

Adult Appendicitis Management Pathway*

Exclusion criteria (consider ID consult):

- Neutropenia
- Active hematologic malignancy
- Solid organ transplant within 1 year or augmented immune suppression
- Other severe immunosuppression
- Known ESBL or multi-drug resistant organism carriage within 90 days
- Bacteremia
- Severe antibiotic allergies
- Severe disease (major peritoneal soilage, large/multiple abscesses, hemodynamic instability)

UCSF antibiotic alternatives for allergy/intolerance:
<https://idmp.ucsf.edu/content/inpatient-beta-lactam-allergy-guideline>

UCSF surgical prophylaxis guidelines:
https://idmp.ucsf.edu/sites/g/files/tksra4251/f/Surgical%20ppx%20guideline%20v1.2_update%204_2019.pdf

UCSF antibiotic dosing guidelines:
<https://idmp.ucsf.edu/adult-antimicrobial-dosing-non-dialysis>

Antibiotic Regimens		
Antibiotic	Standard dose	Peri-operative dosing (pre-incision & intra-operative)
Ceftriaxone	2g IV qday	2g IV q12hrs
Metronidazole	500mg IV/PO q12hrs*	500mg IV q12hrs
Piperacillin/Tazobactam	4.5g IV q8hrs#	4.5g IV q2hrs@
Ciprofloxacin	500mg PO q12hrs*^	N/A

In addition to the re-dosing intervals suggested, consider immediate re-dosing in patients who have > 1.5 L of blood loss (>25ml/kg or > 30% blood volume loss for patients < 40kg) within a short time frame

*Needs renal adjustment with CrCl <10 mL/min

#Extended infusion dosing - Loading dose: 4.5g IV over 30 min x1, then 4.5g IV infused over 4hrs every 8hrs (starting 4hrs after loading dose), needs renal adjustment for CrCl <20mL/min

@Q2hrs x 3 doses then resume standard dosing interval

^Dosing for oral stepdown/transition, needs renal adjustment for CrCl <30 mL/min

AAST Operative Grading	
Grade	Description
I	Acutely inflamed appendix, intact
II	Gangrenous appendix, intact
III	Perforated appendix with local contamination
IV	Perforated appendix with periappendiceal phlegmon or abscess
V	Perforated appendix with generalized peritonitis

Pre-op Orders:

- Antibiotics: Ceftriaxone, Metronidazole [If pregnant see RED box]
- Pain: Acetaminophen, Dilaudid

Appendicitis based on clinical diagnosis and/or imaging findings

ED:

- Ceftriaxone IV
- Metronidazole IV
- *If pregnant see RED box
- Mandatory surgical consult for any appendicitis dx

***Pregnant Patients:**

- All receive IV Piperacillin/Tazobactam while inpatient (if severe allergy call ID/ASP consult)
- Consult ID/ASP (clinical pharmacist) for oral therapy/discharge regimen, as needed

Acute simple/uncomplicated gangrenous (AAST G1-2)
 *if appendicolith proceed with operative management

Perforated (AAST G3-5)

Non-Operative Management

Operative Management

Delayed Operative Management

Discharge:
 Ciprofloxacin/metronidazole PO x 7 days total
 If pregnant see RED box
 *if recurrent symptoms proceed with operative management

Admission:
 Ceftriaxone/metronidazole IV --> ciprofloxacin/metronidazole PO x7 days total (IV+PO)
 If pregnant see RED box

Refer for outpatient follow-up +/- discussion of possible interval appendectomy +/- colonoscopy

Have patient void on call to OR or
 If foley placed, d/c at end of case
 Avoid drains if possible

- Give ceftriaxone IV before incision if >12h since last dose
- Ensure metronidazole IV was administered prior to OR; give if not received or >12h from last dose
- If pregnant:**
- Give piperacillin/tazobactam IV if >8h from last dose
- Re-dose subsequent intra-operative antibiotics based on re-dosing table

Simple/gangrenous/suppurative (AAST G1-2)

Document AAST grade in operative report

Perforated +/- phlegmon/abscess +/- generalized peritonitis (AAST G3-5)
 (consider leaving drain in OR)

IR drain placed?

Source control achieved?

Ceftriaxone/metronidazole IV --> ciprofloxacin/metronidazole PO x 4 days total from source control procedure (IV+PO)
 If pregnant see RED box

-Continue IV antibiotics
 -Consider inpatient ID consult for further antibiotic selection & duration
 -Establish primary surgeon to manage patient in ambulatory setting

For those with delayed operative management, refer for discussion of indications for interval appendectomy @ 4-6 weeks +/- colonoscopy

Pain Medicine Regimens			
Pain medicine	Standard dose	Pre-op dose x1	Discharge order/dose
Acetaminophen	1000mg IV/PO Q8hrs	1000mg PO	500mg tabs #100 1000mg PO Q8hrs
Ibuprofen*	600mg PO Q8hrs with meals	N/A	600mg tabs #42 600mg PO Q8hrs with meals
Ketorolac*	15-30mg IV q6-8hrs (if not tolerating PO)	N/A	N/A
Oxycodone	2.5 to 5mg PO Q3hrs PRN moderate pain not controlled by acetaminophen/ibuprofen	N/A	5mg tabs #10 max (can be less) 0.5 to 1 tab PO Q6hrs PRN moderate pain not controlled by acetaminophen/ibuprofen
Hydromorphone	0.2-0.5mg IV q3hrs PRN severe/breakthrough pain and/or if NPO	N/A	N/A

*Do not prescribe in patients with renal compromise eGFR <60

Post-op Orders:

- Pain: Acetaminophen, ibuprofen, oxycodone
- Regular diet
- SLIV
- OK to discharge same day if tolerating PO, pain controlled, voiding, ambulating

Discharge Pain Orders:
 Acetaminophen, Ibuprofen, Oxycodone

*Pathways are intended to assist with clinical decision-making for common situations but cannot replace personalized evaluation and management decisions based on individual patient factors