

# Inflammatory Bowel Disease



**DR PIYUSH TAILOR  
ASSOCIATE PROFESSOR  
GOVERNMENT MEDICAL COLLEGE  
SURAT**

# Inflammatory Bowel Disease



- **Two major types of IBD**
- **Crohn's disease**
  - Incidence - 5 per 100,000 persons
  - Prevalence - 90 per 100,000 persons
- **Ulcerative colitis**
  - Incidence - 10 per 100,000 persons
  - Prevalence - 200 per 100,000 persons

*Dr Piyush Tailor*

# Inflammatory Bowel Disease



- Etiology –
  - not clearly
  - combination of genetic predisposition and environmental exposures.
- **Crohn's Disease** –
  - affects **mouth to anus** and has **transmural** involvement
- **Ulcerative colitis** –
  - strictly affects the **colon** and has **mucosal** involvement

Dr. Piyush Tailor

# Crohn's Disease



- **Symptoms**
  - Right lower quadrant pain and diarrhea
  - usually intermittent in nature
  - Low fever
  - weight loss
  - High fever and pain may be indicative of a complication, e.g., perirectal abscess.
- **Signs**
  - Palpable mass in RLQ
  - Rectal exam may reveal a perirectal mass
  - Abdominal distention

# Crohn's Disease



- **Lab findings - generally nonspecific**
  - **ESR usually elevated**
  - **Anemia –**
    - ✦ low iron from anemia of chronic disease
    - ✦ low B12 secondary to ileal involvement or resection
  - **Leukocytosis**
  - **Thrombocytosis**
  - **Hypoalbuminemia**

*Dr Piyush Tailor*

# Laboratory Findings



	Anti Nuclear Antibody (ANA)	AntiGlycan Antibodies
Crohn's Disease	Positive in 15%	Positive in 75%
Ulcerative Colitis	Positive in 85%	Positive in 5%

# Barium meal Study in Crohn's Disease



# Small Bowel Obstruction



Dr

lor



# Crohn's Disease



- Imaging Studies
  - **Barium meal study**
  - **Colonoscopy**
    - ✦ Stricture, Fistula
    - ✦ Distinguish from ulcerative colitis
  - **Tablet Enteroscopy**
  - **Abdomen CT- Scan**
    - ✦ Evaluation of perirectal abscess.

