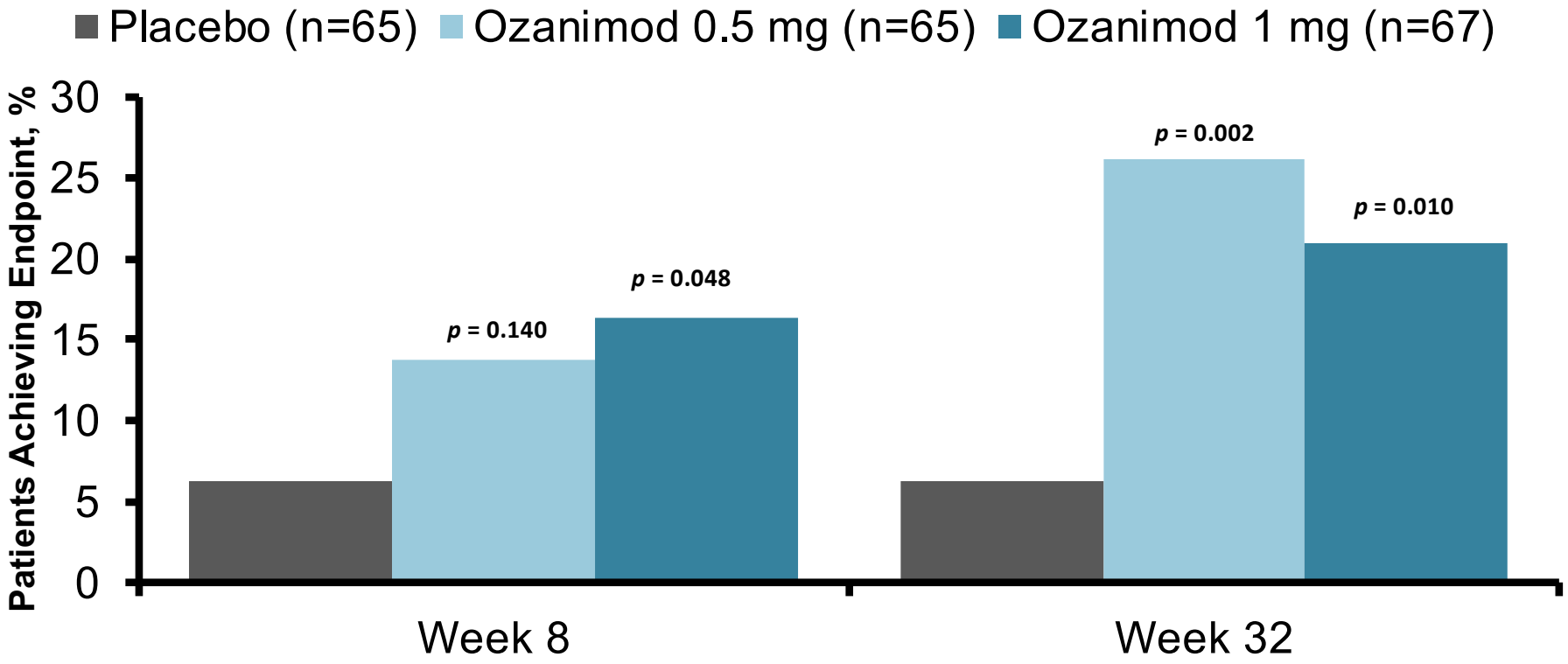
USTEKINUMAB* IN UC AT WEEK 8 (UNIFI)



*not currently FDA approved for treatment of UC.

Sands BE, et al. Presented at: ACG 2018. Abstract No. 54A.

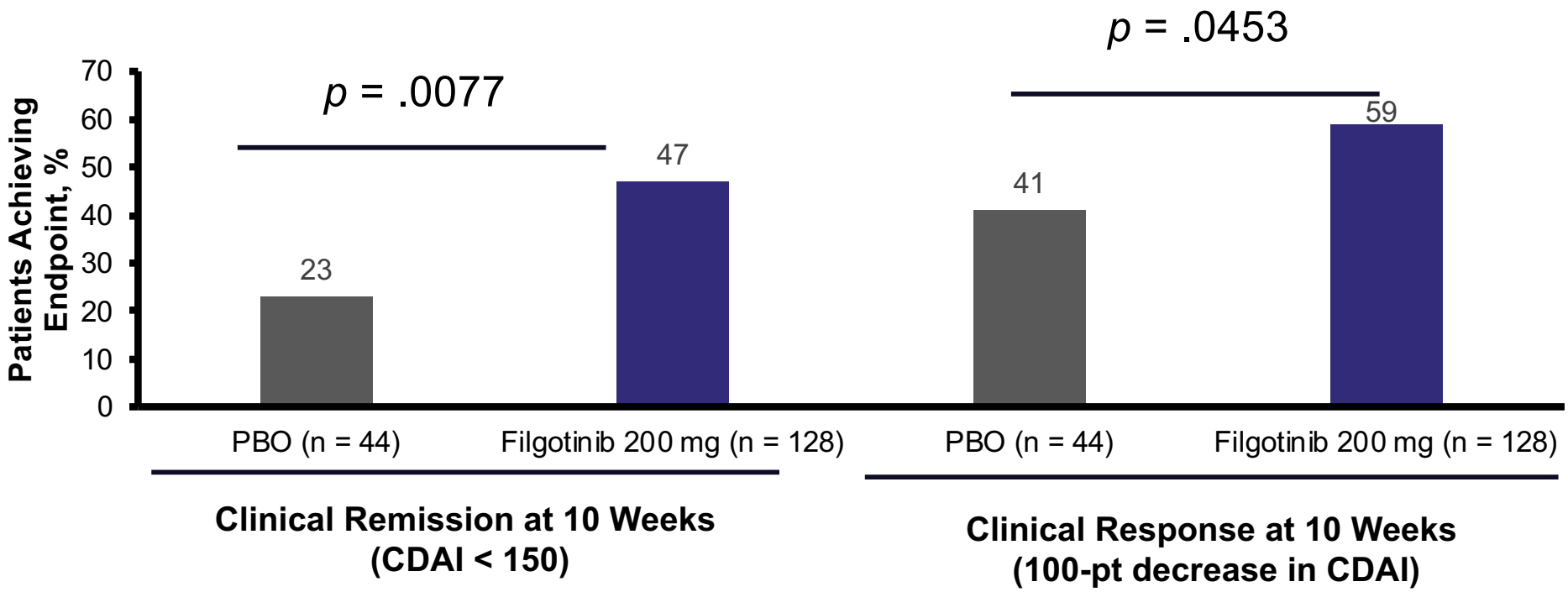
OZANIMOD* IN UC: CLINICAL REMISSION AT WEEK 8 AND 32



*not currently FDA approved for treatment of UC.

Sandborn WJ, et al. *N Engl J Med.* 2016;374:1754-1762.

FILGOTINIB* IN MODERATE-TO-SEVERE CD: PHASE 2 STUDY RESULTS



*not currently FDA approved for the treatment of CD.

