MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

TREATMENT OF OBSTETRIC/GYNECOLOGIC INFECTIONS

Clinical Setting	Empiric Therapy	Duration	Comments
Pelvic Inflammatory Disease (Endometritis, Salpingitis, Tubo-ovarian abscess, pelvic peritonitis) • *Neisseria gonorrhoeae* • *Chlamydia trachomatis* • Anaerobes • Enteric gram-negative rods • *Streptococcus agalactiae* • *Mycoplasma hominis* • *Ureaplasma urealyticum*	Empiric Regimen **Cefoxitin*** 2 g IV q6h **+ Doxycycline** 200 mg PO X 1, then 100 mg PO q12h Anaphylactic PCN/Cephalosporin Allergy **Clindamycin** 900 mg IV q8h **+ Gentamicin*** 5 mg/kg IV q24h + **Azithromycin** 2 g PO once Step Down Oral Therapy *With tubo-ovarian abscess:* **Doxycycline** 100 mg PO q12h **+ Clindamycin** 450 mg PO q6h OR **Metronidazole** 500 mg PO q8h *Without tubo-ovarian abscess:* **Doxycycline** 100 mg PO q12h	General: 14 days at minimum Parenteral therapy can be switched to oral therapy 24-48 hours after clinical improvement.	• In women with tubo-ovarian abscesses, at least 24 hours of inpatient observation is recommended. • Extended interval gentamicin dosing (5 mg/kg IV q24h) is preferred. Therapeutic drug monitoring may be necessary and dosing adjustments should be made with PharmD. • Duration of therapy should be a minimum of 14 days without drainage of tubo-ovarian abscess. Final duration should be dependent on resolution of the abscess on follow-up imaging studies. Some patients may require 4-6 weeks of antimicrobial therapy. • For *outpatient* management of mild-to-moderate PID: **Ceftriaxone** 250 mg IM x1 dose + **Doxycycline** 200 mg PO x1, then 100 mg PO q12h **+ Metronidazole** 500 mg PO q8h. Women who do not respond to IM/oral therapy within 72 hours should be reevaluated to confirm the diagnosis and should be given intravenous therapy
Post-operative intra-abdominal abscess or peritonitis after gynecologic surgery • Gram-negative bacilli (*E. coli*, ok*Klebsiella*, *Proteus*, *Pseudomonas, Enterobacter*) • Enteric gram-positive organisms (*Streptococcus, Enterococcus*)	Empiric Regimen: **Piperacillin-tazobactam***4.5 g IV q6h PCN Allergy without Anaphylaxis, Angioedema, or Urticaria **Cefepime*** 2 g IV q8h + **Metronidazole** 500 mg PO/IV q8h Consider the addition of vancomycin** for Enterococcus coverage in critically ill patients with non-life- threatening PCN allergy Anaphylactic Reaction to PCN **Vancomycin**** IV (see nomogram, AUC goal 400-600) + **Aztreonam*** 2 g IV q8h + **Metronidazole** 500 mg PO/IV q8h	General: 5-7 days Duration of therapy may be extended with inadequate source control or persistent clinical symptoms or signs of infection.	• Ampicillin/sulbactam is not recommended for use because of high rates of resistance among community- acquired *E. coli.* • Adjust antimicrobial coverage based on organism identification and antimicrobial susceptibilities. • *Enterococcus* coverage: Empiric antimicrobial coverage for vancomycin resistant enterococcus (VRE) is not recommended except in critically ill liver transplant recipients, patients with a previous history of VRE intra-abdominal infection, or patients with septic shock who are colonized with VRE. Linezolid 600 mg PO/IV q12h can be considered empirically but should be discontinued if VRE is not identified on blood culture. • MRSA coverage: Empiric MRSA antimicrobial coverage should only be provided to patients with post-operative peritonitis who are known to be colonized with MRSA and discontinued if MRSA is not recovered in culture

