Initial Workup for Acute Ulcerative Colitis (ED Ulcerative Colitis)

- Clinical assessment, labs, stool
- Nurse to complete PUCAI score tool
- Consider abdominal X-ray and surgical consult for symptoms such as severe pain, abdominal distention, guarding or rigidity, fever (>38.5°C), shock

ED Inclusion Criteria
- Known ulcerative colitis

Exclusion Criteria
- Toxic megacolon
- Known active infection including CMV, C difficile, or TB
- Crohn’s disease
- Gastrointestinal (GI) perforation

Admit Criteria
- PUCAI >65 OR
- 6 or more bloody bowel movements/day AND one of the following: tachycardia, fever, anemia, elevated ESR OR
- Dehydration, unable to take oral medications or oral resuscitation

First-line Treatment for Acute Severe Ulcerative Colitis (ED Ulcerative Colitis)
- Discuss treatment plan with GI
  - First-line treatment methylPREDNISolone 1.5mg/kg IV max 60mg daily 0800 (may give first dose in ED, if first dose given after midnight give second dose the following day at 0800)
  - Patients established on steroids: continue and add stress dose
  - Pain management
  - Antibiotics if at risk for C. difficile
- For patients who have received outpatient treatment (6-mercaptopurine, azathioprine, infliximab, course of oral steroids) discuss alternate next steps with GI
Inpatient Acute Severe Ulcerative Colitis

### Inclusion Criteria
- Known ulcerative colitis with Acute Severe Colitis defined as:
  - Pediatric Ulcerative Colitis Activity Index (PUCAI) > 65 OR
  - 6 or more bloody bowel movements/day AND one of the following: tachycardia, fever, anemia, elevated ESR
- Dehydration, unable to take oral medications or oral resuscitation

### Exclusion Criteria
- Toxic megacolon
- Known active infection including CMV, C. difficile, or TB
- Crohn’s disease
- Gastrointestinal (GI) perforation

---

**Executive Summary**

**Explanation of Evidence Ratings**

**Test Your Knowledge**

**Summary of Version Changes**

**Citation Information**
**DISCHARGE PLANNING**

**PUCAI < 35**

Yes, improved
Wean to home regimen
Prepare for discharge

**Discharge Criteria**

- PUCAI < 35 points (no more than mild disease)
- Afebrile for 24 hours and stable vital signs
- Sufficient oral intake and good hydration
- Pain controlled without IV medications
- Stable hemoglobin without the need for transfusion for at least 2 days
- If new diagnosis: dietary teaching is complete
- Follow-up scheduled in Gastroenterology Clinic

**Discharge Instructions**

- Print IBD discharge instructions from CIS
- Stress that parent should call GI for: fever, new pain lasting >4 hours, rectal bleeding with most bowel movements for 2 days, diarrhea that causes child to awaken at night, to not drink enough liquid, or restricts activity, or for other concerns.

**Definitions**

- 5-ASA, 5-aminosalicylic acid
- ASC, acute severe colitis
- CMV, cytomegalovirus
- NPO, nothing by mouth
- PUCAI, pediatric ulcerative colitis activity index
- UC, ulcerative colitis of live measures
Objective 1: Inclusion & Exclusion Criteria

ASC patients can present to ED or directly to inpatient ward. The algorithm only applies to patients with known UC.

- Exclude acute infections precluding anti-inflammatory agent use & toxic megacolon
- Review ED admission criteria
  - Based on signs & symptoms and pediatric UC activity index

[Consensus Guideline (Turner, 2011)]

ED Inclusion Criteria
- Known ulcerative colitis

Exclusion Criteria
- Toxic megacolon
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ED Inclusion Criteria
- Known ulcerative colitis

Exclusion Criteria
- Toxic megacolon
- Known active infection including CMV, C difficile, or TB
- Crohn’s disease
- Gastrointestinal (GI) perforation

Toxic Megacolon
- Medical/surgical emergency
- Suspect in patients with:
  - Symptoms/signs: severe pain, abdominal distention, altered level of consciousness, guarding or rigidity
  - Systemic toxicity: fever, tachycardia, dehydration, electrolyte disturbance (esp. hypokalemia), or shock
  - Radiographic evidence of colon dilatation
    - >=56mm OR
    - >40mm in patients <10 years

Toxic Megacolon (Cont’d)
- Management
  - Correct fluid, electrolyte imbalance
  - Food restriction
  - Antibiotics
  - Preparation for surgery

[Consensus Guideline (Turner, 2011)]
(see also Turner et al, Gut, 2008;57:331-8.)