Dr. Piyush Tailor

# Crohn's Disease



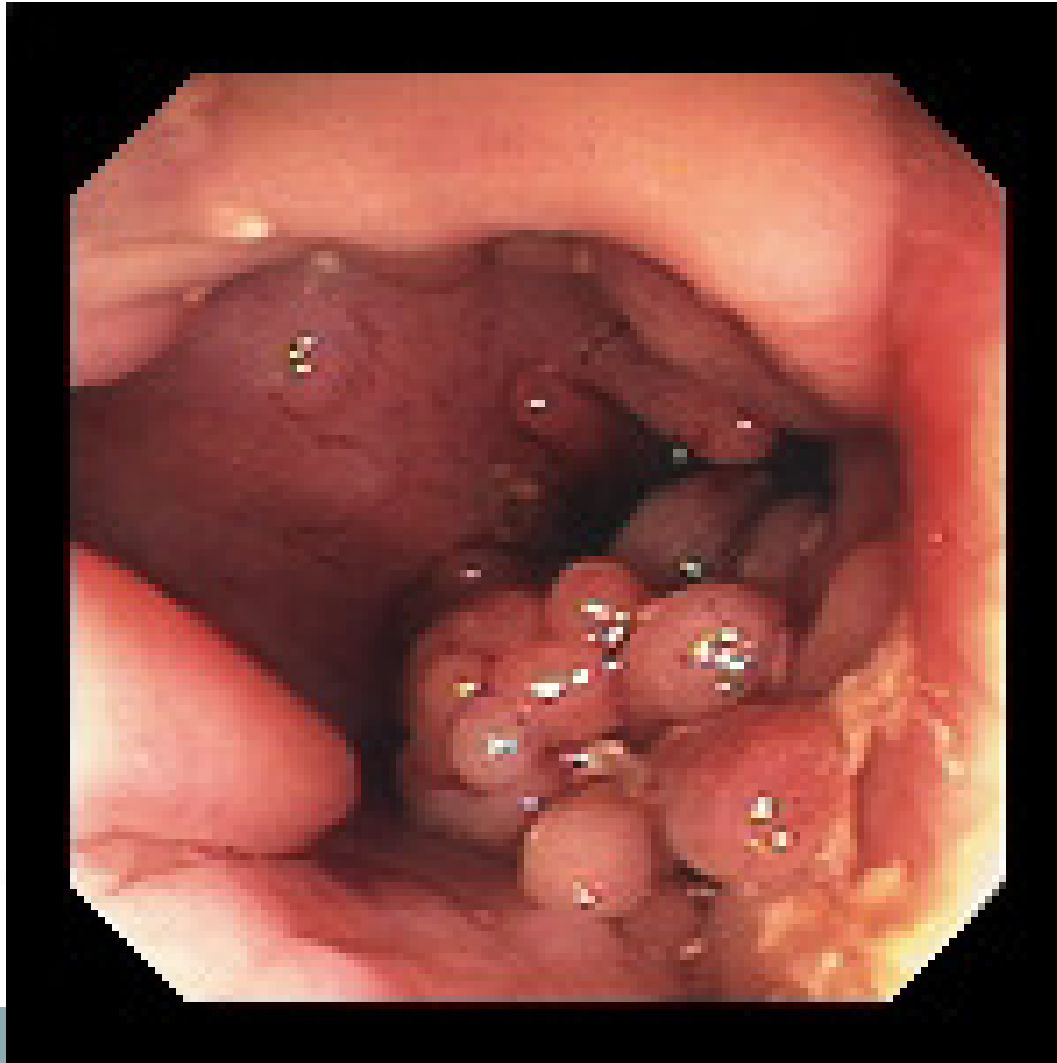
- **Classic findings**
  - **Skip lesions** –
    - ✦ Crohn's does not affect the intestinal mucosa in a continuous fashion
  - **Cobblestoning**
    - ✦ owing to mucosal fissures
  - **Luminal narrowing/strictures**
    - ✦ - string sign
  - **Fistulas**
  - **Aphthous ulcers**