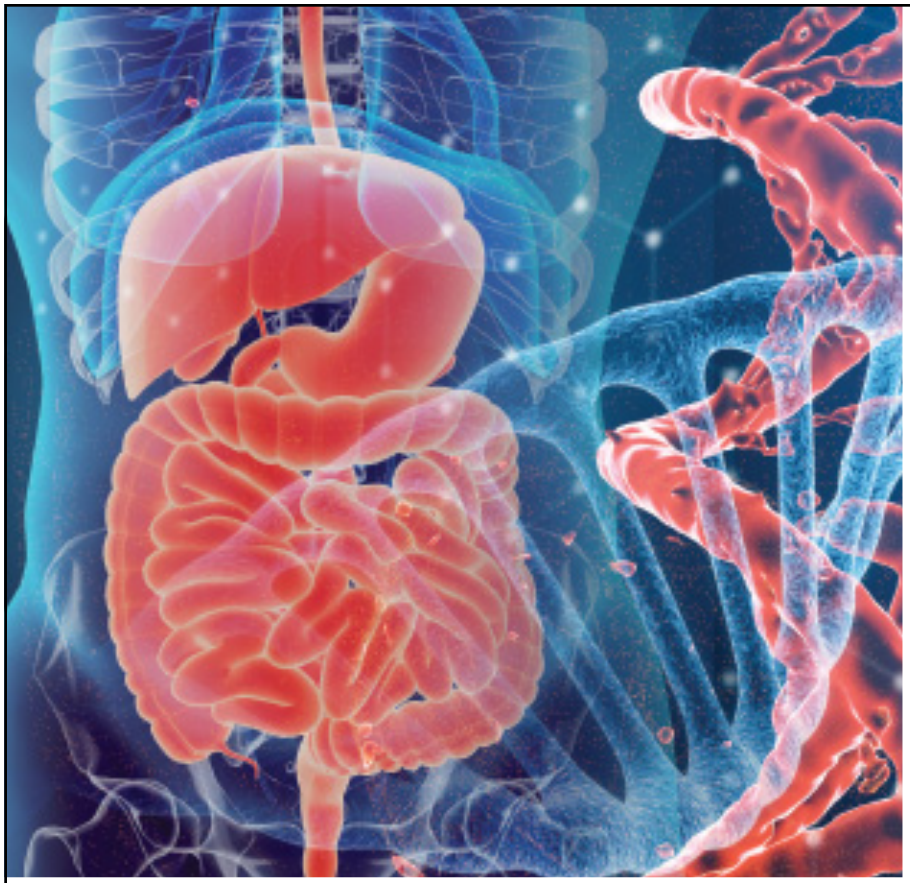
Vermeire S, et al. *Lancet.* 2017;389:266-275.

UPADACITINIB* IN MODERATE-TO-SEVERE CD: 52 WEEKS

Among Patients Who Achieved Clinical Response at Wk 16 in the Induction Phase				
Endpoints at Wk 52	UPA 3 mg BID (n = 32)	UPA 6 mg BID (n = 14)	UPA 12 mg BID (n = 29)	UPA 24 mg QD (n = 19)
Modified clinical remission	29%	43%	52%	39%
Clinical remission	25%	29%	41%	32%
Clinical response	50%	71%	62%	42%

*not currently FDA approved for treatment of CD

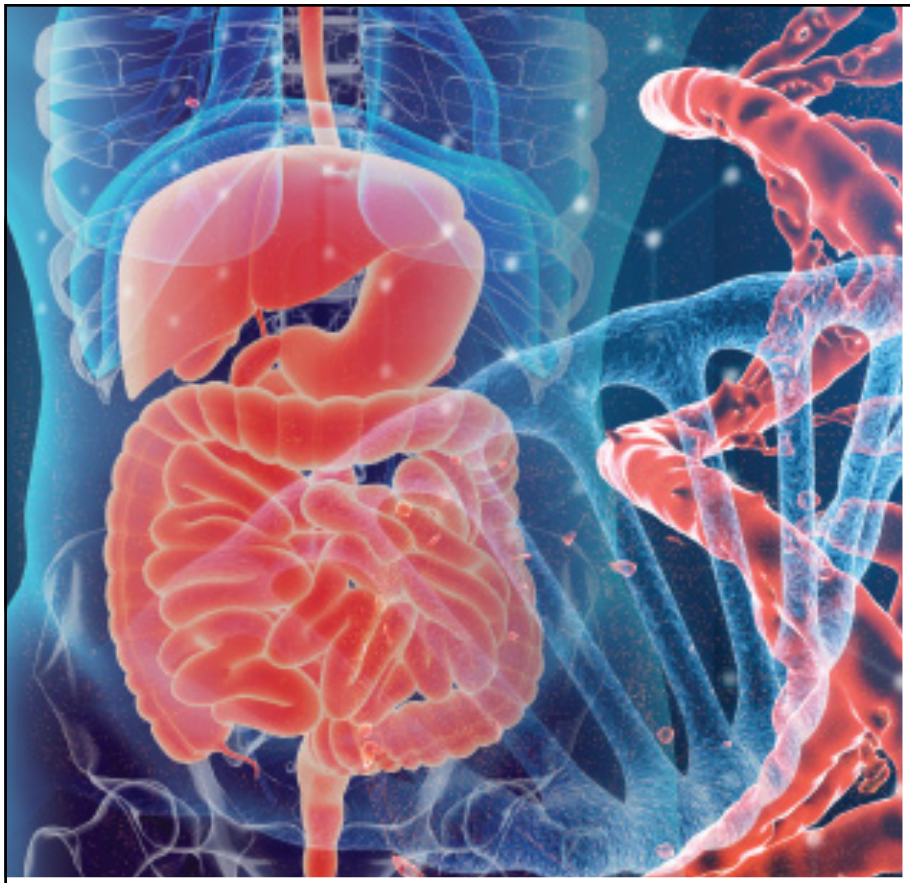
Panes J, et al. Presented at: ECCO 2018. P273.



INDIVIDUALIZING CARE IN IBD

Marla C. Dubinsky, MD

#IBDbiologics



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LEARNING OBJECTIVE 3

Implement personalized management plans for patients with IBD that factor in clinical recommendations, treatment goals, continuous monitoring, and medication adjustments as needed.

SELECTING THE RIGHT PATIENTS FOR THE RIGHT TREATMENT STRATEGY

- A fundamental problem in IBD management is that we wait for patients to become “sick enough” to use our best drugs
- We focus too much on disease activity (symptoms) as opposed to overall disease severity (history and damage)

DISTINGUISH DISEASE *ACTIVITY* VS DISEASE *SEVERITY*

Activity

How is your patient TODAY?

Severity

What has your patient's disease course been over their history since diagnosis?

CAN ONE DETERMINE DISEASE SEVERITY TO PERSONALIZE TREATMENT STRATEGY?

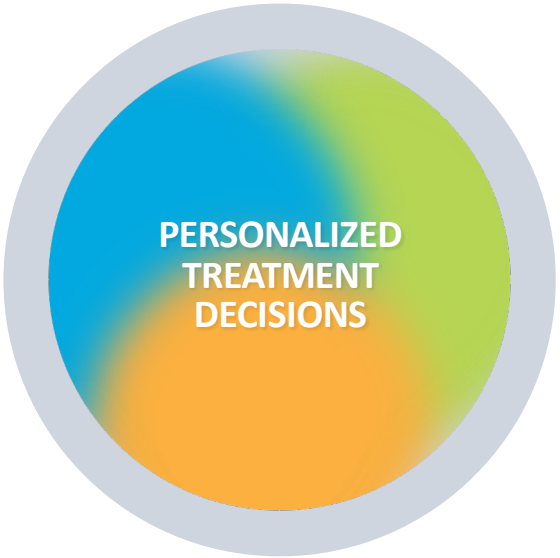
Assessing disease severity at an early stage is essential for the development of an appropriate management plan

Step-up
Avoid intensive therapy, immunosuppression, adverse events

Top-down
Assure early intensive therapy to avoid complications

CHOOSING THE RIGHT CROHN'S DISEASE TREATMENT STRATEGY

- Not every patient needs "top down" or "early intensive therapy"
- We need to determine who is at a high versus a low risk of disease complications
- We want to personalize a treatment plan
- And we need to be able to communicate this clearly to patients and providers



WHICH PROGNOSTIC RISK FACTORS TO USE?

