OPTIMISTIC
TRANSFORMING CARE

OPTIMISTIC Skin and Soft Tissue Infection Protocol

Recommendations for Provider

Provider notified of change in condition and you suspect cellulitis.

Skin Infection New or Worsening Signs & Symptoms

Symptoms: tenderness, erythema, warmth, swelling

Severity of Infection:

- **Mild**: localized or no sign of systemic infection
- **Moderate**: any signs of systemic infection
- **Severe**: signs of systemic infection with any SIRS criteria OR immunocompromised who have failed oral antibiotics OR signs of deeper infection such as bullae, skin sloughing, hypotension, organ dysfunction.

Differential Diagnosis

- Lymphedema
- Necrotizing fasciitis
- Impetigo
- Insect bite
- Venous Stasis
- Osteomyelitis
- Pyoderma gangrenosum
- Zoster
- Fungal infection

Tests to Consider

- CBC
- BMP
- CRP
- Blood cultures
- ESR

Certify for OPTIMISTIC enhanced billing using CMS criteria (see back)

Initiate monitoring orders: vital signs 3 times daily throughout diagnosis and treatment periods, with daily nursing assessments.

General Treatment

- Antibiotic dosage/frequency may need to be adjusted for creatinine clearance
- If able, elevate affected area
- Treat predisposing factors
  - Edema
  - Underlying cutaneous disorders
  - Fissures, scaling, maceration

Purulent/ Abscess

Mild: Incision and drainage

-Note: This does not meet CMS enhanced billing criteria

Moderate: I&D with culture —> empiric treatment targeting MRSA (TMP-SMX DS (1-2DS PO BID) OR doxycycline (100mg PO BID)

Severe: Consider hospitalization, may need surgical debridement

- I&D with culture —> empiric treatment targeting MRSA (vancomycin 30mg/kg/day in 2 divided doses), OR daptomycin (4mg/kg/Q24H), OR linezolid (600mg IV/PO Q12H)

Nonpurulent

Mild: Oral cephalosporin cephalexin (500mg PO Q6H), OR clindamycin (300mg PO Q6H)

Moderate: ceftriaxone (1g IV/IM Q24H), OR cefazolin (1g IV Q8H), OR clindamycin (600mg IV Q8H OR 300-400mg PO 4 x daily)

Severe: Consider hospitalization, may need surgical debridement

- Empiric treatment with vancomycin (30 mg/kg/d divided into 2 doses) PLUS piperacillin/tazobactam (3.375-4.5G IV Q6H)

Common Pathogens

- Mild: likely streptococci
- Moderate: MSSA and/or strep
- Severe: MRSA, MSSA, strep, other
- Purulent/Abscess: MRSA

If patient improves within 48 hours, continue treatment for 5 days. If patient does NOT improve, reassess source of infection, change antibiotic therapy or transfer to hospital if severely ill.

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Recommendations for Provider

Special Considerations

- Principles of effective antibiotic treatment and antibiotic stewardship:
  - Use the highest safe dose
  - Prescribe for the shortest reasonable duration, generally 5-7 days
  - Use narrow spectrum antibiotics based on likely pathogens
- When appropriate, convert IM to PO regimen for patient comfort.
- Facial Cellulitis: more common in adults over 50
- For infection associated with human or dog bite, puncture wound, or laceration, consider expanding evaluations and differential diagnosis.
- Review patient's goals of care including POST form and hospitalization preferences.

Antibiotics Renal Dosing Adjustments

- Cefazolin < 55 ml/min
- Cephalexine < 30 ml/min
- Daptomycin < 30 ml/min
- Piperacillin/Tazobactam < 40 ml/min
- Vancomycin (see dosing box below)

* Note: You will need to make dose adjustments at the levels of creatinine clearance listed above. If antibiotic not on list, there are no dosage adjustments provided in the manufacturer's labeling.

CMS Certification Criteria for Skin and Soft Tissue Infection

Skin Infection (up to 7 days)	☐ Infection with **new** onset of warm and/or erythematous and/or swollen/indurated skin requiring oral or parenteral antibiotic therapy or antiviral therapy. ☐ If associated with an existing skin ulcer or wound, there is an acute worsening with **new** signs of infection such as purulence, exudate, and/or induration. **AND One or more of the following:** ☐ Fever ≥ 100º F (oral) or two degrees above baseline ☐ White blood cell count ≥ 12,000

Vancomycin Dosing

- Why a loading dose? A single loading dose of 20 mg-30 mg /kg (based on actual body weight) can facilitate a more rapid attainment of target trough serum vancomycin concentration.
- Give loading dose x 1, maintenance dose should follow at suggested intervals below
- Maximum initial dose = 2000 mg

Cockcroft-Gault CrCl (min/ml)	Dose	Comments
> 60	15 mg/kg every 12 hours (30 mg/kg/day)	- Use actual body weight - Round to nearest 250 mg - Morbidly obese may need higher doses - Obtain trough levels (within 30 minutes before next dose) with the fourth dose of a new regimen (3rd dose for patients with dosing intervals > 24 hours) - Serum creatinine should be checked every 1-3 days - Vancomycin should be infused over 30 minutes for each 500 mg increment (e.g., 500 mg over 30 minutes, 1000 mg over 1 hour)
30 – 59	15 mg/kg every 24 hours	
16 – 29	15 mg/kg every 48 hours	
≤ 15	Give 1 dose(15 mg/kg); redose when level below recommended trough	

— Target Vancomycin trough level is 10 – 15 mcg for mild-to-moderate infection

— Target Vancomycin trough level is 15– 20 mcg for mild-to-moderate infection

These are recommendations from expert consensus and an extensive literature review, including the AMDA Clinical Practice Guidelines. In practice, use your clinical judgements for individual patient care.

http://optimistic-care.org/ The OPTIMISTIC Project is a long term care quality initiative of the Indiana University Center for Aging Research, Regenstrief Institute and Division of General Internal Medicine and Geriatrics and the University of Indianapolis Center for Aging & Community. Funding is provided through the Centers for Medicare and Medicaid Services. Copyright © 2018 The Trustees of Indiana University. *Version 1.1*