Dr. Piyush Tailor

# Angular Cheilitis

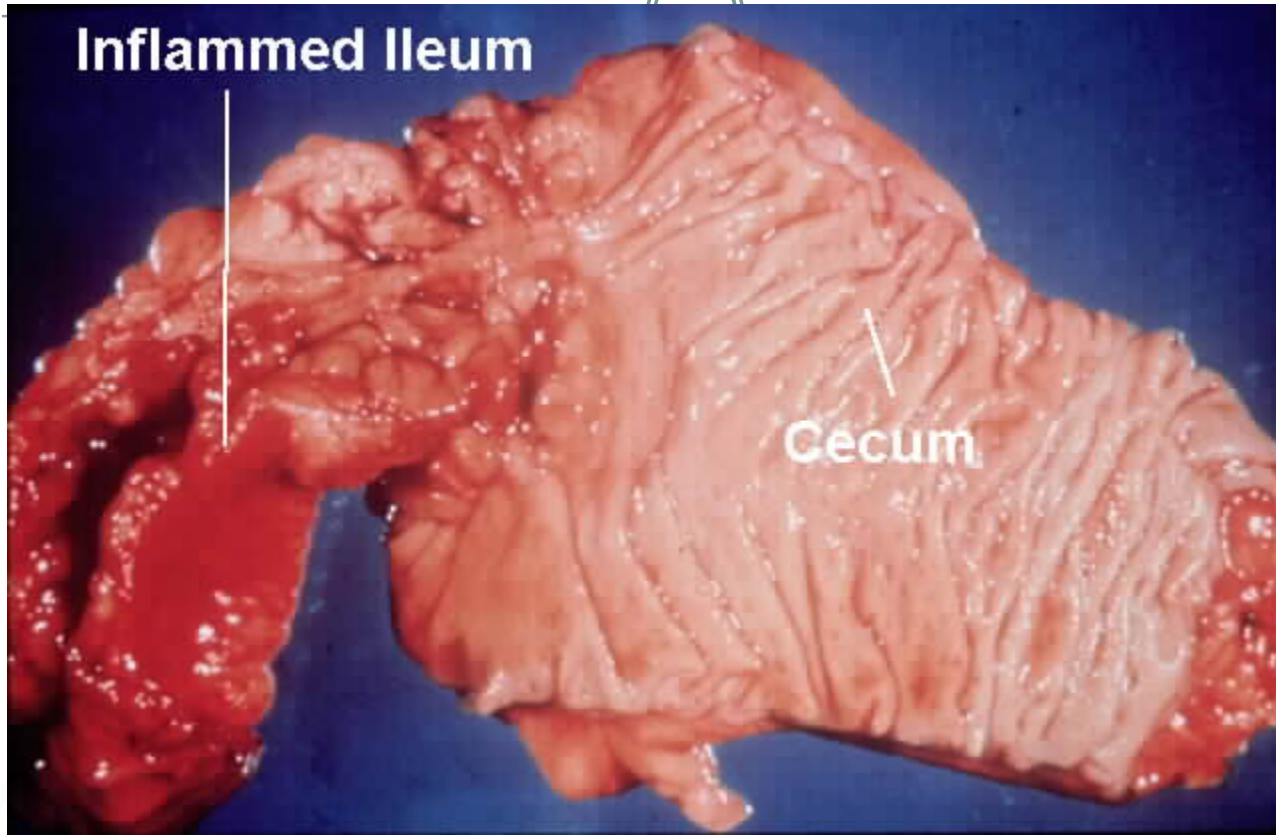


# Crohn's Disease



Dr

ilor



Dr. Jayashil Talwar

# D/D of Crohn's Disease



- Differential diagnosis of ileocecal small bowel disease:
- Acute appendicitis with RLQ pain
- Ectopic pregnancy
- Tubo-ovarian abscess
- Cecal diverticulitis
- Lymphoma
- cecal carcinoma

Dr. Eijush Tailor

# Crohn's Disease



- **Differential diagnosis:**
- **Colonic disease - infectious**
  - Bacterial colitis - Salmonella, Shigella, Campylobacter
  - Ameba (Amoeba if you're British 😊)
  - Cytomegalovirus
- **Colonic disease - noninfectious**
  - Ulcerative Colitis, radiation, ischemia

Dr Piyush Tailor

# Crohn's Disease



- Complications
  - **Fistula formation** - up to 40% of patients
  - **Stricture/ small bowel obstruction**
  - **Colon Carcinoma**
  - **UTIs and pneumaturia**
  - **Rectovaginal, fistula-in-ano**
  - **Perforation/abscess formation**
  - **Nutritional deficiencies**

Dr Piyush Tailor



# Ulcerative Colitis



*Dr Piyush Tailor*

# Ulcerative Colitis



- **Symptoms**
  - Bloody diarrhea
  - Crampy abdominal pain
  - Tenesmus –
    - ✦ urgent feeling of needing to evacuate to the rectum.
  - Fever, weight loss also possible
  - 15-25% have **extra-intestinal manifestations**
- **Signs**
  - LLQ pain - mild to severe
  - Can be very ill in patients with toxic megacolon:
    - ✦ fever, tachycardia, orthostasis

# Ulcerative Colitis



- **Lab Findings - as in Crohn's, nonspecific**
  - ESR usually elevated
  - Mild anemia
  - Leukocytosis
  - Thrombocytosis (acute phase reactant)

*Dr Piyush Tailor*

# Ulcerative Colitis



- **Imaging Studies**
  - Sigmoidoscopy/endoscopy
  - Contrast radiography/

*Dr Piyush Tailor*

# Lead pipe colon



# Ulcerative Colitis



Dr P

vilor

# Ulcerative Colitis



- **Differential Diagnosis**
  - Infection:
  - Noninfectious: Crohn's disease, ischemic colitis, radiation colitis
  - Immunocompromised host: CMV, HSV

*Dr Piyush Tailor*

# Ulcerative Colitis



- **Complications**

- Toxic Megacolon: 15-50% mortality
- **Perforation**
- **Cancer**: increasing risk of dysplasia with increased time from onset of disease.

