IBD in 2015: What You Need To Know

Derek Patel, MD
Clinical Professor of Medicine
Division of Gastroenterology
UCSD
Educational Objectives

- What is IBD?
- Ulcerative Colitis vs. Crohn’s Disease
- Diagnosis/Treatment
- New Trends in IBD Management
- The Future of IBD Care
  plus BONUS FAQs!!!
What is Inflammatory Bowel Disease?

- Chronic inflammation of the intestines
  - Ulcerative Colitis (UC)
  - Crohn’s Disease (CD)
- Relapses and remission
- Young age of onset
- Treatment often requires surgery
- Physical, economic, psychological burden

![U.S. Incidence](image)
The Symptoms of IBD

**Ulcerative Colitis**
- Symptoms depend on extent and severity of inflammation
- Bloody diarrhea
- Abdominal cramping
- Tenesmus - fecal urgency
- Extraintestinal manifestations

**Crohn’s Disease**
- Symptoms vary with type and location of disease (stricturing, fistulizing)
- Diarrhea
- Chronic abdominal pain and tenderness
- Weight loss
- Fever
- Perianal disease
- Extraintestinal manifestations
What Causes IBD?
## Risk Factors for IBD

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>UC</th>
<th>CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>M≈F</td>
<td>M≈F</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Cauc</td>
<td>Cauc</td>
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<tr>
<td>Smoking</td>
<td>↓</td>
<td>↑</td>
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<tr>
<td>Appendectomy</td>
<td>↓</td>
<td>?</td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Enteric infection</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Diet</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Q: Does stress cause IBD?

A: Probably not. There is a strong relationship between perceived stress and gastrointestinal symptoms, but there is no evidence that perceived stress can cause intestinal inflammation.
Inflammatory Bowel Disease: Geographic Distribution
Incidence of IBD is Increasing

Trends in Age- and Sex-Adjusted Incidence Rate of Crohn’s Disease (CD) and Ulcerative Colitis (UC):
Olmsted County, Minnesota, 1970-2011

Age and Sex Adjusted Rates (per 100,000)

Years


UC

CD
How Big A Problem is IBD in the USA?

- Affects approximately 1 in 200 Americans
  - 1.6 million patients
  - 70,000 new diagnoses each year
  - 1.9 million physician visits/yr
  - 200,000 hospitalizations/yr
  - Significantly lower quality of life
  - Significantly reduced employment and higher chronic disability rates
  - $15-30 billion impact annually
IBD: The Patient Experience

Top 10 Concerns of IBD Patients

- Uncertain nature of IBD
- Effects of medications
- Energy level
- Having surgery/ostomy
- Being a burden on others
- Loss of bowel control
- Developing cancer
- Ability to achieve full potential
- Producing unpleasant odors
- Feelings about my body

Q: What is the role of diet in IBD? Is there a special diet that will cure me?

A: IBD is not caused by food allergies or a “bad” diet. Most patients with IBD (like all of us) will have food intolerances, but these are different for every individual. Gluten-free, vegan or other restrictive diets are not helpful in treating IBD.
Ulcerative Colitis
vs.
Crohn’s Disease
Ulcerative Colitis vs. Crohn’s Disease: Disease Location
Ulcerative Colitis vs. Crohn’s Disease: Disease Phenotype
## Ulcerative Colitis vs. Crohn’s Disease

<table>
<thead>
<tr>
<th></th>
<th>Ulcerative colitis</th>
<th>Crohn’s disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Localisation</td>
<td>Colon only</td>
<td>Any part of GI tract</td>
</tr>
<tr>
<td></td>
<td>Continuous</td>
<td>Patchy/segmental</td>
</tr>
<tr>
<td>Rectal involvement</td>
<td>Always</td>
<td>50% of cases</td>
</tr>
<tr>
<td>Intestinal wall</td>
<td>Normal thickness</td>
<td>Thickened</td>
</tr>
<tr>
<td>Inflammation</td>
<td>Superficial layers</td>
<td>All layers</td>
</tr>
<tr>
<td>Ulcerations</td>
<td>Superficial</td>
<td>Deep</td>
</tr>
<tr>
<td>Fistulae</td>
<td>No</td>
<td>Common</td>
</tr>
<tr>
<td>Strictures</td>
<td>Suggests cancer</td>
<td>Common</td>
</tr>
<tr>
<td>Perianal disease</td>
<td>Rare</td>
<td>Common</td>
</tr>
</tbody>
</table>
Ulcerative Colitis vs. Crohn’s Disease