[Expert Opinion (E)]
Acute Severe Colitis: Why Does it Happen?

- Course of IBD
  - Severe at disease presentation
  - Severe due to disease progression
- Other
  - Infection
    - C diff
    - cytomegalovirus (CMV)
    - Other
  - Drug related
    - Allergy/reaction (Mesalamine, Anti TNF, azathioprine/6MP)
    - Narcotic bowel syndrome (decreased intestinal motility, severe constipation, and abdominal distension in the setting of narcotic drug use)

Initial Investigations

- Aims:
  - Rule out infection, assess severity & complications
- Baseline labs:
  - Blood
    - electrolytes, CRP, ESR, albumin, alt, GGT, lipase, cbc, Mg, ca, bun/serum creatinine
  - Stool
    - C difficile stool antigen and toxin (specimen to lab within 2 hours) May repeat if clinically indicated
    - Routine stool culture
    - Rotavirus if in season
    - Ova and parasite if recent travel

[Consensus Guideline (Turner, 2011)]

NOTE: Fecal biomarkers (e.g, calprotectin) are not helpful due to low responsiveness
Investigations

- Steroids can affect TB screen accuracy
- Immune suppression can allow TB reactivation
- Early screening for TB should be done if:
  - TB status not known
  - Not recently available and recent exposure

Age ≥5 years QuantiFERON-TB gold
Age <5 years PPD Skin Test
Indeterminate results require chest X-Ray (CXR)

- International travel
- Incarceration
- Chronic unexplained cough
- Living with
  - recently incarcerated
  - healthcare worker
  - known TB person

[Consensus Guideline (Turner, 2011) with local expert opinion]

Assessment for Cytomegalovirus (CMV)

- Cytomegalovirus (CMV) colitis can complicate Acute Severe Colitis (ASC) and requires treatment
- Workup for CMV day 3-5 if patient is not improving
  - Sigmoidoscopy with biopsy for CMV PCR and
  - Immunohistochemistry for CMV cytopathic effect
- Full colonoscopy is not recommended due to high complication risk

[Consensus Guideline (Turner, 2011)]
Drugs Warranting Caution

- Drugs with risk of allergy and symptom exacerbation
  - Mesalamine (Asacol, Lialda, Pentasa, Sulfasalazine)
  - Azathioprine/mercaptopurine
  - Nonsteroidal Anti-Inflammatory Drugs (NSAIDS)
- Narcotics
  - Narcotic bowel syndrome and masking complications

[Consensus Guideline (Turner, 2011) with local expert opinion]
Objective 4: Medical therapy 1\textsuperscript{st} Line

**First-line therapy**

Methylprednisolone 1.5mg/kg/day max 60mg
First dose in ED/on admission, subsequent daily 0800 dose
Patients already on steroids: continue and add stress dose

[Consensus Guideline (Turner, 2011)
with local expert opinion]

**Acid Blockers**

- Standard prophylaxis against gastrointestinal bleeding is not recommended
  - Possible risk of C difficile
  - Risk of hospital acquired pneumonia


**Antibiotics**

- Routine antibiotic use is not recommended
- Consider antibiotic therapy for C diff if at risk
  - Antibiotic use 3 days to 3 months prior to colitis symptoms
  - Prior recent history of C diff infection
  - May start empiric antibiotics pending results.
  - Mild to moderate symptoms: oral metronidazole
  - Severe symptoms but tolerating oral intake: oral Vancomycin
  - If NPO: IV metronidazole