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Chorioamnionitis • Anaerobes • *Gardnerella vaginalis* • Group B streptococcus • *Clostridium spp.* • Enterobacteriaceae • *Chlamydia trachomatis* • *Mycoplasma* • *Ureaplasma* • *S. aureus*	Empiric Therapy **Ampicillin*** 2 g IV q6h **+ Gentamicin*** 5 mg/kg IV q24h Anaphylactic PCN/Cephalosporin Allergy **Clindamycin** 900 mg IV q8h **+** **Gentamicin*** 5 mg/kg IV q24h	Continue until patient is clinically improved and afebrile for 24-48 hours	• Therapeutic drug monitoring may be necessary and dosing adjustments should be made with PharmD. • Adjusted body weight is preferred if actual body weight is greater than ideal body weight. • Duration of antibiotic therapy should be extended in the setting of bacteremia (7-14 days total duration). • Please follow preoperative surgical antimicrobial prophylaxis for those undergoing cesarean delivery • Following cesarean delivery, please refer to "post-partum endometritis" empiric therapy recommendations for patients with suspected infection.
Chorioamnionitis with severe sepsis OR septic shock	Empiric Therapy **Piperacillin-tazobactam*** 4.5 g IV q6h + **Vancomycin**** IV (see nomogram, AUC goal 400-600) PCN allergy without anaphylaxis, angioedema, or urticaria **Cefepime*** 2 g IV q8h **+ Metronidazole** 500 mg PO/IV q8h **+ Vancomycin**** IV (see nomogram, AUC goal 400-600) Anaphylactic PCN/Cephalosporin allergy **Vancomycin**** IV (see nomogram, AUC goal 400-600) + **Aztreonam*** 2 g IV q8h + **Metronidazole** 500 mg PO/IV q8h	**Sepsis w/o bacteremia:** 7-14 days, can step-down to oral therapy when stable (see comment) **Sepsis with gram-negative bacteremia:** 7-14 days from first negative blood culture with IV antibiotics or oral quinolone if susceptible	• Oral therapy is not recommended in setting of *S. aureus* or Enterococcal bacteremia • Aztreonam does not have gram-positive activity and should be used in combination with vancomycin. • If uterine abscess present, duration of therapy may be extended. • MRSA is not a common pathogen and thus addition of vancomycin is only recommended in patients with severe sepsis or septic shock. Vancomycin should be discontinued if MRSA is not isolated once patient is stable. • Please follow preoperative surgical antimicrobial prophylaxis for those undergoing cesarean delivery • Following cesarean delivery, please refer to "post-partum endometritis" empiric therapy recommendations for patients with suspected infection.

Clinical Setting	Empiric Therapy	Duration	Comments
Obstetrical Infections (Post-partum Endometritis) • Anaerobes • *Gardnerella vaginalis* • Group B streptococcus • *Clostridium spp.* • Enterobacteriaceae • *Chlamydia trachomatis*	Empiric Therapy **Cefazolin*** 2 g IV q8h + **Metronidazole** 500 mg PO/IV q8h Anaphylactic PCN/Cephalosporin Allergy **Clindamycin** 900 mg IV q8h **+** **Gentamicin*** 5 mg/kg IV q24h Severe Sepsis OR Septic Shock OR Persistent fevers for 48 hours after starting above therapy **Piperacillin-tazobactam*** 4.5 g IV q6h + **Vancomycin**** IV (see nomogram, AUC goal 400-600)	Continue until patient has clinically improved and afebrile for 24-48 hours.	• Extended interval gentamicin dosing (5 mg/kg IV q24h) is preferred. Therapeutic drug monitoring may be necessary and dosing adjustments should be made with PharmD. • Duration of antibiotic therapy should be extended in the setting of bacteremia (7-14 days total duration). • MRSA is not a common pathogen and thus addition of vancomycin is only recommended in patients with severe sepsis, septic shock, or those with persistent fevers. Vancomycin should be discontinued if MRSA is not isolated once patient is stable.

*Dose may need to be adjusted for renal dysfunction

** For ADULTS: Dose per vancomycin nomogram

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