Ulcerative Colitis

Crohn’s Disease
Complications of Crohn’s Disease

Stricture

Perianal Disease

Fistula
Extraintestinal Manifestations of IBD

- Aphthous ulcers
- Pyoderma gangrenosum
- Erythema nodosum
- Episcleritis
- Arthritis
FAQ

Q: If I have IBD, what are the chances that my kids will?

A: About 5-10%. We do not do any specific testing on children whose parents have IBD unless they develop suspicious symptoms.
Diagnosis
&
Treatment
Making the Diagnosis

The accurate diagnosis of IBD often requires multidisciplinary input

- **Primary MD**: recognize symptoms, get history, r/o infection, initial laboratory work-up
- **GI**: endoscopic evaluation, specialized testing
- **Pathologist**: histologic evaluation
- **Radiologist**: evaluate difficult-to-reach portions of GI tract; evaluate complications
Treatment Options

- Antibiotics, 5-ASA
- Steroids
- Immunomodulators (6-MP, AZA, MTX)
- Biologics (Infliximab, etc)

More "aggressive"
More healing
More adverse effects

SURGERY
Turning IBD Treatment Upside Down

Combination Therapy

Biologics

Immunomodulators
Steroids

5-ASA
A. Abx

“Step Up”

“Top Down”
Treating IBD: Biologics

- Infliximab (*Remicade*),
- Adalimumab (*Humira*),
- Certolizumab (*Cimzia*),
- Golimumab (*Simponi*),
- Natalizumab (*Tysabri*),
- Vedolizumab (*Entyvio*)

**Mechanism:**
- anti-TNFα monoclonal Ab (infliximab, adalimumab, certolizumab, golimumab)
- Anti-integrin monoclonal Ab (natalizumab, vedolizumab)
20% of UC patients will get a total colectomy

Indications for surgery
- refractory disease
- fulminant disease
- toxic megacolon
- dysplasia/cancer

Surgery results in “cure”

IPAA = ileal pouch anal anastomosis
Surgery in IBD: Crohn’s Disease

- 70% of Crohn’s patients require surgery
- Indications for surgery
  - stricture
  - fistula/abscess
  - dysplasia/cancer
- High rate of recurrence after surgery

stricturoplasty

abscess/fistula treatment
Endoscopy in IBD

- Why perform endoscopy in IBD?
  - Initial diagnosis (IBD vs. other condition)
  - Evaluation of disease activity
    - Healing?
    - Infection?
    - Post-operative recurrence?
  - Specific therapy
    - Stricture dilation (Crohn’s)
    - Polypectomy/EMR
  - Dysplasia/cancer surveillance
Q: Will probiotics cure my IBD?

A: No. Although we believe that intestinal bacteria may play a role in the development of IBD, there is no evidence that taking probiotics is an effective treatment.
New Trends
New Trends in IBD: Drugs

New Targets:

Biosimilars:
New Trends in IBD: Treatment Paradigms

- **Treat to Target (T2T)**
  - Set “target”
    - mucosal healing
  - Frequently assess disease activity
    - endoscopy
    - biomarkers
    - imaging
  - Adjust therapy to reach pre-established target

- **Therapeutic Drug Monitoring**
  - Serum levels of biologic drugs and anti-drug antibodies can be used to individualize dosing and optimize treatment success

- **De-escalation of therapy**
  - May reduce risks and costs
New Trends in IBD: Dysplasia Surveillance

