Treatment of Cellulitis/Skin Infection

(NB Provincial Health Authorities Anti-Infective Stewardship Committee, September 2017)

Cellulitis/Erysipelas Severity	Preferred Empiric Regimens	Duration of Therapy	Comments
Mild (no signs of systemic toxicity) - Assess for risk factors[1] or clinical evidence of MRSA (e.g. purulent boil with spreading cellulitis, previous MRSA infections or colonization)	cephalexin 500 - 1000 mg PO q6h[2] **OR** cefadroxil 500 - 1000 mg PO q12h[2,3] **True immediate allergy**[4] to a beta-lactam at risk of cross-reactivity with cephalexin or cefadroxil: cefuroxime 500 mg PO q8-12h[2] **Severe delayed reaction**[5] to a beta-lactam where their future use is not recommended: clindamycin 300 - 450 mg PO q6h MRSA Suspected: sulfamethoxazole/trimethoprim 800/160 mg to 1600/320 mg (1 or 2 DS tablets) PO q12h[2,6] **OR** doxycycline 100 mg PO q12h[6]	5 days (may extend duration if not improved)	Work-up: None, unless there is an associated fluctuant pustule that can be drained and sent for culture
Moderate (signs of systemic toxicity) **OR** Progression on oral therapy[7]	ceFAZolin 2 g IV q8h[2] Alternative for outpatient management: probenecid 1 g PO followed 30 - 60 min later by ceFAZolin 2 g IV, repeated q24h[2] **OR** cefTRIAXone 2 g IV q24h **Severe delayed reaction**[5] where future use of β-lactams not recommended: clindamycin 600-900 mg IV q8h MRSA suspected, add: vancomycin 25 to 30 mg/kg IV x 1 dose then 15 mg/kg IV q8-12h[2] (adjust based on levels to a trough target of 15 - 20 mg/L)	5 days (may extend duration if not improved) If on IV therapy assess every 48 hours for appropriateness for IV to PO conversion[8] (see PO options available under mild severity)	Work-up: As above plus: Consider blood cultures (2 sets)
Severe (sepsis syndrome, Necrotizing Fasciitis [clinical features of NF include systemic toxicity, deep severe pain – more severe than expected for skin findings, violaceous bullae, rapid spread along fascial planes, gas in soft tissues])	ceFAZolin 2 g IV q8h **with or without** clindamycin 900 mg IV q8h Risk of mixed bacterial infection: piperacillin-tazobactam 3.375 g IV q6h[2] **with or without** clindamycin 900 mg IV q8h MRSA suspected, add: vancomycin 25 to 30 mg/kg IV x 1 dose then 15 mg/kg IV q8-12h[2] (adjust based on levels to a trough target of 15 - 20 mg/L)	Consult with specialists	Work-up: As above plus: urgent surgical assessment for diagnostic biopsy and/or debridement

Clinical pearls:

- These guidelines are for basic skin infections only, any complicating features on history may require alternative management (Specific but not exclusive examples include: immunocompromised patients, diabetic foot infections, cellulitis associated with a surgical site, trauma or animal/human bites)
- Consider looking for predisposing feature (e.g. Tinea pedis) as source of cellulitis

[1] Risk factors for MRSA infection include: known or previous colonization, recent hospitalization, homelessness, injection drug use, member of First Nations community and incarcerated person

[2] Dose adjustment required in renal impairment

[3] Non-formulary agent not available within hospital

[4] True, immediate IgE-mediated allergies include, but are not limited to: anaphylaxis, urticaria, angioedema, hypotension, bronchospasm, stridor, and pruritis.

[5] Stevens-Johnson syndrome, toxic epidermal necrolysis, immune hepatitis, DRESS, serum sickness, hemolytic anemia or interstitial nephritis

[6] Poor coverage for beta-hemolytic streptococci, consider combining with cephalexin or cefadroxil

[7] Assessment of clinical response within 48 hours should be based on pain and fever; **mild progression of erythema expected during this timeframe**

[8] IV to PO conversion appropriate when patient: afebrile, hemodynamically stable, clinically improving, and able to tolerate oral intake (see IV to PO conversion policy for more details)

References:

1. Antibiotic Review Subcommittee of the Pharmacy & Therapeutics Committee. (2008). Update infectious disease: Community-acquired methicillin-resistant staphylococcus aureus (CA-MRSA). Skin & soft tissue infections (SSTI): Overview and Management. Vancouver Island, BC: Vancouver Health Authority.
2. Liu, S., Bayer, A., Cosgrove,S., Daum,S., Fridkin,S., Gorwitz,J., … Chambers, H. (2011). Clinical practice guidelines by the infectious diseases society of America for the treatment of methicillin-resistant staphylococcus aureas infections in adults and children. Clinical Infectious Diseases, 52(1 February), 1-17.
3. Stevens, D., Bisne, A., Chambers, H., Everett, E., Dellinger, P., Goldstein, E. … Wade, J. (2014). Practice guidelines for the diagnosis and management of skin and soft-tissue infections. Clinical Infectious Disease,41 (15, November), 1373-1406.
4. Mount Sinai Hospital and University Health Network Anitmicrobial Stewardship Program. (2011). Skin and skin structure infections (SSSI). Toronto, ON: Author.