Skin & Soft Tissue Infection

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated Cellulitis OR Diabetic Foot Infection</td>
<td>MRA: PO - Bacitracin 1-2 DS tabs, OR Doxycycline 100mg, OR Clindamycin 600mg IV - Vancomycin 15-20mg/kg</td>
</tr>
<tr>
<td>Pusulent = S. aureus</td>
<td>MSSA: PO - Dicloxacillin 500mg, OR Cephalexin 500mg, OR Amoxiclav 500-875/125mg IV - Cefazolin 1-2g</td>
</tr>
<tr>
<td>Non-pusulent, streaky/diffuse = Strep</td>
<td>Strep: PO - Cephalexin 500mg, OR Amoxicillin 500mg, OR Cefazolin 1-2g OR Ampicillin/sublactam 1.5-3g (if anaerobic coverage needed)</td>
</tr>
</tbody>
</table>

*Note high local MRSA prevalence

Severe Soft Tissue OR Complicated Diabetic Foot Infection (Limb threatening, h/o MDRO or prior abx, toxic appearance)

- Vancomycin 15-20mg/kg IV + Piperacillin/tazobactam 2.25-4.5g IV

Suspect Necrotizing Infection (Call Surgery/ID consult, add Clindamycin 900mg IV to severe regimen (refine later based on cultures))

Clostridium difficile Infection (CDI)

Obtain CBC, BMP, abdominal Xray or CT if ileus, stool C.diff, STOP unnecessary PPI, antibiotics, laxatives; Surgery/GI/ID consult recommended for severe or fulminant disease

First episode: PO Vancomycin 125mg Q6h (mild to moderate disease)

- Severe disease: age >60, Temp > 101 F, WBC count >15K, J /HCO3-, AKI, extensive colitis on CT, SBO/distension or ileus, albumin <2.5mg/dL; add IV Metronidazole 500mg q8h and consider higher dose of PO Vancomycin

Fulminant disease: (ileus, hypotension, multi-organ failure, megacolon, ICU status); PO vancomycin 500mg, PR vancomycin 500mg, IV metronidazole 500mg q8h

Intra-abdominal Infection (non-CDI):

Community acquired: Ceftriaxone IV 1g + Metronidazole 500mg IV/PO, OR Cefotaxin 1-2g IV/PO +/- Metronidazole 500mg IV/PO, OR Ciprofloxacin 400mg IV/500mg PO + Metronidazole 500mg IV/PO (severe PCN allergy)

Risk for MRDRO: Piperacillin/tazobactam 2.25-4.5g IV (Aztreonam IV + Metronidazole IV/PO if severe PCN allergy)

Osteomyelitis

Obtain CRP, ESR with routine labs, Xray (or MRI if inconclusive), OR cultures if possible (wound cultures may not be accurate); DM associated = polymicrobial

Mild to moderate: Vancomycin 15-20mg/kg (if prior MRSA or excess abx exposure) IV + Ceftriaxone 2g OR Ampicillin/sublactam 1.5-3g IV

Sepsis OR Suspect P. aeruginosa (i.e. foot puncture wound, water exposure, excess abx, past Pseudomonas): Piperacillin/tazobactam 2.25-4.5g IV OR Cefepime 1-2g IV +/- Vancomycin 15-20mg/kg IV (if high MRSA risk)

Urinary Tract Infection

Change Foley, obtain UA/UOx, U/S of kidneys if suspect pyelitis or obstruction, BCx if febrile

Cystitis: Cephalexin 500mg PO, OR TMP/SMX 1 DS tab PO, OR Nitrofurantoin 100mg PO (for CRCl >30ml/min), Ceftriaxone 1g IV, OR Ciprofloxacin 500mg PO (severe PCN and sulfa allergy)

Complicated UTI/pyelonephritis (without h/o MDRO): Ceftriaxone 1g IV

Severe Illness OR h/o MDRO: Cefepime 1-2g IV +/- Gentamicin 3mg/kg IV IBW x 1

Anaphylaxis to Penicillin: Gentamicin 3mg/kg IV IBW, OR Azevramin 1-2g IV, OR Ciprofloxacin 400mg IV (if from home ONLY)

Catheter-associated Bloodstream Infection

Send at least 2 sets of blood cultures (citruln line and peripheral blood), remove line and send tip for culture

Treatment

IV Vancomycin 15-20mg/kg + Cefepime 1-2g +/- Gentamicin 5-7mg/kg IBW x 1 (if cephalosporin or h/o MDRO);

If HD OR severe PCN allergy: IV Vancomycin 15-20mg/kg + Gentamicin 5-7mg/kg IBW x 1

*If endocarditis suspected remove line and consult ID!

Colonization vs. True Infection

Colonization may predispose to infection, but does NOT always indicate active infection:

- Is the patient symptomatic with signs of infection? (ex. dysuria, purulent sputum, fever, leukocytosis)
- Are symptoms persistent > 24 hours?
- Is this a condition that may not require treatment or only a short course of abx? (ex. tracheitis, aspiration pneumonitis)
- Do radiographs support the presence of infection?
- Is there pyuria with bacteriuria, even after catheter is changed?
- Is there a single dominant organism on urine culture with many WBC and low epithelial cells?
- Are antibiotics alone likely to cure the infection?
- Can always call ID for assistance

Antimicrobial Stewardship Program

Empiric Guide for Antibiotic Initiation, Adult Inpatients

Wakefield Campus

Notes:

- This is not intended to replace clinical judgment
- ID assistance recommended for severely compromised hosts, pregnancy, organ transplant, etc.
- Dose and frequency may depend on renal function and weight (e.g. IV vancomycin, gentamicin, acyclovir, SMX/TMP, etc.)