*Dr Piyush Tailor*



# Summary

	<u>Ulcerative Colitis</u>	<u>Crohn's</u>
--	---------------------------	----------------

## Clinical findings

○ Perianal Disease	Rare	Common (1/3 pts)
○ Fistulas 40%)	Rare	Common (up to
○ Abscess	Rare	20%
○ Stricture	Rare	Common

## Colonoscopy findings

○ Rectal involvement	Always	Usually spared
○ Pattern	Continuous from rectum	Skip lesions

## Radiologic findings

○ Ileal involvement	Rare, backwash ileitis	75%
---------------------	------------------------	-----

## Histologic findings

○ Depth of inflammation	Mucosa to submucosa	Transmural
○ Granulomas	Uncommon	20% of biopsies

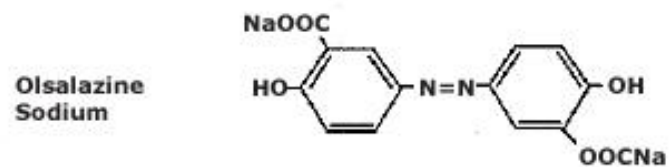
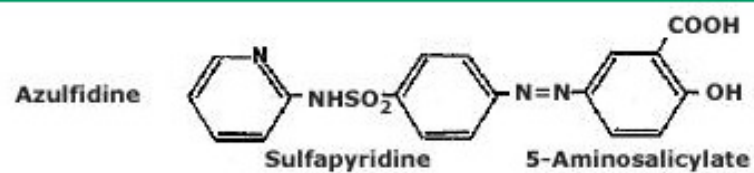
# IBD - Treatment



- **Medications used in treatment**
  - 5-aminosalicylic acid (5-ASA)/mesalamine
  - Different preparations of 5-ASA include:
    - Asacol, Rowasa, Pentasa (tradenames)
  - 5-ASA is a topically active anti-inflammatory agent for inflamed intestinal mucosa. Tummy Motrin, so-to-speak.
  - Chronic 5-ASA requires folate therapy.

*Dr Piyush Tailor*

### Structures of sulfasalazine, mesalamine, and olsalazine



Sulfasalazine is a composite molecule composed of 5-aminosalicylic acid (5-ASA) linked by an azo bond to sulfapyridine. Mesalamine is the 5-ASA moiety alone, while olsalazine consists of two 5-ASA molecules joined by an azo bond.

## IBD - Rx



- Sulfasalazine/Azulfidine - composed of sulfapyridine and 5-ASA molecules. Bacteria in the terminal ileum cleave the drug into these respective components. Because of where in the intestinal tract the drug becomes active, sulfasalazine is usually used to Rx UC and active ileitis in Crohn's. Sulfapyridine is responsible for the sulfa-related adverse drug reactions of this drug.

## IBD - Rx



- Olsalazine/Dipentum - two 5-ASA molecules bound by a diazo bond. Delivered intact to the terminal ileum and there it is cleaved by bacteria.
- Useful in treating UC.
- Side effect of note - ileal secretory diarrhea secondary to the diazo bond. Occurs in 5-10% of treated patients.

Dr Piyush Tailor

# IBD - Rx



- **Mesalamine**
  - Pentasa: 5-ASA packaged in ethylcellulose granules that are slowly released from the jejunum to the colon.
  - Used to Rx Crohn's disease.
  - 4 gm per day most helpful in Crohn's, but requires taking 16 tablets.
  - 2-3 gm/d for active UC, 1-2 gm/d for maintenance of UC

*Dr Piyush Tailor*

# IBD - Rx



- **Mesalamine**
  - Asacol - enveloped in a pH-sensitive coating which delivers drug to the distal ileum and colon.
  - 2.4 - 4.6 gm/d for UC.
  - Can be used to maintain remission in Crohn's disease in Crohn's of the terminal ileum.