Clinical (age, extent, behavior, symptoms)

Endoscopic (mucosal healing)

Imaging (bowel wall damage/strictures)

Genetic (>200: disease susceptibility and location but not prognosis)

Serological and laboratory markers (CRP, antimicrobial antibodies (ASCA, ANCA, CBir1)

Fecal (microbiome and calprotectin)

Gene expression and proteomics (ECM)

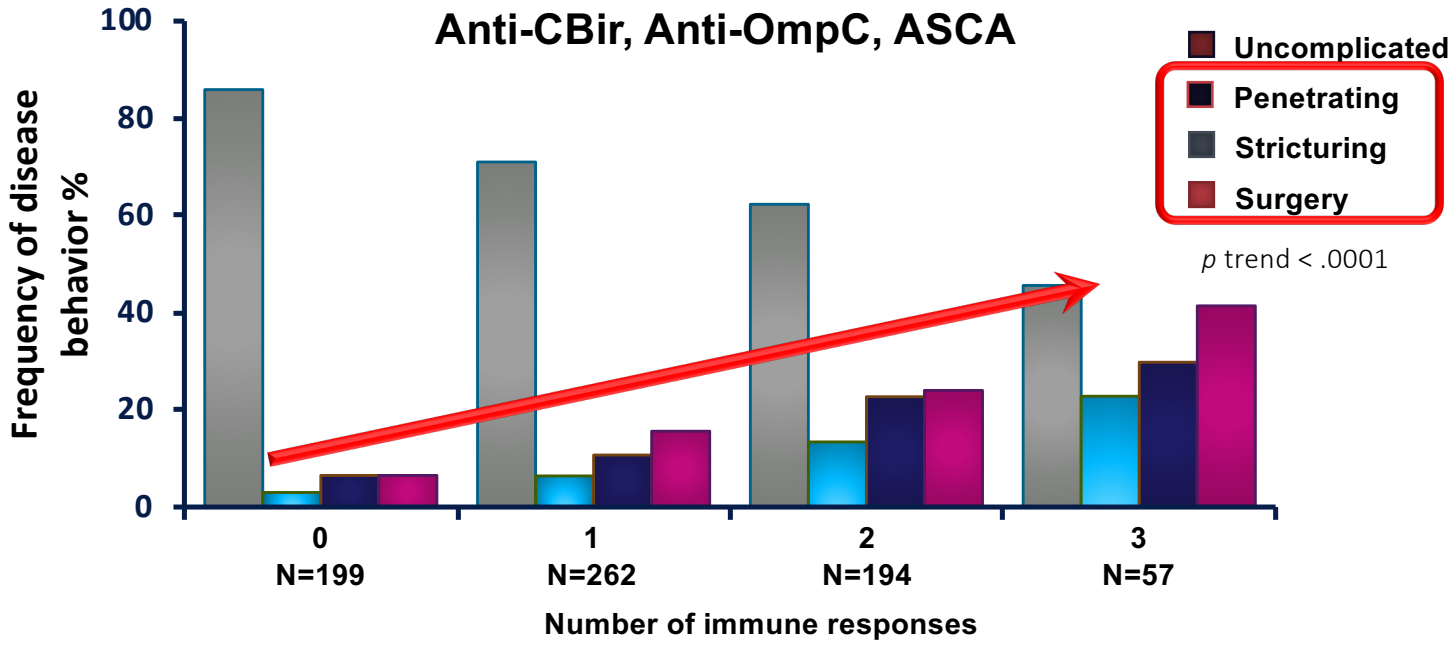
ANCA = anti-neutrophil cytoplasmic antibodies; ASCA = anti-*Saccharomyces cerevisiae* antibodies; OmpC = outer membrane protein C precursor.

INFORMING CLINICAL PRACTICE: KEY PREDICTORS OF POOR OUTCOME

Crohn's disease Patients at high risk of complications	Ulcerative colitis Patients at increased risk of colectomy or future hospitalisation
Young age at presentation	Young age at presentation
Extensive anatomical involvement	Extensive colitis
Deep ulcerations	Frequent flares needing steroids or hospitalisation
Ileal/ileocolonic involvement	*Smoking status, concurrent primary sclerosing cholangitis and concurrent infections may impact the disease course*
Perianal and/or severe rectal disease	
Penetrating/stenosing behavior	

Torres J, et al. *J Crohns Colitis.* 2016;10:1385-1394.

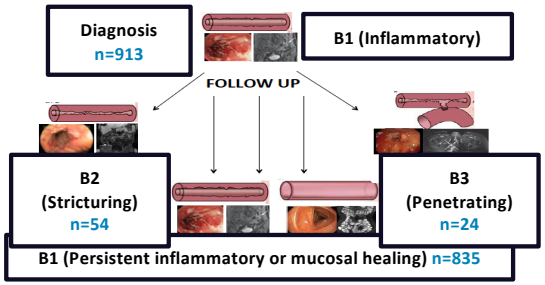
INCREASE IN SEROLOGIC IMMUNE MARKERS ASSOCIATED WITH A MORE AGGRESSIVE CD COURSE IN CHILDREN



- Longitudinal pediatric CD cohort of 796 patients
- Inflammatory behavior only at baseline
- Median follow up of 32 months

Dubinsky M, et al. *Clin Gastroenterol Hepatol*. 2008;6:1105-1111.

PREDICTION OF COMPLICATED DISEASE COURSE FOR CHILDREN NEWLY DIAGNOSED WITH CROHN'S DISEASE: THE RISK STUDY



	Stricturing behavior (B2)		Penetrating behavior (B3)	
	HR (95% CI)	*p* value	HR (95% CI)	*p* value
Age at diagnosis	**1.13** (0.97–1.31)	**0.11**	**1.37** (1.03–1.81)	**0.0278**
African American race	**1.25** (0.43–3.63)	**0.68**	**3.02** (0.97–9.39)	**0.0555**
Isolated ileal location (L1)	**1.66** (0.65–4.26)	**0.29**	**1.26** (0.36–4.43)	**0.72**
ASCA IgA positive	**2.87** (1.21–6.82)	**0.0165**	**2.09** (0.71–6.12)	**0.18**
CBir1 positive	**1.52** (0.63–3.70)	**0.35**	**4.82** (1.53–15.2)	**0.0072**
Early anti-TNFα	**1.13** (0.51–2.51)	**0.76**	**0.30** (0.10–0.89)	**0.0296**

	Stricturing behavior (B2)		Penetrating behavior (B3)	
	HR (95% CI)	*p* value	HR (95% CI)	*p* value
Age at diagnosis	**1.07** (0.91–1.27)	**0.42**	**1.45** (0.98–2.14)	**0.0606**
African American race	**0.30** (0.04–2.47)	**0.27**	**2.31** (0.4–13.27)	**0.35**
Isolated ileal location (L1)	**1.09** (0.39–2.99)	**0.87**	**1.36** (0.37–4.93)	**0.64**
ASCA IgA positive	**1.48** (0.58–3.75)	**0.41**	**2.92** (0.81–10.48)	**0.10**
CBir1 positive	**2.14** (0.84–5.44)	**0.11**	**7.99** (1.89–33.77)	**0.0047**
Extracellular matrix gene signature	**1.70** (1.12–2.57)	**0.0120**	**1.21** (0.53–2.73)	**0.65**