- Always send 8-10cc/ blood cv bottle
- Look at prior micro results to help guide you
- MDRO = multidrug resistant organism
- PCN = penicillin
- Recommendations may be amended for drug shortages

Clarifying an Allergy

Non-IgE mediated penicillin reaction: non-urticarial rash, injection site reaction, unknown/remote reaction (hard to forget anaphylaxis!)

IgE mediated/immediate hypersensitivity reaction: (requires prior drug exposure) urticarial rash, dyspnea, hoarseness, bronchospasm, facial/tongue swelling, anaphylaxis

- Loss of IgE occurs each decade
- PCN-cephalosporin cross reactivity rate: ≤ 5%; benefit of cephalosporin may outweigh risk
- Take opportunity to challenge while in monitored setting; look back at administered meds from prior admits to see if β-lactam even given
**Ceftriaxone ( allergy)**

875

Mild:

1) COPD Exacerbation

20mg/kg

20mg/kg

Azithromycin 500mg IV + PCN

Hospitalized, non severe Ceftriaxone 1g +

Mild cases can be treated like CAP; severe cases should be treated as HAP/VAP

ATL-DSAS Risk Factors for MDROs (use as a guide; not all patients require broad spectrum ab

I V antibiotic use within 90 days

C/O: Current inpatient stay at least 5 days

Septic shock or ARDS at time of VAP

Acute renal replacement therapy prior to VAP

Mild Disease/Limited Healthcare Exposure (less sick patients)

Ceftriaxone 1g +/- Vancomycin 15-20mg/kg IV

Severe Disease/VAP

Vancomycin 15-20mg/kg IV + either Cefepime 1-2g IV

OR Piperacillin/tazobactam 2.25-4.5g IV; add Gentamicin 5-7mg/kg IV /BW to either regimen for severe sepsis or h/o MDRO

Anaphylaxis to Penicillin: Vancomycin 15-20mg/kg IV + either Aztreonam 1-2g IV OR Ciprofloxacin 400mg IV; add Gentamicin 5-7mg/kg IV /BW to either regimen for severe sepsis or h/o MDRO

Meningitis/Encephalitis

Obtain LP, blood cultures, CT/MRI; ID consult recommended

Meningitis:

Age <60 AND normal host immunity: Vancomycin 15-20mg/kg IV + Ceftriaxone 2g IV

Age >60 OR Immunosuppressed: Vancomycin 15-20mg/kg IV + Ceftriaxone 2g IV + Ampicillin 2g IV

Suspect HSV Encephalitis:

Aycyclovir 10 mg/kg IV based on IBW (max 800mg)

Anaphylaxis to Penicillin:

Vancomycin 15-20mg/kg x IV + [Levofloxacin 750mg IV or Ciprofloxacin 400mg IV] – ID consult recommended

**Antibiotic Durations**

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Duration</th>
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<tbody>
<tr>
<td>COPD exacerbation, meets criteria for antibiotics</td>
<td>3-5 days</td>
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<tr>
<td>CAP</td>
<td>5-7 days</td>
</tr>
<tr>
<td>Complicated CAP (empyema, bacteremic, S. aureus PNA, abscess, Legionella)</td>
<td>Duration variable up to several weeks (ID consult recommended); 7-21 days for Legionella based on severity</td>
</tr>
<tr>
<td>HAP/VAP (empiric treatment OR isolation of specific pathogen such as MRSA, Pseudomonas, MDRO, etc.) [See IDSA/ATS 2016 HAP/VAP guidelines for details]</td>
<td>Approximately 7 days (ID input suggested for complicated cases or if double coverage is being considered)</td>
</tr>
<tr>
<td>Bacterial Meningitis</td>
<td>7-21 days depending on organism isolated (ID consult recommended)</td>
</tr>
<tr>
<td>HSV Encephalitis</td>
<td>14-21 days (ID consult recommended)</td>
</tr>
<tr>
<td>Catheter-related bloodstream infection (catheter removal recommended for source control) For Staph aureus, Pseudomonas, Yeast, and/or recurrent bacteremias – ID consult recommended</td>
<td></td>
</tr>
<tr>
<td>CoNS: 5-7 days if transient S. aureus: up to 4-6 weeks GNB (not Pseudomonas): 7-14 days if neg BCx and source controlled Candida spp.: at least 14 days from first neg BCx</td>
<td></td>
</tr>
<tr>
<td>Influenza</td>
<td>Oseltamivir 5 days; up to 7-10 days only if critically ill</td>
</tr>
<tr>
<td>Uncomplicated UTI Pyelonephritis/complex UTI</td>
<td>3-5 days</td>
</tr>
<tr>
<td>Intra-abdominal source</td>
<td>7-10 days; ≥14 days if abscess (ID consult rec.)</td>
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<tr>
<td>Skin and Soft Tissue (if discrete lesion drained, often no further abx needed)</td>
<td></td>
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<tr>
<td>Pathogen/case specific; 5 or ≥ 14 days if systemic illness; deep infection, non-healing, unusual pathogen, compromised host – ID and Surgery input suggested</td>
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<tr>
<td>C. difficile colitis</td>
<td>Initial episode &amp; 1st recurrence: 10 days 2nd recurrence: PO Vancomycin x 14 days, then taper over several weeks – see ASP homepage for details</td>
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<tr>
<td>Osteomyelitis</td>
<td>4-6 weeks; ID consult and OPAT referral recommended</td>
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