

Primary Children’s Hospital, University of Utah - Enterocolitis Triage and Treatment Protocol in Children with Hirschsprung Disease

QI Project: Use of an Enterocolitis Triage and Treatment Protocol in Children with Hirschsprung Disease Reduces Hospital Admissions

Brief description: While a consensus for the definition of Hirschsprung associated enterocolitis (HAEC) is lacking, the mainstay of treatment includes rectal irrigations with or without antibiotics. This treatment is often effective when initiated as an outpatient. Our institution implemented a triage algorithm in an effort to standardize care thus providing more timely treatment and preventing unnecessary hospital admissions. We sought to review our short-term experience.

Protocol:

Hirschsprung’s Associated Enterocolitis (HAEC):

- An infectious disorder of the bowel in children diagnosed with Hirschsprung’s Disease (HD)
- Diagnosis based on clinical signs and symptoms
- Leading cause of morbidity and death in patients with HD

Symptoms

Moderate Symptoms	Severe Symptoms
Diarrhea	Lethargy
Diarrhea with explosive stool	Evidence of dehydration
Foul smelling stool	Persistent vomiting (despite irrigations)
Vomiting	Persistent fever (despite irrigations)
Fever ($\geq 102F/ 38C$)	Poor oral intake
Abdominal distension (mild)	Pale or mottled appearing
History of Enterocolitis	Diarrhea with bloody stool

Studies

Study/ Exam	Moderate	Severe
2 view ABD x-ray	Ileus gas pattern	Air fluid levels Dilated bowel loops Pneumatosis Recto-sigmoid cut off
CBC w/ diff BMP	Leukocytosis	Elevated neutrophil count Bandemia
GI film array PCR (stool)	Negative Viral	C. Diff
Rectal Exam	Explosive stool	

** When treatment with rectal irrigations is initiated each irrigation should be repeated until effluent is clear*

Criteria to start at home treatment:

- **Diagnosis:** 2+ moderate symptoms
 - Phone interview symptom checklist (see above)
 - By physical symptoms only
- **Studies:** none
- **Treatment:**
 - Rectal irrigations 20ml/kg BID x 7 days
- **Follow up:**
 - 24-48 hrs. by phone
 - Phone interview on symptom checklist
 - If improvement continue with irrigations x 7 days total call at end of treatment stop if symptoms resolved
 - If **NO improvement** evaluate in person (clinic same day or next day, ED if worsening and after hours)
 - Consider starting Flagyl (10mg/kg/ dose TID x7 days)

Criteria to be evaluated in person

- **Diagnosis:** 2+ moderate symptoms **AND** a severe symptom
 - Phone interview symptom checklist Seen in clinic or ED
- **Exam:**
 - Vital signs
 - Physical exam including rectal exam
- **Studies:**
 - CBC w/ Diff and BMP
 - 2 view ABD x-ray
 - GI film array PCR (stool)
- **Treatment:**
 - Rectal irrigations (by provider): 20mL/kg NS
 - PO challenge
- **Follow-up:**
 - Patient does well with treatment
 - Home: rectal irrigations 20mL/kg **BID** x 7 days
 - Antibiotics: Flagyl 10mg/kg/dose TID x 10 days
 - If stool culture positive for C. Diff switch antibiotic to Vancomycin 10mg/kg/dose 4 times a day for 10 days
 - If stool culture negative for pathogenic organism after 48 hrs - stop antibiotic
 - Follow up by phone 7 days
 - Review symptom checklist
 - Patient fails treatment **ADMIT**

Criteria for admission:

- **Diagnosis:**
 - 2+ moderate symptoms *and any of below symptoms*
 - Dehydration