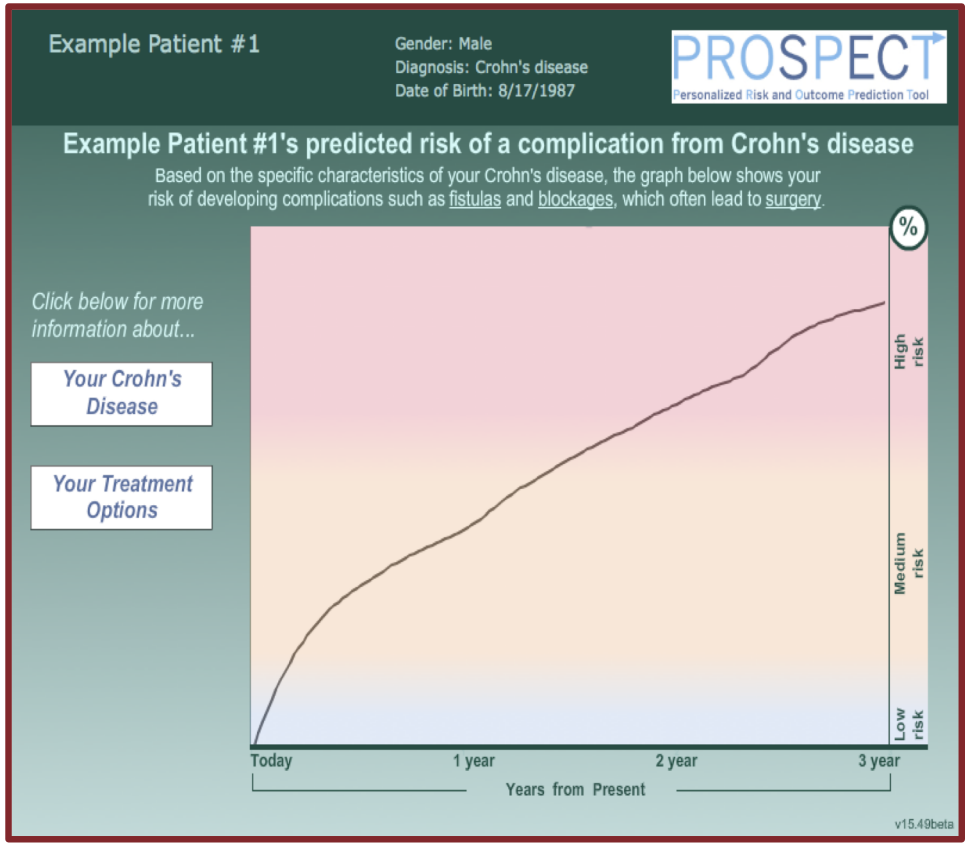
Predictive model for complicated disease:

- AUC 0.66
- PPV 0.22
- NPV 0.94
- Sens 0.69
- Spec 0.66

AUC = area under the curve; NPV = negative predictive value; PPV = positive predictive value. Kugathasan S, et al. *Lancet.* 2017;389:1710-1718.

CREATING THE PREDICTION TOOL: A PICTURE IS WORTH A THOUSAND WORDS

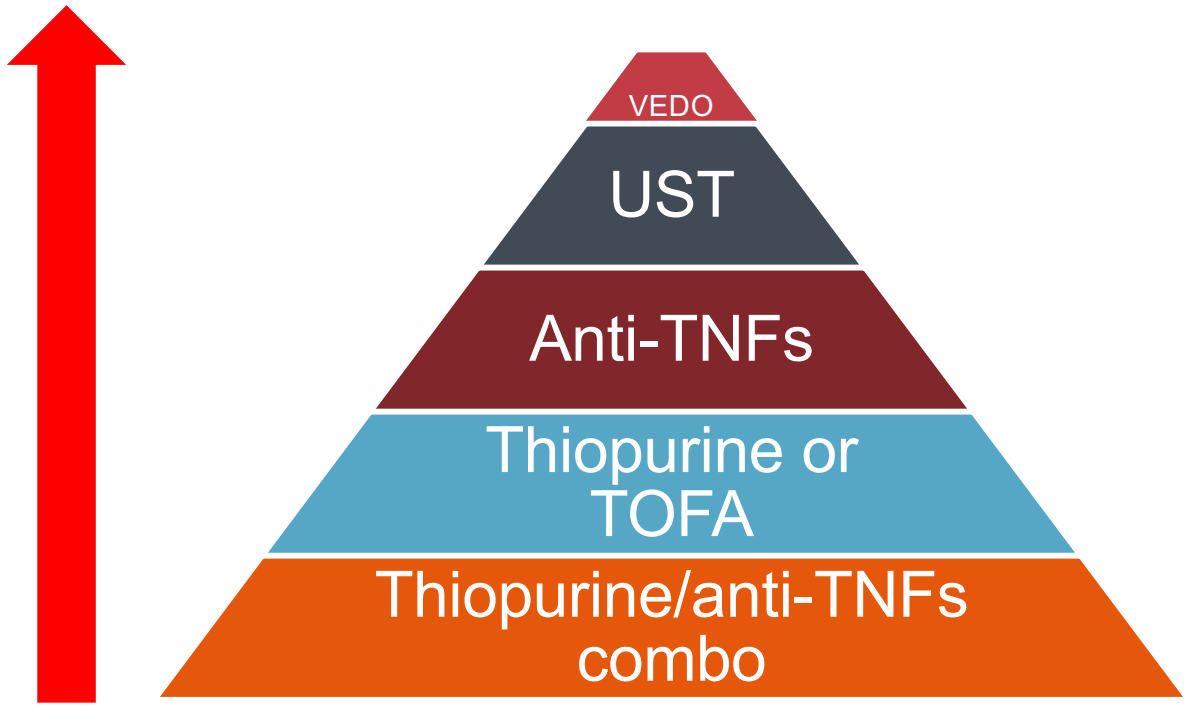
- System dynamics analysis (SDA) is a methodology that addresses the inherent dynamic complexity of interactions between variables
- Provides real-time individualized predictions of outcomes
- Using the data from the model and SDA, a tool (PROSPECT) was created to predict an individualized risk of complications of Crohn's disease



Siegel CA, et al. *Aliment Pharmacol Ther*. 2016;43:262-271.

SAFETY PYRAMID OF CURRENT IBD TREATMENTS

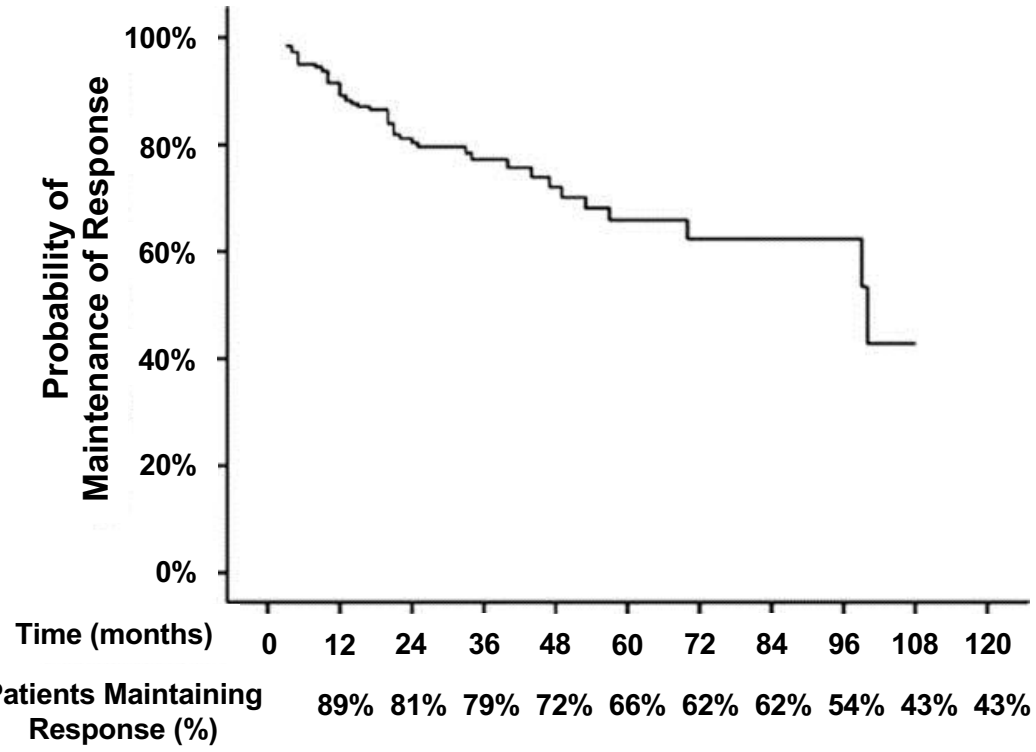
Safest



Note: Treatment must be individualized, accounting for benefits and risks. Active IBD is an "Adverse Event" if not responding to that medication.

