VANDERBILT UNIVERSITY MEDICAL CENTER

DIVISION OF ACUTE CARE SURGERY

GUIDELINE FOR THE EVALUATION, DIAGNOSIS, AND EMPERIC TREATMENT OF INFECTION

Temp >38.5° for > 4hrs AND >24hrs post-admission/post-op
(IF evidence of organ dysfunction, it is permissible to begin immediate work-up)

INVESTIGATE SUSPECTED SOURCE FIRST

PULMONARY SOURCE

New, persistent, or progressive infiltrate
PLUS
any TWO of the following:

- Purulent secretions
- Decline in pulmonary status such as:
  - worsening hypoxemia
  - ventilator compliance
  - elevated inspiratory pressures
- Fever (>38.5)
- Unexplained leukocytosis
- New onset delirium

ETT or Tracheostomy

- **YES** → Perform bronchoscopy w/ BAL
- **NO** → Obtain tracheal aspirate

- Start empiric pneumonia antibiotics per current guidelines
- Consider size of airway and ability to tolerate procedure
- If patient unable to tolerate bronchoscopy, obtain TA

Adjust/De-escalate therapy per culture and sensitivity:
≥ 10^4 CFU/mL → narrow spectrum x 7 days (total)
≤ 10^4 CFU/mL → discontinue antibiotics

SUSPECTED CENTRAL LINE

Central line >72h w/purulence at site

- **YES** → D/C CVC and replace at new site if indicated
- **NO** → STOP

Blood cultures should only be obtained when other potential sources have been ruled out

SUSPECTED UTI

Does patient have **one** of the following:
(unless signs of sepsis)

- Fever >38.5
- Rigors
- Hypotension (unrelated to meds)
- New urinary frequency, urgency, dysuria
- Suprapubic pain
- Flank pain
- Altered mental status (unexplained by other causes or injury)

YES → Obtain Urinalysis with Reflexive Culture

- **> 10 WBC or + Nitrites*** (Invalid if >5 squamous epithelial cells - repeat UA)
  - **COMPLICATED****
    Ceftriaxone 1 gm IV Q24h x 7d
    OR
    Levofloxacin 750mg IV/PO daily x 5d
  - **UNCOMPLICATED**
    Nitrofurantoin 100 mg PO BID x 5d
    Alternative Agents
    TMP-SMX DS PO BID x 3d
    Cefdinir 300 mg PO BID x 5-7d
- **< 10 WBC and - Nitrites** → Investigate other source

NO → STOP — No urinalysis or urine culture indicated; investigate other source

If culture negative or <100,000cfu/ml, discontinue antibiotics.

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**Characteristics of Complicated UTI

Male	Ureteral obstruction
Neurogenic bladder	Kidney failure
Polycystic kidneys	Immunocompromised
Suprapubic catheter	Nephrostomy tube
Indwelling catheter	Ureteral stent
Pregnancy	

^Includes patients with UTI symptoms whose foley was removed w/in last 48 hours.

Antibiotic notes:

- Nitrofurantoin should not be used if CrCl < 30 mL/min.
- Adjust TMP-SMX to SS tablet if CrCl < 30 mL/min. Not for dialysis patients.
- Decrease cefdinir to 300 mg daily if CrCl < 30 mL/min.
- Reduce levofloxacin dose to 750 mg q 48h if CrCl < 50 mL/min.

OTHER SOURCES

Infectious Considerations

- Delayed abdominal source
- Sinusitis (max-face CT)
- Wound exam
- Rectal exam
- C-diff (if diarrhea & leukocytosis present)
- Source control (of known infection)
- Consider new radiologic imaging
- Acalculous cholecystitis

Non-infectious Considerations

- Sympathetic storm
- Delirium tremens
- VTE
- Phlebitis
- Pancreatitis
- Drug fever
- NMS
- Malignant hyperthermia

Empiric Antibiotic Regimens

Community Acquired PNA (HD 1-3days)

- **Ceftriaxone (Rocephin®)**
  - 2 gm q24h
  - No adjustment needed in renal dysfunction

Hospital Acquired PNA (HD ≥ 4days), Bloodstream Infection, or Surgical Site Infection

- **Vancomycin**
  - Use Epic vancomycin advisor for dosing recommendations
- **Cefepime (Maxipime®)**
  - CrCl > 60 – 2g q8h
  - CrCl 30-60 – 1g q8h
  - CrCl 11-29 – 1g q12h
  - CrCl < 11 or HD – 1g q24h
  - CRRT – 1g q8h

Intrabdominal Infections

- **Piperacillin/Tazobactam (Zosyn®) – *Infuse ALL doses over 4 hours***
  - CrCl > 20 – 3.375gm q8h
  - CrCl ≤ 20 – 3.375gm q12h
  - Hemodialysis – 3.375gm q12h
  - CRRT – 3.375gm q8h
- **Vancomycin** [if gram positive coverage needed]
  - Use Epic vancomycin advisor for dosing recommendations
- **Fluconazole (Diflucan®)** [if antifungal coverage needed]
  - CrCl ≥ 50 – 800 mg x 1, 400 mg q24h (400mg Q24h if CRRT)
  - CrCl < 50 – 400 mg x 1, 200 mg q24h

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