[Consensus Guideline (Turner, 2011)
with local expert opinion]
Objective 1: Algorithm Inclusion & Exclusion Criteria

**Inclusion Criteria**

Known ulcerative colitis with Acute Severe Colitis defined as:
- Pediatric Ulcerative Colitis Activity Index (PUCAI) >65 OR
- 6 or more bloody bowel movements/day AND one of the following: tachycardia, fever, anemia, elevated ESR
- Dehydration, unable to take oral medications or oral resuscitation

**Exclusion Criteria**
- Toxic megacolon
- Known active infection including CMV; C difficile, or TB
- Crohn’s disease
- Gastrointestinal (GI) perforation

**Ulcerative Colitis - Acute Severe Colitis: Definition**

- Patients with severe Ulcerative Colitis are generally hospitalized
- Proposed criteria for diagnosis:
  - >6 bowel movements with blood daily
  - One of the following:
    - tachycardia (>90 bpm)
    - temperature >37.8 °C
    - anemia (hemoglobin <10.5 g/dl)
    - erythrocyte sedimentation rate (>30 mm/h)

[Consensus Guideline (Turner, 2011)]

Objective 3: Toxic megacolon

- Medical/surgical emergency
- Suspect in patients with:
  - Symptoms/signs: severe pain, abdominal distention, altered level of consciousness, guarding or rigidity
  - Systemic toxicity: fever, tachycardia, dehydration, electrolyte disturbance (esp hypokalemia), or shock
  - Radiographic evidence of colon dilatation
    - >=56mm or
    - >40mm in patients <10 years

IBD Risk Factors for Venous Thromboembolism

Active Severe disease (UC pancolitis or colonic Crohn’s) AND any of the following:

- Central venous line
- Prior history of VTE or known thrombophilia or 1st-degree family history of VTE
- Oral contraceptives
- Thalidomide
- Obesity
- Smoking
- Age 14 years or older (younger if post-pubertal)

Prophylaxis for Thromboembolism

Patients at risk who have no major GI bleeding (i.e. requiring blood transfusion, noting that some GI bleeding is expected in this setting) should be offered prophylaxis with:

- Enoxaparin subcutaneously
  0.5 mg/kg (max 30mg) twice daily
  If Age ≥18 years: may use 40mg daily
  If obese (BMI>30 kg/m²): dose per formulary
- Continue prophylaxis until resolution of colitis or removal of central line

**NOTE:** Use Enoxaparin Prophylaxis Orderset

(Bloom, 2004; de Bievre, 2007; Dignass, 2012; Kornbluth, 2010; Mowat, 2011; Zezos, 2006; Zitomersky, 2013)
### How is the Disease Severity Assessed?

The Pediatric UC activity index

- Good discriminant and predictive validity in acute severe colitis
- 1-2 minutes to complete
- Very responsive to change
- Limitation
  - Ceiling effect
  - Score > 85 points further discrimination in disease activity is impossible

### Pediatric UC activity index

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td>Can be ignored</td>
<td>5</td>
</tr>
<tr>
<td>Cannot be ignored</td>
<td>10</td>
</tr>
<tr>
<td>Rectal Bleeding</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td>Small amount, &lt;50% of stools</td>
<td>10</td>
</tr>
<tr>
<td>Small amount, most stools</td>
<td>20</td>
</tr>
<tr>
<td>Large amount, &gt;50% stool content</td>
<td>30</td>
</tr>
<tr>
<td># Stools</td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>0</td>
</tr>
<tr>
<td>3-5</td>
<td>5</td>
</tr>
<tr>
<td>6-8</td>
<td>10</td>
</tr>
<tr>
<td>&gt;8</td>
<td>15</td>
</tr>
<tr>
<td>Nocturnal Stools</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
</tr>
<tr>
<td>Stool Consistency</td>
<td></td>
</tr>
<tr>
<td>Formed</td>
<td>0</td>
</tr>
<tr>
<td>Partially formed</td>
<td>5</td>
</tr>
<tr>
<td>Completely unformed</td>
<td>10</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
</tr>
<tr>
<td>No limitation</td>
<td>0</td>
</tr>
<tr>
<td>Occasional limitation</td>
<td>5</td>
</tr>
<tr>
<td>Severe restriction</td>
<td>10</td>
</tr>
</tbody>
</table>