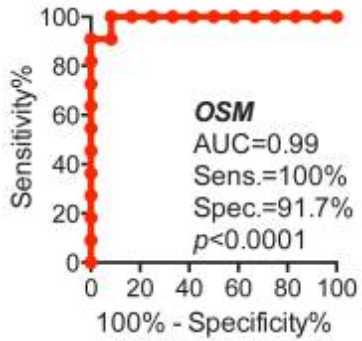
LOSS OF RESPONSE OVER TIME TO BIOLOGICS

- Cohort of 309 CD patients who responded to induction with IFX
- Annual risk of loss of response to IFX was 12% per patient-year



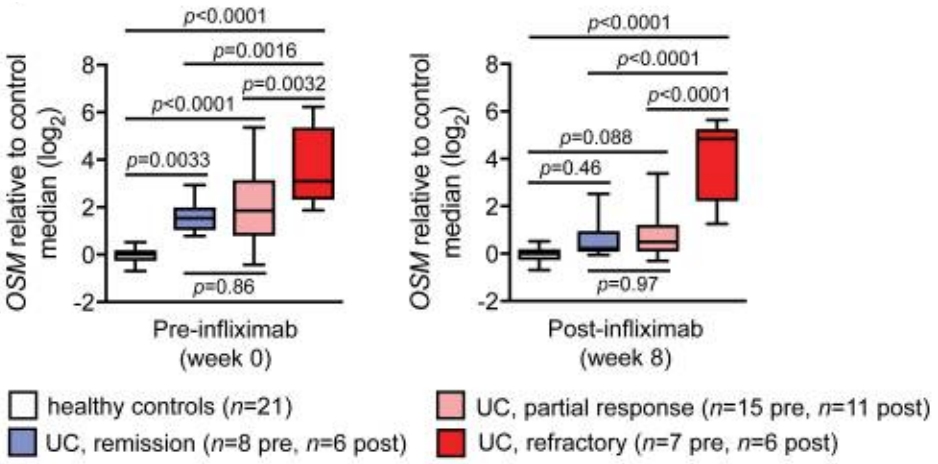
Chaparro M, et al. *J Clin Gastroenterol.* 2011;45:113-118.

ONCOSTATIN M (OSM) EXPRESSION PREDICTS RESPONSE TO ANTI-TNF IN PATIENTS WITH UC



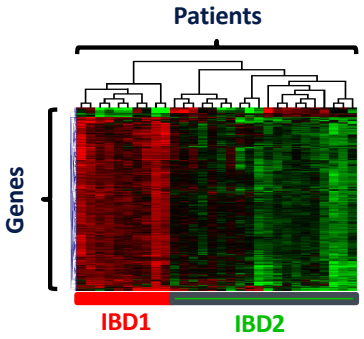
ROC curves for mucosal healing

- OSM is cytokine in IL-6 family increased in patients with IBD
- OSM and OSM receptor (OSMR) expression increased in colon biopsies of patients who did not respond to anti-TNF
  - Used 5 datasets, overall n = 227
  - Combination of endoscopic and clinical definitions

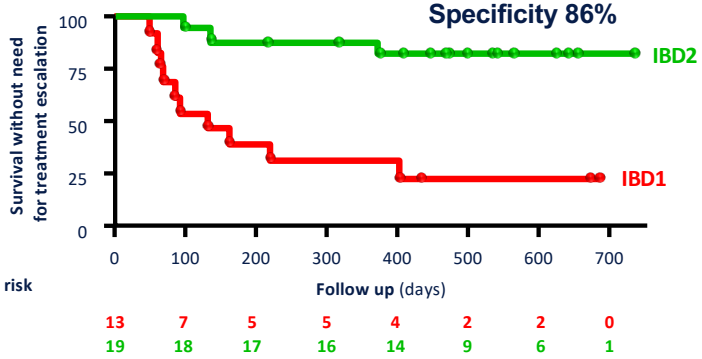


West N, et al. *Nat Med.* 2017;23:579-589.

CD8 T CELL TRANSCRIPTOME

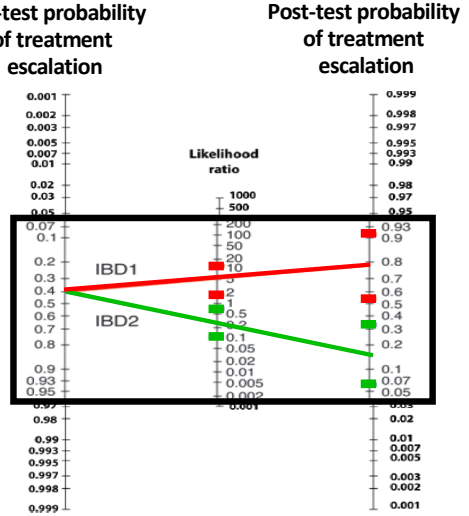


Negative predictive value 76%
Positive predictive value 80%
Sensitivity 67%
Specificity 86%



Number at risk

IBD1	13	7	5	5	4	2	2	0
IBD2	19	18	17	16	14	9	6	1

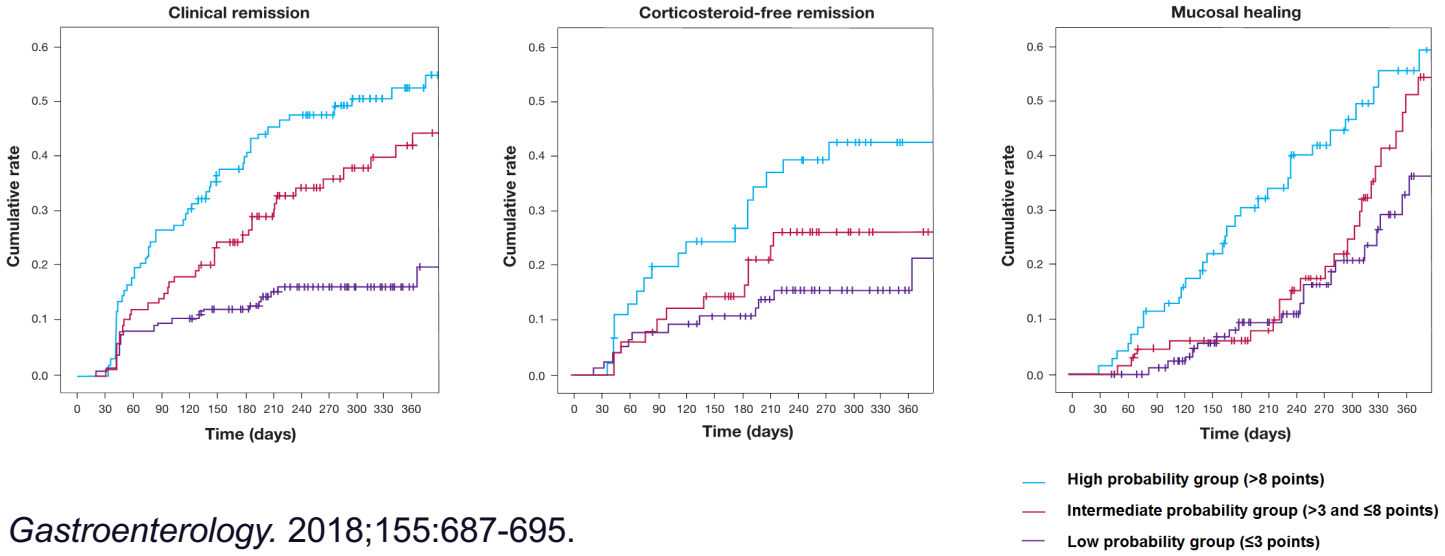


Lee JC, et al. *J Clin Invest.* 2011;121:4170-4179.

