Empiric management of Intra-abdominal Infections (IAI)

Intra-abdominal infection (IAI) is a broad term encompassing several infectious processes, including peritonitis, diverticulitis, cholecystitis, cholangitis, and pancreatitis.
SOURCE CONTROL is the MOST IMPORTANT ASPECT of IAI management

DEFINITIONS:

Uncomplicated infection: contained within a single organ without anatomic disruption
Complicated infections extend beyond the source organ into the peritoneal space with spillage of microorganisms into normally sterile space
Mild-Moderate Severity: no severe organ dysfunction and **no** risk factors (see below) associated with IAI treatment failure
High Severity: severe physiologic disturbance or organ dysfunction, or presence of ≥ 1 of the following risk factors: advanced age, immunocompromised state, extensive co-morbidity

MOST COMMON BACTERIAL ORGANISMS

Community associated IAI*: E. Coli, Bacteroides* spp, Enterobacteriaceae, *Streptococcus* spp, *Clostridium* spp
IAIs with biliary tract involvement: Enterobacteriaceae, *Enterococcus* spp, *Klebsiella* spp
Healthcare associated IAI: Community IAI organisms **plus** Pseudomonas aeruginosa, *Enterococcus* spp

EMPIRIC TREATMENT

Community-Associated IAIs without biliary tract involvement	
Mild-moderate Severity *Eg: Peritonitis secondary to perforated appendix, perforated diverticulitis*	**Ceftriaxone 2 g IV q24H + Metronidazole 500 mg IV q8H**
High Severity	**Piperacillin-Tazobactam 4.5 g IV q8H** (extended infusion over 4h recommended)
With Biliary Tract involvement (ex. cholangitis, cholecystitis)	
Mild-Moderate Severity	**Ceftriaxone 2 g IV q24H + Ampicillin 1 g IV q6H**
High Severity	**Piperacillin-Tazobactam 4.5 g IV q8H** (extended infusion over 4h recommended)
Health Care Associated IAIs	
	Piperacillin-Tazobactam 4.5 g IV q8H (extended infusion over 4h recommended) If severe beta-lactam allergy: Meropenem 1 g IV q8H (consult ID)
Spontaneous Bacterial Peritonitis (SBP)	
SBP Treatment	**Ceftriaxone 2 g IV q24h x 5 days**
SBP Prophylaxis post GI bleed	**Ciprofloxacin 500 mg po BID x 7 days**

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DURATION

- Antimicrobial therapy of established infections should be limited to 4-7 days, unless it is difficult to achieve adequate source control.
- With adequate source control: antibiotics can be limited to 4 days after source control achieved
- Patients that do not respond fully to antimicrobial therapy within 5-7 days should be reassessed for a potential source control intervention

ADDITIONAL COMMENTS: Ultra-Short Duration of post-operative prophylaxis:

Limit antibiotic therapy duration to *24 hours* postoperatively in the following patient populations:

- Traumatic bowel perforations operated on within 12 hours
- Gastroduodenal perforations operated on within 24 hours
- Acute/gangrenous appendicitis without perforation
- Acute/gangrenous cholecystitis without perforation
- Ischemic, non-perforated bowel

Antibiotics are NOT recommended in the following situations:

- **To prevent infection in patients with severe or necrotizing pancreatitis**
- **Low-risk uncomplicated acute colonic diverticulitis**

REFERENCES

Solomkin, et al. Diagnosis and management of complicated intra-abdominal infection in adults and children: guidelines by the Surgical Infection Society and Infectious Diseases Society of America. Clinical Infectious Diseases 2010; 50:133-164.

Sawyer RG, et al. Trial of short-course antimicrobial therapy for intraabdominal infection. NEJM 2015; 372: 1996-2005.

Mazuski JE, et al. The Surgical Infection Society revised guidelines on the management of intra-abdominal infection. Surgical Infections 2017; 18: 1-76.

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