### PUCAI Score as a Predictive Tool

<table>
<thead>
<tr>
<th>PUCAI Score</th>
<th>On Day #</th>
<th>Outcome Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;45</td>
<td>3</td>
<td>94% complete response</td>
</tr>
<tr>
<td>35-60</td>
<td>5</td>
<td>67% will respond</td>
</tr>
<tr>
<td>&gt;65</td>
<td>5</td>
<td>All require salvage therapy</td>
</tr>
</tbody>
</table>

Turner et al. Gastroenterology 2010;138:2282–1291
Nutrition

• If tolerated, oral intake should be continued
  • Allow GI1 or GI2 diet (low fructose, lactose, residue)
• If patient is on opioids
  • restrict oral intake to clears
  • restrict sugar and sweetened beverage
• Nutrition consult should be done by day 3 of admission
  • Malnutrition and anemia are associated with increased post-op morbidity
• Oral intake should be restricted in patients with toxic megacolon and impending surgery

[Consensus Guideline (Turner, 2011) with local expert opinion]
Pain Control

- Pain out of proportion with disease severity should be taken seriously and promptly lead to exclusion of TMC and bowel perforation
- Use relaxation techniques, hot packs, and acetaminophen
- Consider benzodiazepines (lorazepam)
- Consider nalbuphine per formulary

[Consensus Guideline (Turner, 2011) with local expert opinion]

Pain Control

- When to consult pain team
  - Uncontrolled episodic pain that may require PCA
  - Patients on baseline opioids at presentation without adequate control
  - Pre-surgery (even if well-managed)
  - If requiring >4 doses of nalbuphine per 24 hours

[Expert Opinion (E)]
Steroid taper after starting 2nd line therapy

- Steroid taper must be initiated to reduce immune suppression
- Taper dose by 20% every 5 days

[Expert Opinion (E)]

When to Assess Second-Line Response

<table>
<thead>
<tr>
<th>Drug</th>
<th>When to Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFLIXIMAB</td>
<td>No worsening at 7 days and improve PUCAI ≥20 points in 14 days</td>
</tr>
<tr>
<td>Tacrolimus</td>
<td>Improve PUCAI ≥20 points by 7 days</td>
</tr>
</tbody>
</table>

[Consensus Guideline (Turner, 2011)]
### Second-line Therapy in Pediatric Corticosteroid-Refractory Ulcerative Colitis

<table>
<thead>
<tr>
<th><strong>Initial Dosing</strong></th>
<th><strong>Infliximab</strong></th>
<th><strong>Tacrolimus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>5mg/kg over 2-4h; subsequent doses given 2 weeks and 6 weeks after the initial infusion. Some centers utilize higher doses (10mg/kg), or infuse the second dose after 7-10 days.</td>
<td>0.1mg/kg/dose orally b.i.d. Stop medication after 3-4 months.</td>
<td>Aim initially for 10-15ng/ml, and then 5-10ng/ml, once remission achieved (for timing see below).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Trough Drug Levels</strong></th>
<th><strong>Infliximab</strong></th>
<th><strong>Tacrolimus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not indicated.</td>
<td>Measure blood pressure and blood tests: creatinine, glucose, electrolytes, liver profile; test and treat hypomagnesemia and hypocholesterolemia to decrease the risk of neurotoxicity (more with cyclosporine).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Tests Before Treatment</strong></th>
<th><strong>Infliximab</strong></th>
<th><strong>Tacrolimus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation of negative tuberculosis testing and chest X-ray; consider varicella hepatitis B and C serology in endemic areas.</td>
<td></td>
<td>Hypertension, hyperglycemia, hypomagnesemia, immune suppression, azotemia (dose dependent), seizures (dose and hypocholesterolemia dependent), hirsutism (more with cyclosporine), tremor (more with tacrolimus); erythromycin, ketoconazole, and grapefruit juice can increase cyclosporine and tacrolimus levels.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Main Toxicity</strong></th>
<th><strong>Infliximab</strong></th>
<th><strong>Tacrolimus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Infusion reactions, increased infection rate, rare opportunistic infections.</td>
<td></td>
<td>Monitor every other day during induction, weekly for the first month, and then monthly: drug levels (starting after third dose), creatinine, glucose, electrolytes (including magnesium), lipid levels, blood pressure, and neurological symptoms. Consider: measure creatinine clearance at baseline and initiate Pneumocystis pneumonia prophylaxis.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Monitor Toxicity</strong></th>
<th><strong>Infliximab</strong></th>
<th><strong>Tacrolimus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent assessment of vital signs during infusion.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
When is the Optimal Time for Surgery?

