

Intra-Abdominal and Biliary Infections – General Principles

DEFINITIONS

- **Uncomplicated Intra-abdominal Infection:** Intra-abdominal infection involving the source organ only.
 - Acute diverticulitis that remains localized, without sizeable abscess or phlegmon, is typically considered an uncomplicated IAI as this is routinely managed without a source control procedure.
- **Complicated Intra-abdominal Infection:** Intra-abdominal infection that extends beyond the hollow viscus of origin into the peritoneal space and is associated with either abscess formation or peritonitis.
 - Common examples: Perforated peptic ulcer, perforated appendicitis, perforated diverticulitis, anastomotic leak, post-operative abscess, generalized peritonitis.
- **Community-acquired Infection:** No healthcare-associated infection criteria are present.
- **Healthcare-associated Infection** if any of the following are present:
 - Post-operative infection
 - Hospitalized for at least 48 hours during the previous 90 days
 - Residing in skilled nursing or long-term care facility in previous 30 days
 - Receiving IV therapy, wound care, renal replacement therapy, chemotherapy, or radiation therapy within preceding 30 days.

MICROBIOLOGY

- Core pathogens: *E. coli*, *Klebsiella pneumoniae*, viridans group *Streptococcus*
 - Anaerobes (e.g., *Bacteroides fragilis*) are core pathogens in intra-abdominal infections involving bowel, especially large bowel. Anaerobes are rare in biliary tract infections.
- Less common: *Enterococcus*, *Candida*
- Rare: MRSA, *Pseudomonas*
- Healthcare-associated infections involve similar core pathogens with increased consideration for *Enterococcus*, MRSA, resistant gram-negative bacilli (ESBL, CPO), and *Candida*.

SPECIFIC ORGANISMS

Enteric Gram-Negative Bacilli (e.g., *E. coli*, *Klebsiella pneumoniae*)

- **ESBL** (Extended spectrum beta-lactamase)
 - Empiric coverage of ESBL recommended in those with risk factors: prior ESBL colonization/infection, recent broad-spectrum antimicrobial therapy, or travel to ESBL endemic area in last 30 days.
- **CPO** (Carbapenemase-Producing Organisms).
 - Remain rare in FH. Consider if critically ill with recent antibiotic exposure while traveling in an endemic area (South Asia).
 - See “Sepsis – CPO Infections” for further guidance.

Enterococcus

- **Community-acquired infections**
 - Empiric coverage for Enterococcus is not necessary.
- **Healthcare-associated infections**
 - Empiric coverage of Enterococcus if: post-operative infection, recent cephalosporin use, immunocompromised, valvular heart disease, or prosthetic intravascular material.
 - VRE coverage is not recommended unless known VRE colonization.

MRSA

- **Community-acquired infections**
 - Empiric coverage of MRSA is not routinely indicated.
- **Healthcare-associated infections**
 - Empiric coverage of MRSA if: recent hospitalization or surgery, known MRSA colonization.

Candida

- **Community-acquired infections**
 - Empiric coverage of Candida not routinely indicated.

- Exception: Consider coverage for critically ill patients with upper GI source (esophageal, gastric, or duodenal perforation).
- Healthcare-associated infections
 - Empiric coverage of Candida if: upper GI source (esophageal, gastric, or duodenal perforation), recurrent bowel perforation, surgically treated pancreatitis, prolonged recent antibiotic exposure, or heavily colonized with Candida.