CLINICAL FACTORS TO PREDICT VEDOLIZUMAB RESPONSE

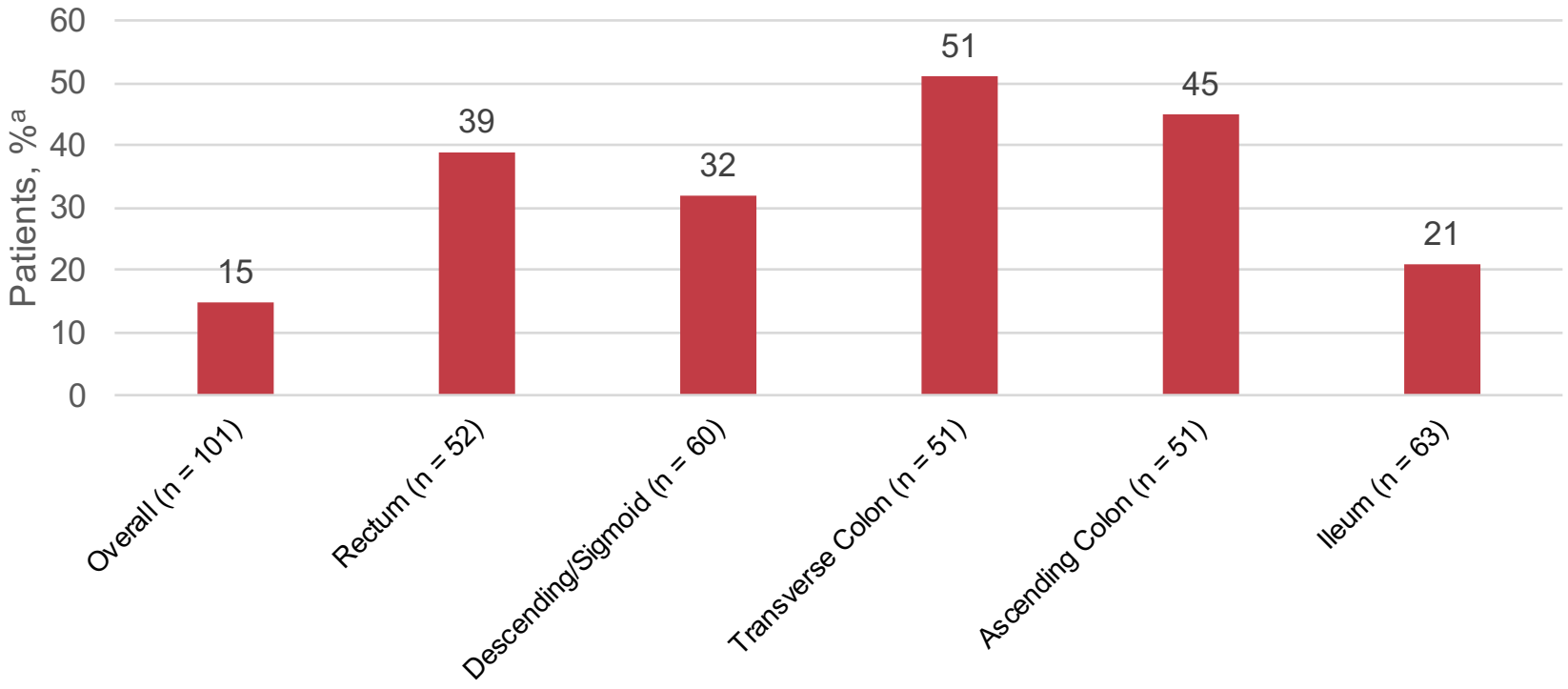
Predictor
No prior CD-related hospitalization within preceding 12 months
No prior TNFα-antagonist exposure
No prior fistulizing disease
Baseline CRP concentration

- Predictors are each assigned a point score
- Patients in the high probability group have a higher rate of remission and mucosal healing



Dulai P, et al. *Gastroenterology.* 2018;155:687-695.

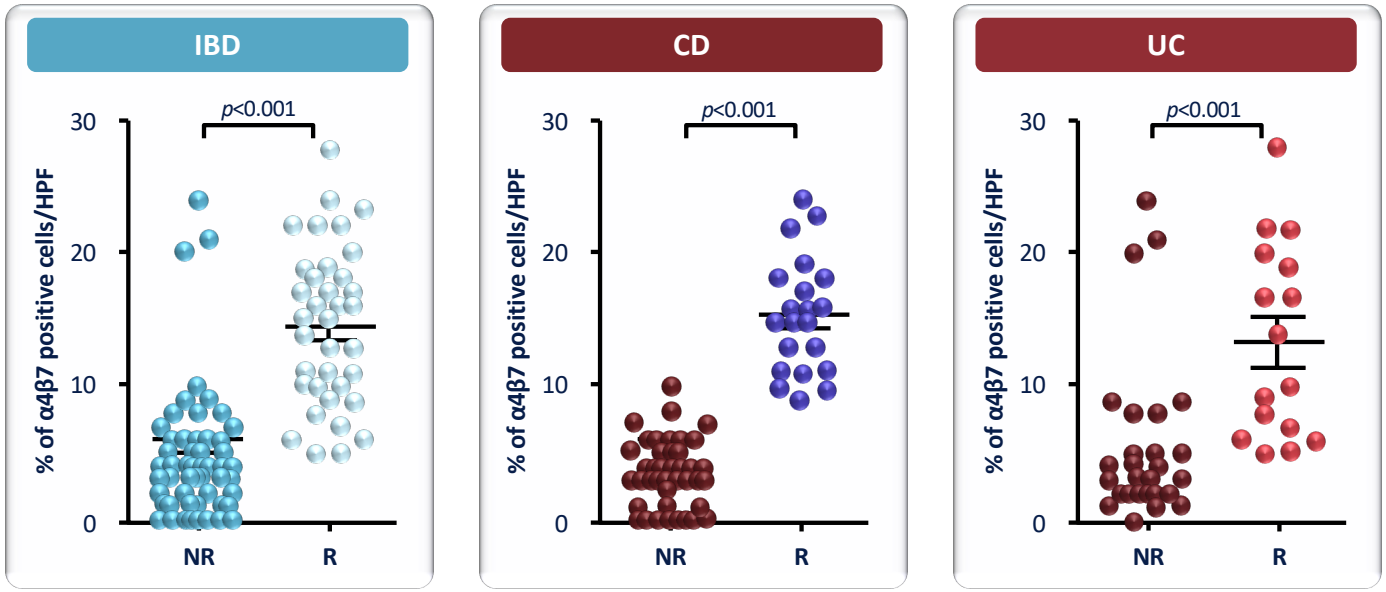
VERSIFY RESULTS: COMPLETE MUCOSAL HEALING BY SEGMENT



[a]Ulceration had to be present at baseline in a given segment for that patient to be included.