If PUCAI >65 at any time during the patient’s course, Surgery has to be considered

Third-line medical therapy is not indicated in patients not responding to second-line therapy. Instead, these patients should be considered for colectomy.

[Consensus Guideline (Turner, 2011) with local expert opinion]

Surgical Considerations

- Subtotal colectomy/ileostomy is the preferred surgery
- Ileal pouch with bowel continuity can be completed in the future [Consensus Guideline (Turner 2011) with local expert opinion]
Discharge Medication Considerations

- At discharge
  - When switching from IV methylprednisolone to oral prednisone, dose conversion should be 1:1 for a maximum of prednisone 60mg daily.
  - Steroid maximum dose will be continued for 2-4 weeks total then taper will be started 2-3 weeks after initiation by 5 mg weekly

[Consensus Guideline (Turner, 2011) with local expert opinion]

- If starting azathioprine:
  - best delayed 2 weeks after discharge
- If tacrolimus used:
  - azathioprine best delayed till prednisone <20 mg
- Oral 5-ASA can be introduced or reintroduced at discharge for patients who can tolerate it

[Consensus Guideline (Turner, 2011) with local expert opinion]
Objective
To use the Pediatric Ulcerative Colitis Assessment Index (PUCAI) score to drive care for Children who are admitted to the hospital with Acute Severe Colitis, and to ensure that these children are referred for colectomy expeditiously when that is the appropriate treatment choice.

Recommendations
1. Use daily PUCAl score to guide care.
2. Use standardized methylprednisolone dose
3. Use standardized second line therapies (infliximab or tacrolimus for those who cannot use infliximab)
4. Order standardized tests for initial workup
5. Avoid pain medications that may worsen disease
6. Use standardized steroid taper

Rationale
- Safety of care will be increased by using standard doses of steroids and other medication for children with acute ulcerative colitis.
- Quality of care will improve by reducing guesswork in the treatment of patients with acute ulcerative colitis, and instead relying on a validated tool to drive care.
- Delivery of care will be improved by using the PUCAl to drive care of patients with acute ulcerative colitis.
- Engagement is grounded in the fact that the pathway has been developed by RNs and MDs.
- Patient/Family Satisfaction will be addressed by utilizing a new ulcerative colitis family education pamphlet.
- Costs will be reduced by reducing the length of stay for patients who will ultimately require colectomy.

Evidence
This pathway implements the guideline written by Turner et al Am J Gastroenterol 2011; 106:574–588.

Implementation Items
- Developed an algorithm and training module
- Developed a Powerplan, a Powerform to document patient symptoms, and nursing guideline of care
- Developed education pamphlet for families, and discharge forms from ED and inpatient
- Standardized steroid taper
IBD: Acute Ulcerative Colitis Medical Management – July 2012

Executive Summary

Metrics Plan
1. Count of Inpatient/obs discharges
2. Median Length of Stay
3. % of patients with any of the specified ordersets
4. Average charges per case
5. Readmissions
6. 85% of patients receive recommended steroid dose 1 month after implementation
7. PUCAI score documented daily on 85% of possible days 3 months after implementation.
8. 65% of patients with PUCAI more than 65 by day 6-10 receive 2nd line drug 6 months after implementation.
9. Fewer than 15% of colectomies will happen after Day 14 of admission.

