INFLAMMATORY BOWEL DISEASE

Prepared by:
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6th stage
Crohn’s disease

- Is an idiopathic inflammation condition that most commonly affected the terminal ileum but can all region of GIT be involved in children.

Ulcerative colitis

- is an idiopathic inflammatory condition that localized to the colon in children.
Epidemiology and Etiology

- The peak incidence of IBD in children is in the second decade of life.
- The incidence of IBD is increasing.
- It is more common in Jewish than in other ethnic populations.
Genetic factors

- play a role in susceptibility, with significantly higher risk if there is a family history of IBD.
- Having a first-degree relative with IBD increases the risk about 30-fold.
- Susceptibility has been linked to some HLA subtypes.
Environmental factors:

**Smoking**

In CD smoking increases susceptibility to disease, rapid progression and further need for surgery. In UC more common in non-smokers than smokers - smoking is protective against the development of disease.
**Infective agents**

E.g Upper respiratory tract infections, measles virus & Mycobacterium paratuberculosis

**Seasonal changes**

Peak in the spring & autumn.

**Food** - Cows milk sensitivity, sugar & refined carbohydrates, fat.

**Stress** – implicated in aetiology of disease.
Clinical Features

UC

Main feature; bloody diarrhoea associated with frequency, urgency and abdominal cramps. There may be blood and pus in the stools and blood loss can be significant. In severe attacks patients may suffer weight loss and anorexia.
Extracolonic manifestations include:
Arthritis (large joints)
ankylosing spondylitis
erythema nodosum
pyoderma gangrenosum
iritis and episcleritis (inflammation of the eyeball)
primary sclerosing cholangitis.
Pyoderma Gangrenosum
IBD – Extra intestinal manifestations

Episcleritis

Erythema Nodosum
Pattern of Disease - UC

Spreads proximally and continuously from the rectum and characterised by remission and relapse.
Increased incidence of colonic cancer
Remission can be maintained by drug therapy but only cured by total colectomy
Clinical Feature - CD

Symptoms typically include abdominal pain, diarrhoea and weight loss, with systemic symptoms of malaise, anorexia and fever more common than UC.

May cause intestinal obstruction due to strictures, fistulae (often perianal) and/or abcess formation.
Additional manifestations as above plus,
Sacrolitis
apthous ulcer
finger clubbing
gall stones
psychiatric disorders
Aphthous Ulcer
Pattern of Disease - CD

Occurs in skip lesions with healthy bowel inbetween and also characterised by remission and relapse.

Increased risk of colonic cancer in Crohn`s colitis.

Surgery not curative but to minimise impact of disease
Complication;

- **Toxic megacolon** is a life-threatening complication characterized by fever, abdominal distention and pain, massively dilated colon, anemia, and low serum albumin owing to fecal protein losses.

- **Fulminant colitis** which characterized by fever, severe anemia, hypoalbuminemia, leukocytosis, or more than 5 bloody stool for 5 days.

- **Extraintestinal manifestations**.
<table>
<thead>
<tr>
<th>Crohn’s Disease</th>
<th>Ulcerative Colitis</th>
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<tbody>
<tr>
<td>Any part of the GI tract</td>
<td>Colon only</td>
</tr>
<tr>
<td>Discontinuous</td>
<td>Continuous</td>
</tr>
<tr>
<td>Rectal sparing</td>
<td>No rectal sparing</td>
</tr>
<tr>
<td>Non-caseating granulomas</td>
<td>No granulomas</td>
</tr>
<tr>
<td>Transmural inflammation</td>
<td>Mucosal inflammation</td>
</tr>
<tr>
<td>Fistulae and abscesses</td>
<td>Abscesses very rare</td>
</tr>
<tr>
<td>Strictures common</td>
<td>Strictures rare</td>
</tr>
<tr>
<td>Ileum commonly involved</td>
<td></td>
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<tr>
<td>Perianal disease</td>
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Growth Failure
Etiology of Growth Failure in IBD

- Increased needs
- Malabsorption
- Suboptimal intake
- Increased GI losses

MALNUTRITION

GROWTH FAILURE

- Pubertal Delay
- Inflammation
- Corticosteroids
Diagnostic Approach to IBD

• Suspect the diagnosis
  – History, exam, CBC, ESR, CRP, albumin
• Exclude other etiologies
  – Stool culture, *C. difficile*, TB skin test
• Classify disease as Crohn’s or UC; determine disease location in CD
  - Upper endoscopy, colonoscopy, UGI/SBFT
• Identify extraintestinal manifestations
  – Liver function tests, joint, skin, eye exams
Initial Laboratory Evaluation

- Complete blood count and differential
- Erythrocyte sedimentation rate
- C-reactive protein
- Liver transaminases
- Serum Albumin
- Consider celiac serology (tTG, Anti EMA)

Enteric Infections can Mimic IBD

- Following infections may mimic colitis
  - Salmonella, Shigella, Yersinia, Campylobacter
  - *Clostridium difficile*
  - *E. coli* (especially 0157:H7)
  - *Entamoeba histolytica*
- Following infections may mimic ileitis
  - Tuberculosis
  - Yersinia
Serologic Testing ≠ Confirmed Diagnosis