- Patients with UC and Crohn’s colitis have ↑ risk of colon cancer
- Previous screening strategy used random biopsies every 10cm throughout colon
  - Time-consuming
  - Poor yield
- New SCENIC guidelines call for use of chromoendoscopy with targeted biopsy/resection
  - Chromoendoscopy - application of stains/pigments to improve tissue characterization during colonoscopy

# New Trends in IBD: Dysplasia Surveillance

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Technique</th>
<th>Method</th>
<th>Dilution*</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesion detection</td>
<td>Pan chromo-endoscopy</td>
<td>Water jet channel using auxiliary foot pump or biopsy channel using spray catheter</td>
<td>Indigo carmine (0.8%, 5ml ampule): 2 ampules + 250ml water (0.03%)&lt;br&gt;Methylene blue (1%,10ml ampule): 1 ampule + 240ml water (0.04%)</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>Lesion characterization and delineation of borders</td>
<td>Targeted chromo-endoscopy</td>
<td>Syringe spray through biopsy channel</td>
<td>Indigo carmine (0.8%, 5ml ampule): 1 ampule + 25ml water (0.13%)&lt;br&gt;Methylene blue (1%,10ml ampule): 1 ampule + 40ml water (0.2%)</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

*Various dilutions ranging from 0.03-0.2% of indigo carmine and methylene blue have been reported for panchromoendoscopy.*

New Trends in IBD: Quality Care

CMS has developed list of quality measures for care of IBD patients. There are financial incentives/penalties for adherence/nonadherence.

<table>
<thead>
<tr>
<th>Measure 1:</th>
<th>IBD Type, Anatomic Location, Disease Activity, and External Manifestations Assessed (PQRS Measure 269)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure 2:</td>
<td>Corticosteroid-Sparing Therapy Prescribed (PQRS Measure 270)</td>
</tr>
<tr>
<td>Measure 3:</td>
<td>Bone Loss Assessment for Patients Receiving Corticosteroid Therapy (PQRS Measure 271)</td>
</tr>
<tr>
<td>Measure 4:</td>
<td>Testing for latent TB before initiating anti-TNF therapy (PQRS Measure 274)</td>
</tr>
<tr>
<td>Measure 5:</td>
<td>Assessment of hepatitis B virus before initiating anti-TNF therapy (PQRS Measure 275)</td>
</tr>
<tr>
<td>Measure 6:</td>
<td>Influenza Immunization (PQRS Measure 272)</td>
</tr>
<tr>
<td>Measure 7:</td>
<td>Pneumococcal Immunization (PQRS Measure 273)</td>
</tr>
<tr>
<td>Measure 8:</td>
<td>Tobacco Screening and Cessation Counseling (PQRS Measure 226)</td>
</tr>
<tr>
<td>Measure 9:</td>
<td>TPMT Testing Prior to First Ever Dose of 6MP or Azathioprine (Measure not included in PQRS)</td>
</tr>
</tbody>
</table>
FAQ

Q: I don’t know anyone else with this problem. Am I the only person with IBD?

A: No! There are millions of people worldwide with IBD. This includes many famous and successful athletes, actors/actresses, musicians and politicians.
The Future

Not Your Daddy’s IBD!
The Future: Evolving Definitions of IBD

20th Century
“Classic” definitions

21st Century
Definitions based on mechanism

UC  CD

IBD1  IBD2  IBD3  IBD4
The Future: Evolving Work-Up

Traditional Clinical Parameters:
- History
- Physical Exam
- Basic labs
- Imaging
- Endoscopy

Noninvasive Testing:
- Genetic markers
- Serologies
- Cytokine profile
- Enzyme activity
- Metabolite levels
- Microbiome analysis
The Future of IBD

Traditional clinical parameters + Genetic, serologic, biochemical, bacterial profile

Specific IBD subtype

Specific disease prognosis

Target-specific treatment

PERSONALIZED MEDICINE
FAQ

Q: When is this lecture going to be over!?!?!

A: NOW.
QUESTIONS?