PDCA Plan
The CSW owner and committee will follow metrics, continue to review medical literature, and make alterations to the pathway as needed.

Revision History
Date Approved: 6/4/12
Next Review Date: 6/4/15
Executive Summary

IBD: Acute Ulcerative Colitis Medical Management – June 2012
CSW Approval

Approved by the Inflammatory Bowel Disease – Ulcerative Colitis Medical Management Clinical Standard Work Pathway Team on June, 2012

Inflammatory Bowel Disease – Ulcerative Colitis Medical Management Clinical Standard Work Pathway Team:

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Title: Inflammatory Bowel Disease-Ulcerative Colitis Pathway

Authors:
- Seattle Children’s Hospital
- Ghassan Wahbeh
- Steve Esmaili
- Jennifer Hrachovec
- Kristi Klee
- Mike Leu

Date: June 2012


Example:
1) The following criteria define acute severe colitis EXCEPT:
   a) 7 bowel movements daily
   b) Pain
   c) Vomiting
   d) Dehydration

2) What is the viral agent likely to significantly complicate Ulcerative Colitis?
   a) Clostridium difficile
   b) Adenovirus
   c) Influenza
   d) Cytomegalovirus

3) All the following medications are known to possibly exacerbate Ulcerative colitis due to allergy or side effect EXCEPT:
   a) Azathioprine
   b) Mercaptopurine
   c) Vancomycin
   d) Mesalamine

4) When is TB REtesting indicated for patients with Ulcerative Colitis?
   a) Yearly
   b) Change in therapy
   c) Travel to Canada
   d) Patient recently volunteered at adult hospital

5) PUCAI score takes 2 minutes to complete.
   a) TRUE
   b) FALSE

6) Which of the following statements is true regarding PUCAI:
   a) PUCAI score is obtained every 2 days
   b) PUCAI is poorly sensitive to symptom changes
   c) Patient's RN obtains and documents the score
   d) It is obtained at midnight

7) Based on PUCAI score, when should surgery be considered?
   a) <35
   b) 35-45
   c) >45
   d) >65

8) The following signs and symptoms raise concern for toxic megacolon EXCEPT:
   a) Acute change in pain
   b) Increase diarrhea with stools
   c) Tachycardia
   d) Abdominal distension
9) What is the empiric oral antibiotic of choice for a UC patient with severe diarrhea, exposure to antibiotics 2 months ago, and able to tolerate oral intake?
   a) Azithromycin
   b) Metronidazole
   c) Vancomycin
   d) Amoxicillin

10) What is the best next course of action for a child on IV methylprednisone with PUCAI score of 70 on day 6 and no C difficile or CMV?
    a) Tacrolimus
    b) Infliximab
    c) Additional 48 hours of methylprednisone
    d) Increase dose of steroids to 2mg/kg

11) Five days after second line therapy is initiated, the patient develops more stools, blood and more nocturnal episodes of rectal bleeding. What is the next best step:
    a) Colectomy
    b) Increase steroid dose
    c) Increase infliximab dose
    d) Keep NPO

12) What are the nutrition options for a child who is on opiates for pain?
    a) Lactose free solids
    b) Clears
    c) Low residue solids
    d) Full liquids
1) The correct answer is: (c), Vomiting
2) The correct answer is: (d), Cytomegalovirus
3) The correct answer is: (c), Vancomycin
4) The correct answer is: (d), patient recently volunteered at adult hospital
5) The correct answer is: TRUE
6) The correct answer is: (c), Patient’s RN obtains and documents the score
7) The correct answer is: (d), >65
8) The correct answer is: (b), Increase diarrhea with stools
9) The correct answer is: (c), Vancomycin
10) The correct answer is: (b), Infliximab
11) The correct answer is: (a), Colectomy
12) The correct answer is: (b), Clears
Summary of Version Changes