*Dr Piyush Tailor*

# IBD - Rx



- **Mesalamine**
  - Rowasa - enema or suppository form of mesalamine.
  - Useful for distal proctosigmoiditis/UC. Not helpful in treating perirectal Crohn's disease.
  - Little systemic absorption, few side effects.
  - Rowasa works best if given HS and retained overnight.

*Dr Piyush Tailor*




# Oral sulfa drugs for IBD



©2009 UpToDate®

 Print

 Email

## Sulfasalazine and 5-ASA dosages (g/day) for active disease and remission maintenance in ulcerative colitis and Crohn's disease

	Ulcerative colitis		Crohn's colitis		Crohn's ileitis	
	Active	Maint	Active	Maint	Active	Maint
Sulfasalazine	2 - 4	2 - 4	2 - 4	NR	NR	ID*
Asacol	2.4 - 4.8	2.4 - 4.8	2.4 - 4.8	2.4 - 4.8	2.4 - 4.8	2.4 - 4.8
Pentasa	4	3-4	4	3-4	4	3-4
Dipentum	2 - 3	1	2 - 3	1	NR	NR
Rowasa (enema)	4	2-4	4	ID	NR	NR

Maint: maintenance; ID: insufficient data; NR: not recommended.

\* 2 - 4 G used in practice.

## IBD - Rx



- Corticosteroids - extremely useful for treating acute flares and in maintaining remission in moderate to severe disease.
- Start Solu-medrol at 125mg IV q6hr, then switch to po Prednisone at 40-60mg qD.
- Taper over 8-12 weeks if possible.

*Dr Piyush Tailor*

# Corticosteroids

## Side Effects

- Cushingoid appearance
- Osteoporosis
- Hypertension
- Diabetes
- Peptic ulcer
- Psychosis
- Aseptic necrosis of bone/hip
- Neuropathy
- Myopathy



# IBD - Rx



- **Immunosuppressive drugs**
  - Azathioprine and 6-Mercaptopurine
    - ✦ Purine analogs that may inhibit T cell function
  - Infliximab (Remicade ®) and other TNF inhibitors
    - ✦ Tumor Necrosis Factor (TNF)
- **Antibiotics - acute treatment**
  - metronidazole/Flagyl - covers anaerobic bacteria. Especially useful in perirectal disease.

Dr Piyush Tailor

# IBD - Rx



- Education
- Support groups
- Psychologic therapy as indicated
- Don't lose sight of the fact that we are treating patients, not diseases.
- Holding a hand and hugging a shoulder are often more effective than any medicine we can offer.