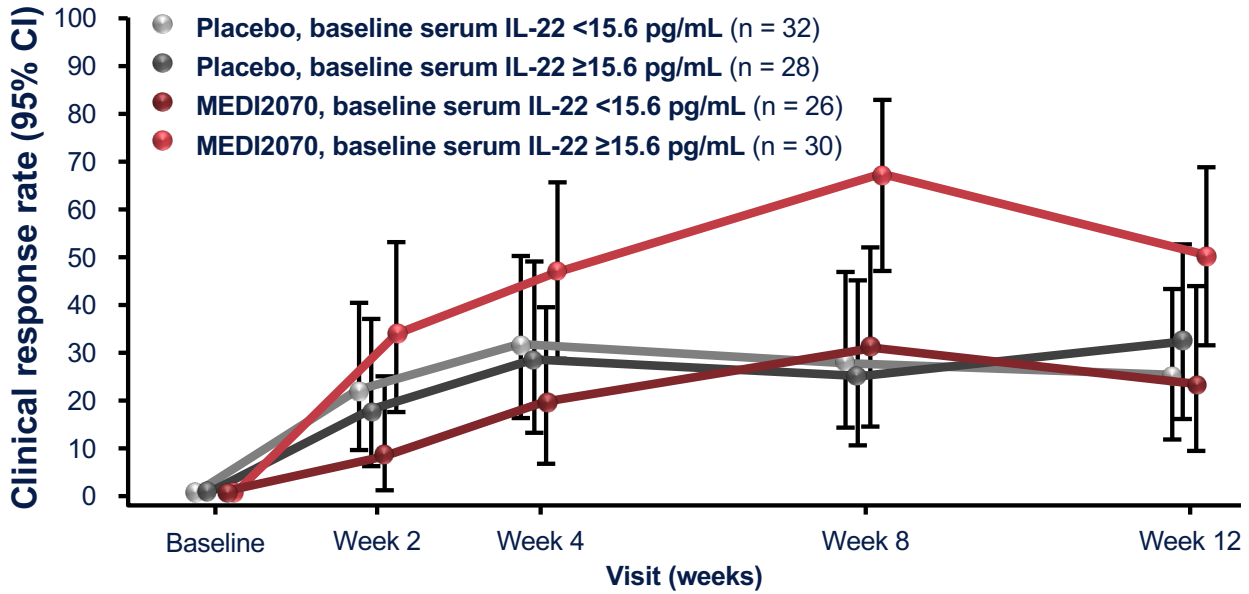
Danese S, et al. Presented at: ECCO 2018. Abstract No. OPO23.

PREDICTIVE BIOMARKERS: A4SS7 EXPRESSIO



HPF = high power field; NR = non-remitters; R = remitters; Rath T, et al. *Front Immunol.* 2018;9:1700.

PREDICTIVE BIOMARKERS: SERUM IL-22



Sands B, et al. *Gastroenterology* 2017;153:77-86.

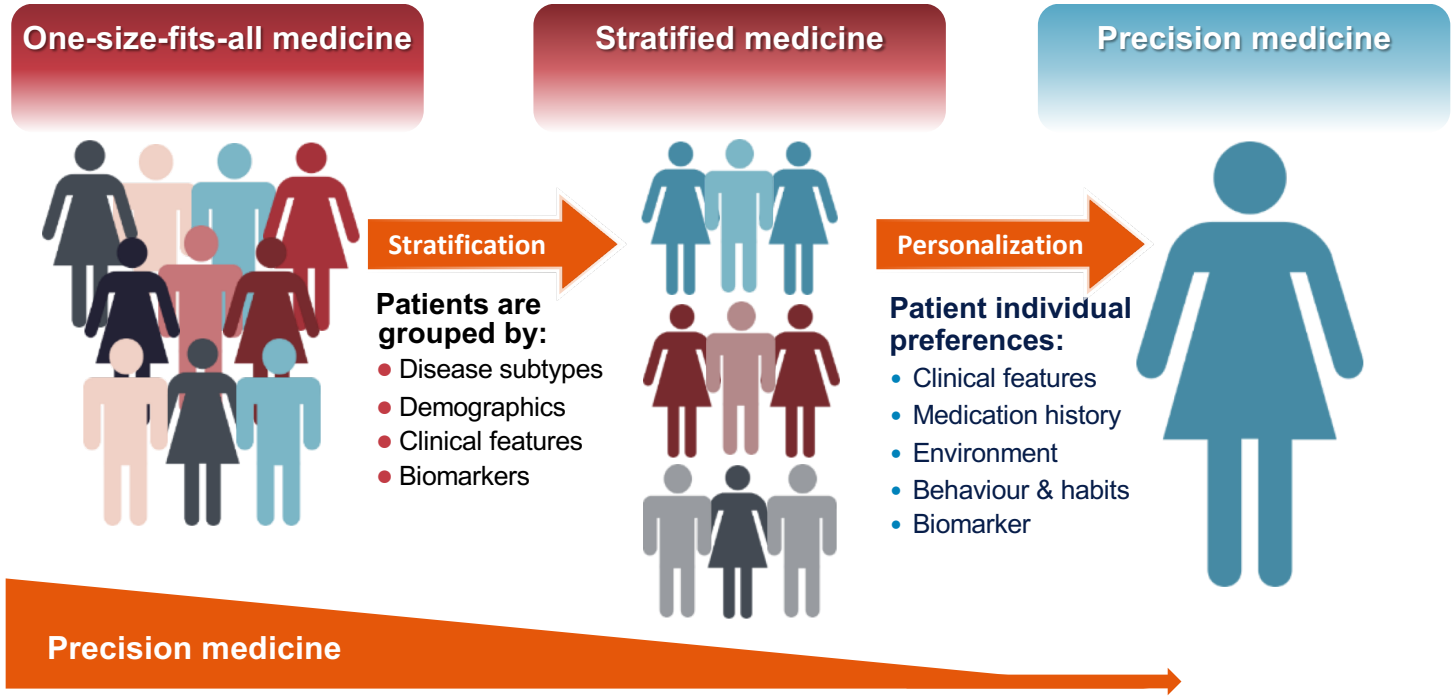
NO ASSOCIATION OF IL23R IN RHEUMATOID ARTHRITIS

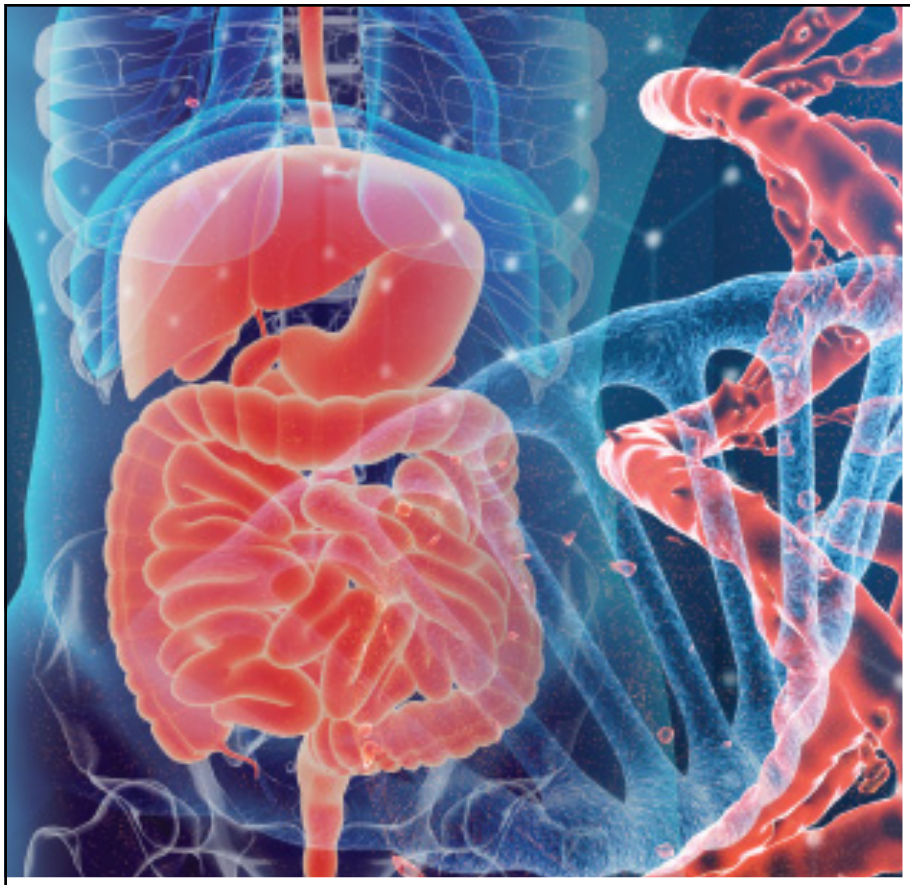
Table 1 Major genetic association signals across autoimmune diseases