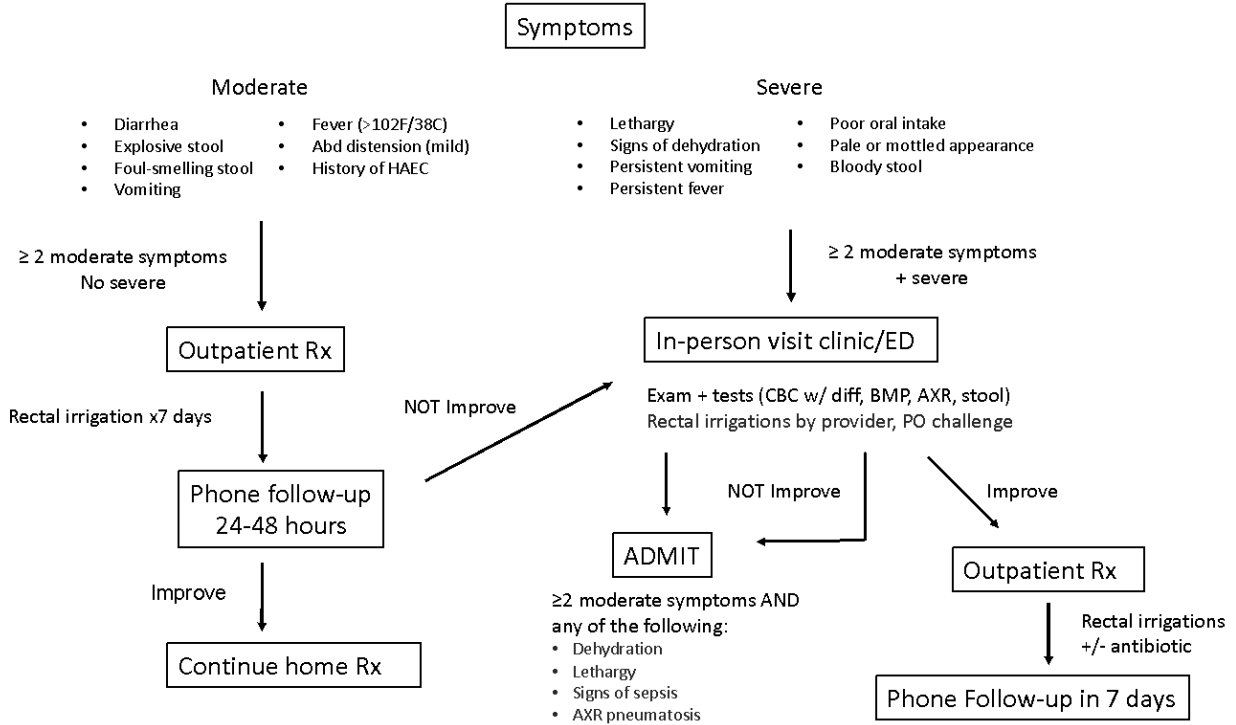
- Poor oral intake
 - Lethargy
 - Fails to improve in office/ED after irrigation or fails PO challenge
- **Studies:** (if not already obtained)
 - 2 view abd x-ray:
 - CBC w/ diff and BMP
 - GI film array PCR (stool)
- **Treatment:**
 - Rectal irrigations 20mL/kg NS **TID**
 - IV fluid hydration
 - Flagyl
 - May start with IV until tolerating PO
 - Continue if stool culture is positive
 - Consider broad spectrum antibiotics if needed
- **Discharge Criteria:**
 - Adequate PO intake
 - Tolerating PO antibiotics (as needed)
 - Symptom improvement
- **Discharge Treatment:**
 - Rectal irrigations 20mL/kg NS **BID** x 10 days total
 - Vancomycin 10mg/kg/dose 4 times a day for 10 days (as needed- if stool culture positive for C.Diff)
- **Follow up:**
 - Follow up by phone: end of treatment
 - Review symptom checklist
 - If ongoing symptoms clinic visit
 - If C. Diff positive at diagnosis retest stool culture when treatment complete

For Recurrent Enterocolitis

Definition: a return of symptoms/infection after a period of symptom resolution that generally occurs within eight weeks of the initial episode

- First Recurrence:
 - repeat regimen used for first episode
 - repeat rectal irrigations 20mL/kg NS BID x 10 days
 - Subsequent recurrence:
 - Repeat rectal irrigations 20mL/kg NS BID until resolution of symptoms (7-10 days)
 - Pulsed-tapered vancomycin (maximum dose: 125 mg):
 - 10 mg/kg orally 4 times daily for 10 to 14 days, followed by
 - 10 mg/kg orally twice daily for 7 days, followed by
 - 10 mg/kg orally once daily for 7 days, followed by
 - 10 mg/kg orally every other day for 7 days, followed by
 - 10 mg/kg orally every 3 days for 2 to 8 weeks
- Or
- Fidaxomicin (maximum dose: 200 mg):
 - Birth through 5 years: 16 mg/kg per dose orally twice daily for 10 days
 - ≥6 years: 200 mg per dose orally twice daily for 10 days

TRIAGE ALGORITHM



Resources:

Up To Date: Clostridioides (formerly Clostridium) difficile infection in children: Treatment and Outcomes. **Literature review current through:** Mar 2019. | **This topic last updated:** Feb 07, 2019