Inflammatory Bowel Disease
Definition

• **Idiopathic** inflammatory bowel disease (IBD) comprises various conditions

• Chronic or relapsing immune activation and inflammation within the gastrointestinal tract
• Crohn's disease
• Ulcerative colitis (UC)
• Microscopic colitis
• Primarily collagenous colitis
• Lymphocytic colitis
Identifiable etiologies

- Other chronic inflammatory conditions of the intestine
- Share some features of presentation and pathogenesis with idiopathic IBD
- Have identifiable etiologies
  - Diversion colitis
  - Bypass enteropathy
  - Radiation colitis
  - Drug-induced colitides
Crohn’s disease
EPIDEMIOLOGY

• Higher prevalence in west
• In Asian countries, the incidence rate has remained low
• Crohn's disease is thought to be extremely rare in much of South America and Africa
• In some regions of the world where Crohn's disease was rare, incidence is rising dramatically
CD in INDIA
• Female-to-male ratio in adult patients between $1.3 : 1$

• In the pediatric population this is reversed
• Age of diagnosis can range from early childhood throughout an entire lifespan
• Diagnosed most often among persons 15 to 30 years of age
• Smaller second peak in incidence later in life, generally in the seventh decade
ETIOLOGY AND PATHOGENESIS

- IBD represents a state of sustained immune response
- Appropriate response to an unrecognized pathogen or an inappropriate response to an innocuous stimulus
• A diversity of genetic alterations, those that affect
  -- intestinal barrier function
  -- regulation of mucosal immunity
can result in intestinal inflammation
GENETICS

• The relative risk among first-degree relatives is 14 to 15 times
• Studies of monozygotic and dizygotic twins suggest that genetic composition is a more powerful determinant of disease for Crohn's disease than for UC
• Ethnicity also plays a role
• There is a tendency within families for either UC or Crohn's disease to be present exclusively, mixed kindreds also occur
• Concordance of disease location and disease behavior
• *NOD2/CARD15* gene
• Autophagy-related 16-like 1 (*ATG16L1*) gene
• Interleukin (IL)-23 and related genes
ENVIRONMENT

• Higher socioeconomic status
• The hygiene hypothesis - presumably because of relative underexposure to diverse environmental antigens in the course of childhood
• Occupations associated with outdoor physical labor are relatively under-represented among Crohn’s patients
• Breast-feeding to be protective for IBD
• Oral contraceptives, NSAIDs implicated
- Increased intake of refined sugars
- Paucity of fresh fruits and vegetables
- Smoking is one of the more notable environmental factors for IBD.
- UC is largely a disease of ex-smokers and nonsmokers, whereas Crohn's disease is more prevalent among smokers.
• Crohn's disease has not been shown to be caused by stress or by an anxious personality
• Stress may be associated with risk of relapse in Crohn's disease
PATHOLOGY

EARLY FINDINGS:

• Aphthous Ulcers
• Noncaseating granulomas
LATER FINDINGS:

- Transmural process
- Larger ulcers with a stellate appearance.
- Linear or serpiginous ulcers
- Classic cobblestoned appearance of Crohn's disease (results when linear and transverse ulcers intersect and networks of ulcers surround areas of relatively normal mucosa and prominent submucosal edema)
- Sinus tracts, and strictures are late features of Crohn's disease
- Fibrosis is another transmural aspect of the disease
• Fat wrapping, creeping of mesenteric fat onto the serosal surface of the bowel
CLINICAL FEATURES

DISEASE LOCATION

• Potential to affect any segment of the gastrointestinal tract
• **Predilection for the distal small intestine and proximal colon**
• The discontinuous nature of the disease
• Relative or complete sparing of the rectum
CLINICAL PRESENTATION

- Variability present
- Location of disease
- Intensity of inflammation
- Presence of specific intestinal and extraintestinal complications
• Compared with UC, abdominal pain is a more frequent and persistent complaint.

• Fecal occult blood may be found in approximately one half of patients, but in contrast to UC, gross rectal bleeding is uncommon, and acute hemorrhage is rare.
Disease of the ileum, often accompanied by involvement of the cecum

- Small bowel obstruction
- Patients with an active inflammatory component to their disease more often present with anorexia, loose or frequent stools, and weight loss
- Physical examination can reveal fullness or a tender mass in the right hypogastrium during obstructive episodes
Colonic disease

- The typical presenting symptom of colonic disease is diarrhea, occasionally with passage of obvious blood
Perianal disease

• Common presentation of Crohn's disease. (24%)

• Perianal findings may be categorized as skin lesions, anal canal lesions, and perianal fistulas
DISEASE BEHAVIOR

- Aggressive fistulizing disease
- Indolent cicatrizing disease
- Neither
- Both
EXTRAINTESTINAL MANIFESTATIONS

Musculoskeletal

• Clubbing
• Arthritis
• Arthralgias
• Axial arthropathies
• Metabolic bone disease – osteopenia /osteoporosis
**Mucocutaneous**

- Pyoderma gangrenosum and erythema nodosum
- Aphthous ulcers of the mouth
Ocular

- Scleritis
- Uveitis
Hepatobiliary

- Asymptomatic and mild elevations of liver biochemical tests
- Gallstones
- Primary sclerosing cholangitis (more often is associated with UC, but it occurs in 4% of patients with Crohn's disease, usually those with colonic involvement)
- Fatty liver
- Autoimmune hepatitis
**Vascular**

- A prothrombotic tendency
- Venous thromboembolism or, much less commonly, arterial thrombosis
ESTABLISHING THE DIAGNOSIS

• Total assessment of the clinical presentation with confirmatory evidence from radiologic, endoscopic, and, in most cases, pathologic findings.
EVALUATING DISEASE ACTIVITY

- Symptoms
- ESR
- CRP
- Endoscopy
- Imaging
Distinguish from UC

- Mucosal lesions
- Distribution
- Depth of inflammation
- Serosal findings
- Perianal complications
- Strictures
- Fistulas
- Histopathology
Treatment

• Medical:
  - 5-ASA, sulfasalazine
  - Steroids
  - Immune modulators
  - Biologicals
    Anti-TNF antibodies (infliximab, adalimumab, certolizumab pego
    Natalizumab
• Surgery: conservative