Dr Piyush Talwar

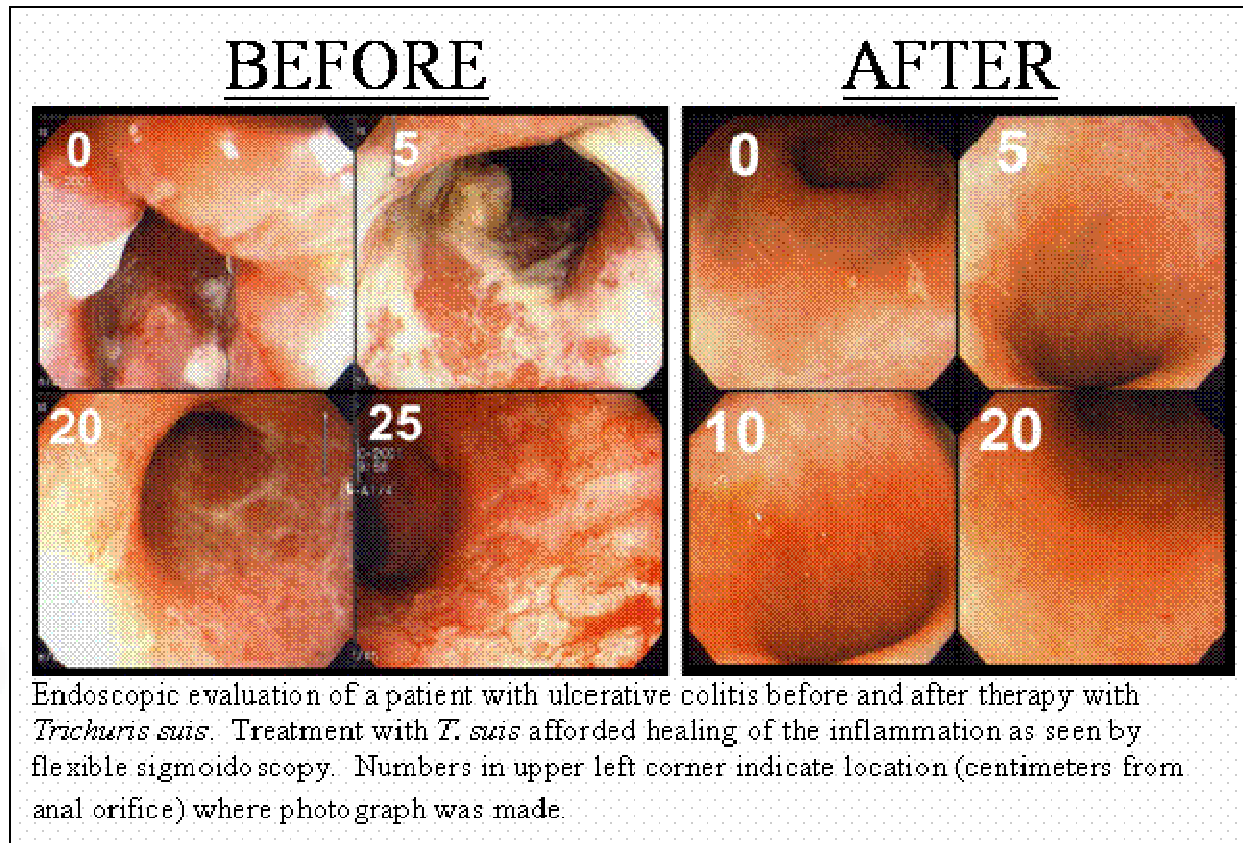
# Probiotics



- No evidence supports the use of probiotics to induce clinical improvement
- Probiotics are not an FDA approved class of drugs
- Many different probiotics will play...few will win...
- Meaning we don't yet know the utility of probiotics