- **Version 1 (7/10/2012):** Go live, IBD: Severe Acute Ulcerative Colitis Medical Management
- **Version 1.1 (8/6/2012):** Updated clinical images and discharge prednisone dose
- **Version 1.2 (9/27/2012):** Added link to patient pamphlet
- **Version 1.3 (4/30/2013):** Updated dose conversion for discharge prednisone dose
- **Version 1.4 (7/31/2013):** Updated tacrolimus dose
- **Version 2.0 (7/6/2015):** Added ED powerplan name, added thrombosis prophylaxis recommendations
Evidence Ratings

We used the GRADE method of rating evidence quality. Evidence is first assessed as to whether it is from randomized trial, or observational studies. The rating is then adjusted in the following manner:

Quality ratings are downgraded if studies:
• Have serious limitations
• Have inconsistent results
• If evidence does not directly address clinical questions
• If estimates are imprecise OR
• If it is felt that there is substantial publication bias

Quality ratings can be upgraded if it is felt that:
• The effect size is large
• If studies are designed in a way that confounding would likely underreport the magnitude of the effect OR
• If a dose-response gradient is evident

Quality of Evidence:
★★★★ High quality
★★★☆ Moderate quality
★★☆☆ Low quality
★☆☆☆ Very low quality
Expert Opinion (E)

Medical Disclaimer

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required. The authors have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication.

However, in view of the possibility of human error or changes in medical sciences, neither the authors nor Seattle Children’s Healthcare System nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from the use of such information.

Readers are encouraged to confirm the information contained herein with other sources.

Return to ED Management

Return to Inpatient Management
Studies were identified by searching electronic databases using search strategies developed and executed by a medical librarian, Jamie Graham. Searches were performed on August 29th, 30th & 31st, 2011 in the following databases: on the Ovid platform – Medline (1996 to date), Cochrane Database of Systematic Reviews (2005 – June 2011); elsewhere the National Guidelines Clearinghouse, Clinical Evidence, DynaMed and TRIP were searched. Additional citations were identified by the team and added as requested. Search strategies were not identified for these citations. Retrieval was limited to English language, and children ages 0-18/ young adult 19-24. Originally, date restrictions were imposed but were removed once combined with the age limits due to small results set. In Medline, appropriate Medical Subject Headings (MeSH) were used, along with text words, and the search strategy was adapted for other databases using their controlled vocabularies, where available, along with text words. Results were restricted to high levels of evidence where appropriate using the following publication limits; consensus development conference, consensus development conference (NIH), guideline, meta-analysis or practice guideline and systematic review.

Second stage searching to cover from January 2010 (per team request) was performed in EMBASE, Medline and the Cochrane Central Register of Controlled Trials on January 13th & 14th, 2012. Publication limiters of RCT, EBM reviews, exp epidemiologic studies, multicenter studies, overall, technical reports, and clinical queries (therapy balance) were included. Two additional questions involving the use of acid blockers and steroids were researched separately. Alerts to update the team of new literature were set quarterly in both Medline and EMBASE.

Terms: inflammatory bowel disease; colitis, ulcerative; crohn disease; medical management; medical treatment; medical intervention; reduc*; impact; improve; surgical procedures, operative; diet therapy; drug therapy; treatment length; treatment duration; practice guideline as topic; benchmarking; best practice; gold standard

Jamie Graham, MLS
February 10, 2012

Identification

116 records identified through database searching
13 additional record identified through other sources

Screening

129 records after duplicates removed

Eligibility

129 records screened
56 full-text articles assessed for eligibility

Included

29 full-text articles excluded,
13 did not answer clinical question
3 older study
13 did not meet quality threshold

27 studies included in pathway

Flow diagram adapted from Moher D et al. BMJ 2009;339:bmj.b2535
**Bibliography**

- Sutherland LR, MacDonald JK. Oral 5-aminosalicylic acid for induction of remission in ulcerative colitis. Cochrane Database of Systematic Reviews [IBD], 2010;6.

**Anticoagulation:**


*Articles for anticoagulation not included in literature flow diagram*