	MHC class	IL23R	PTPN22	CTLA4[a]
Type 1 diabetes	Class II		Arg620Trp	Non-coding
Juvenile idiopathic arthritis	Class II		Arg620Trp	
Autoimmune thyroid disease	Class II		Arg620Trp	Non-coding
Rheumatoid arthritis	Class II		Arg620Trp	Non-coding
Multiple sclerosis	Class II			
Celiac disease	Class II			Non-coding
Systemic lupus erythematosis	Class II		Arg620Trp	
Psoriatic arthritis	Class I	Distinct alleles		
Psoriasis	Class I	Arg381Gln		
Ankylosing spondylitis	Class I	Arg381Gln		
Inflammatory bowel disease	Class II	Arg381Gln	Arg620Trp	

Cho JH, Feldman M. *Nat Med.* 2015;21:730-738.

THE FUTURE OF PRECISION IBD





CASES: NOW WHAT WOULD YOU DO?

David T. Rubin, MD, FACG, AGAF, FACP, FASGE

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CASE 1

- 18 yo woman newly diagnosed with Crohn's disease (CD) of the ileum and proximal colon, diarrhea
- Iron deficiency anemia
- Small perianal skin tags

CASE 2

- 26 yo man with 3 years of left-sided UC
- Treated intermittently with 5-ASA (non-compliant) and steroids
- Presenting now with flare
- Negative for *C. diff*
- Extension of disease to pancolitis
- Steroid-dependent

CASE 3

- 55 yo man
- Obese
- Psoriasis
- Years of “IBS”
- Now presents with bowel obstruction and found to have ileal stricture

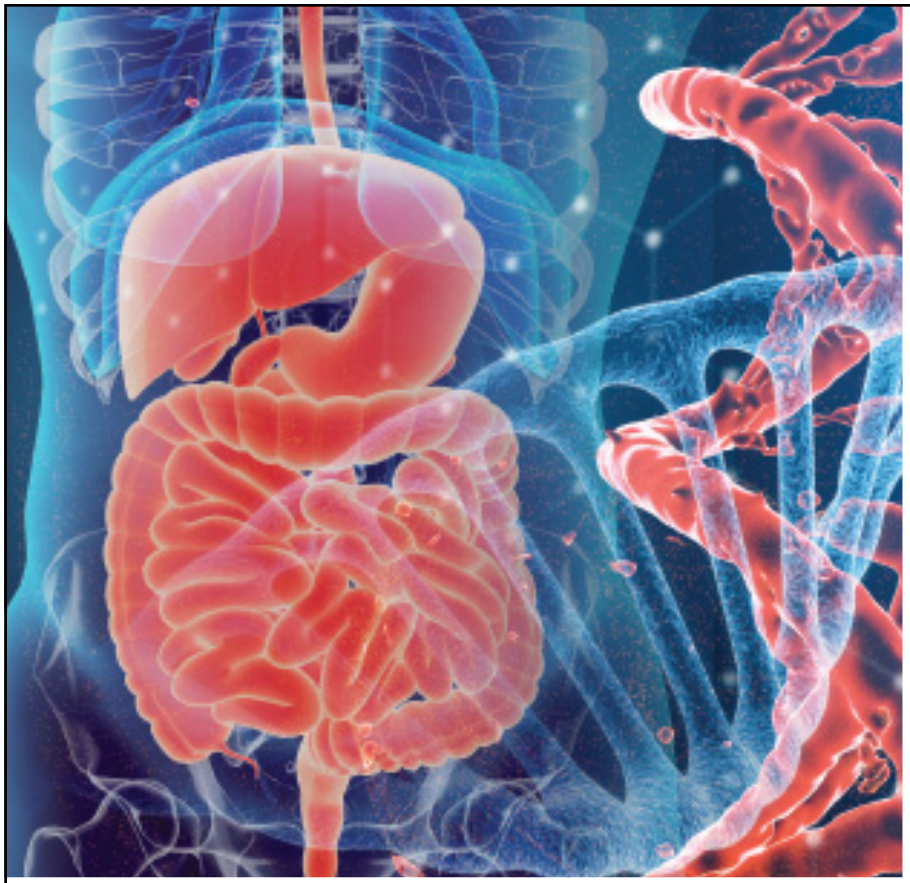
CASE 4

- 70 yo woman
- 40 years of UC maintained with azathioprine and 5-ASA, stable remission for years
- Colonoscopy shows endoscopic and histologic quiescence

SMART GOALS

Specific, Measurable, Attainable, Relevant, Timely

- Choose therapies based on prognosis as well as severity
- Use validated objective endpoints of disease control
- Adjust therapies serially until endpoints are achieved (treat-to-target)
- In the future, additional targeted agents will allow for increased opportunity to personalize the treatment of patients with IBD



QUESTIONS & ANSWERS

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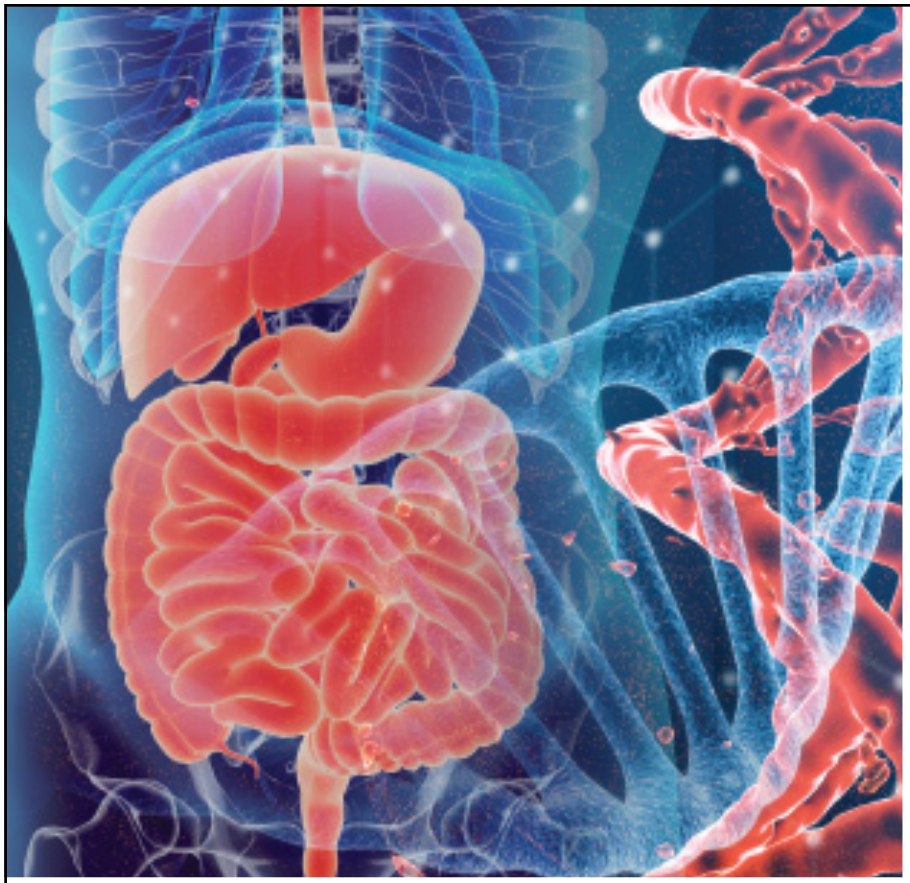

THANK YOU

Don’t forget to complete the evaluation and collect your credit.

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