*Dr Piyush Tailor*

# Probiotics?



# -Biotics

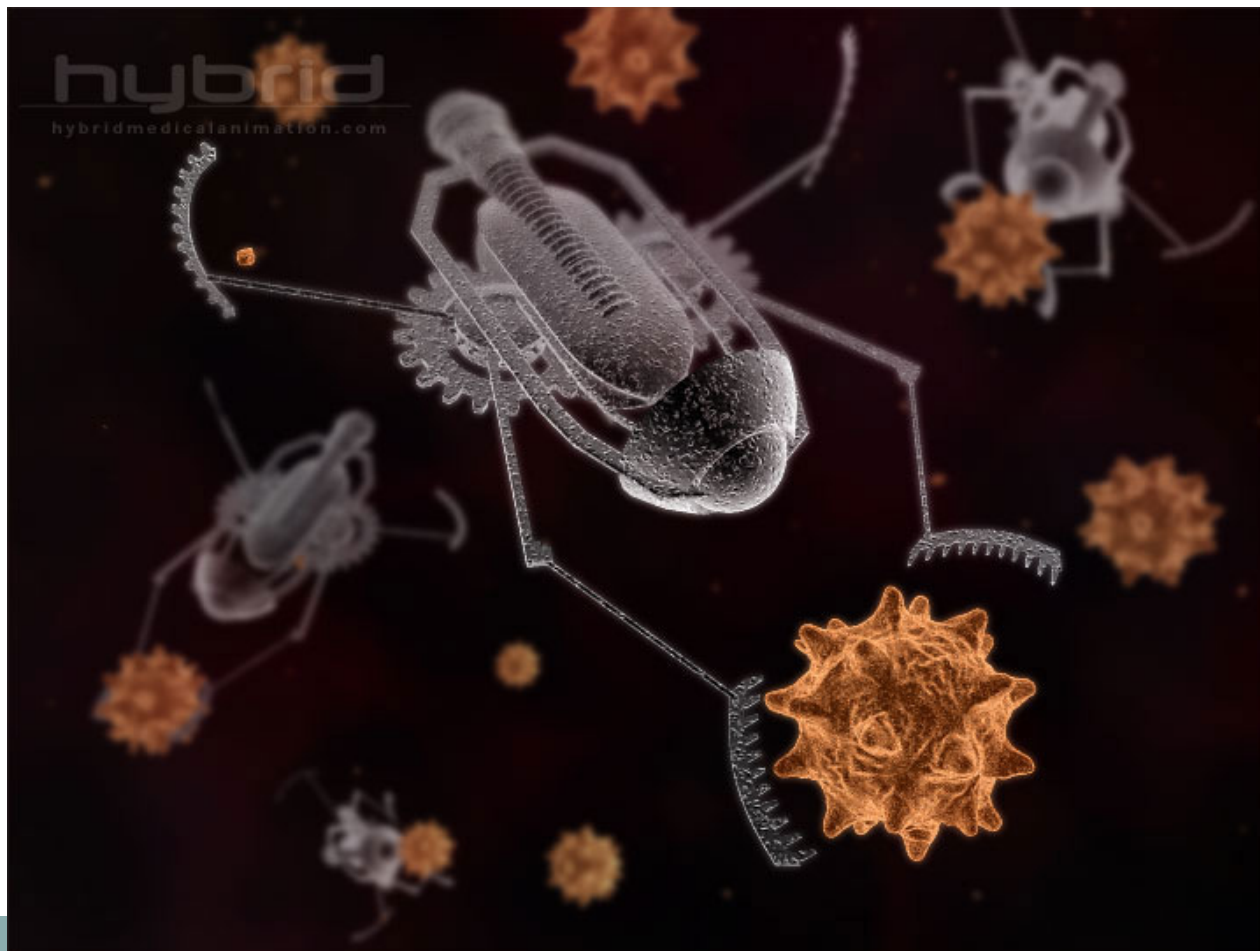


- Antibiotics – drugs to kill bacteria
- Prebiotics – substances which induce the growth of beneficial bacteria
- Probiotics – introduction of bacteria themselves (“Pleased to meet you”)

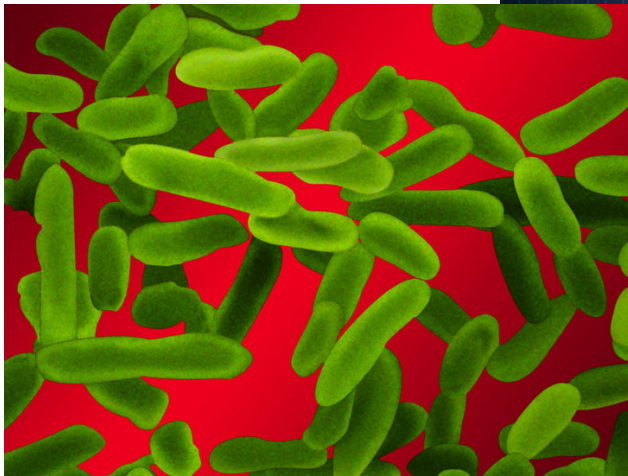
*Dr Piyush Tailor*



# Robotics – introduction of nanobots to destroy all harmful bacteria



# Transformobiotics – Optimus Prime meets *Pseudomonas* Maximus



# Extra-intestinal Manifestations of IBD



- Reactive arthropathy - present with active disease
- Episcleritis - seen more commonly in Crohn's disease
- Erythema Nodosum - Crohn's > UC
- Pyoderma Gangrenosum - UC > Crohn's

*Dr Piyush Tailor*

# Extra-intestinal Manifestations of IBD



- Sacroiliitis - 10% patients with IBD. Association with HLA-B27
- Scleritis and uveitis
- Primary sclerosing cholangitis - usually with UC

*Dr Piyush Tailor*