

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 colitides
- 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
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- 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 immunitycan 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