- Antibodies present in the serum of patients with IBD
- Likely represent immune responses to resident enteral bacterial and fungal antigens
- Examples include p-ANCA, ASCA, anti OmpC, anti I2
- Low sensitivity (44-60%) and hence unreliable as screening tool
- Endoscopic, radiological and histopathological criteria need to be met in order to make a correct diagnosis and differentiate disease subtypes

Dubinsky; Dig Dis 2009; 27:259–268.
Crohn’s Ileitis

Normal ileum
(Peyer’s patches)

Crohn’s ileitis
(ulceration & exudate)
Colon in Crohn’s and UC

**Normal Colon**
- Smooth and shiny
- Normal vascularity
- Tortuous
- Normal folds

**Ulcerative Colitis**
- Loss of vascular pattern
- Granularity
- Exudates
- Diffuse continuous disease
- No ileal involvement

**Crohn’s Colitis**
- Deep fissures
- Cobblestoning
- Segmental distribution
- Rectal sparing
- Ileal involvement
- Granulomas on biopsy
First Line Therapy for Crohn’s Disease
Mild-Moderate Crohn’s Disease

- Aminosalicylates
  - Topical and oral
- Antibiotics
- Enteral feeds
- Corticosteroids
  - Budesonide
  - Prednisone
Moderate-Severe Crohn’s Disease

- **Enteral feeds** (induction)
- **Corticosteroids** (induction)
  - Budesonide versus prednisone
- **Immunomodulators** (maintenance)
  - 6-mercaptopurine
  - Azathioprine
  - Methotrexate
- **Biologics** (Induction & maintenance)
  - Infliximab
  - Adalimumab
  - Certolizumab
Inflammation in CD typically responds less well to aminosalicylates; oral or IV steroids are more important in inducing remission. To avoid the need for repetitive steroid therapy, immunosuppressive drugs, usually either azathioprine or 6-mercaptopurine, are started soon after diagnosis.
CD that is difficult to control also may be treated with methotrexate or with agents that block the action of tumor necrosis factor-α. **Infliximab** is the most effective such drug; thalidomide also blocks tumor necrosis factor action, but its use must be supervised carefully because of teratogenicity.

Other antibodies that inhibit W.B.C migration or action such as natalizumab also show promise.
First Line Therapies for Ulcerative Colitis
### Approach to First Line Therapy for UC

<table>
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<tr>
<th>SEVERITY</th>
<th>Mild to Moderate</th>
<th>Mod to Severe</th>
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<tbody>
<tr>
<td><strong>Induction</strong></td>
<td>Aminosalicylates</td>
<td>Corticosteroids</td>
</tr>
<tr>
<td><strong>Remission</strong></td>
<td>Aminosalicylates</td>
<td>6-MP/ Azathioprine</td>
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**Treatment**

**Ulcerative Colitis**

UC is treated with the aminosalicylate drugs, which deliver 5-aminosalicylic acid (5-ASA) to the distal gut. Because it is rapidly absorbed, pure 5-ASA (mesalamine) must be specially packaged in coated capsules or pills or taken as a suppository to be effective in the colon.
Other aminosalicylates (sulfasalazine, olsalazine, and balsalazide). Sulfasalazine is the least expensive, but side effects resulting from its sulfapyridine component are common. When aminosalicylates alone cannot control the disease, steroid therapy may be required to induce remission. Whenever possible, steroids should not be used for long-term therapy.
An immunosuppressive drug, such as 6-mercaptopurine or azathioprine, is useful to spare excessive steroid use in difficult cases. More potent immunosuppressives, such as cyclosporine or tacrolimus, are under investigation as rescue therapy when other treatments fail.
Indications for Surgery in Crohn’s Disease

- Failure of medical therapy
- Recurrent obstruction
- Perforation
- Fistula or abscess
- Hemorrhage
- Growth retardation (children)
- Carcinoma

Indications for Surgery in UC

Absolute
- Exsanguinating hemorrhage
- Perforation
- Cancer or dysplasia

Relative
- Medically refractory
- Steroid dependency
- Growth retardation
- Systemic complications
Non-immunocompromised Patient

- Recommended vaccine schedule for age
- No contra-indication for live virus in the stable patient

Immuno-compromised Patient

• Live virus vaccines contra-indicated
  – Intra-nasal influenza
  – MMR, OPV, Varicella

• Killed vaccines should be given according to recommended schedule
  – Influenza
  – Pneumococcus
  – Hepatitis B
  – Meningococcus
  – HPV

Bone Disease
Bone Density in Children with IBD

- Bone mineral density is often reduced in children with IBD, both UC and CD.
- Pathogenesis is multifactorial
- Decreased bone turnover more likely than increased bone resorption
- Vertebral compression fractures can occur

Therapy for Decreased Bone Density

- Control the underlying disease
- Optimize nutrition
  - Calories/protein
  - Calcium/Vitamin D (and vitamin K?)
- Promote physical activity
- Should be managed in conjunction with a specialist in bone health
THANK YOU