Silver Chain

CLINICAL PROTOCOL FOR CELLULITIS

SCOPE: Western Australia

ACCEPTANCE TO HATH CRITERIA AND PATHWAY

RED Unsuitable for community admission to HATH Refer to ED/ Inpatient management (May become suitable for HATH after inpatient stabilisation)	• Rapidly progressive soft tissue infection, skin necrosis or impending septic shock (fever >38.5°C, Systolic BP<90mmHg, HR>100/min) • Uncontrolled pain. • Necrotic changes to skin or other signs of acute vascular insufficiency. • Suspected bone or joint involvement. • Co-existing medical conditions requiring hospital admission or likely to affect compliance. • Suspected or confirmed immediate penicillin allergy or hypersensitivity (eg anaphylaxis, angioedema and/or urticaria) or cephalosporin hypersensitivity. • Clinical suspicion or laboratory confirmation of multi-resistant organisms (ie previous infection or colonisation with Methicillin Resistant Staphylococcus Aureus [MRSA]). • Pregnancy beyond 22 weeks gestation unless under the care of an Obstetrician.

ORANGE
Require discussion with Medical Governor and/or Infectious Diseases Physician prior to acceptance
	• Suspected abscess or bursitis.
	• Immunocompromised.
	• Diabetic foot ulcer.
	• Cellulitis post:
	  ◦ Specific marine exposure
	  ◦ Human or animal bite
	  ◦ Burns
	• Cellulitis involving:
	  ◦ Face, neck or perineum.
	  ◦ Chronic ulcers (may require investigation for underlying bone involvement and/or vascular insufficiency)
	  ◦ Both legs.
	  ◦ Hands.
	  ◦ Surgical wound.
	• Aged between 13 and 18, suitable for adult dosing who are not under the care of a paediatrician.

GREEN
Accepted for HATH cellulitis protocol
	All criteria must be met:
	
	• Client's medical condition has been assessed as stable, has a clear diagnosis/prognosis and is at low risk of deterioration.
	• Intravenous antibiotics deemed as the only appropriate choice or patient unable to take oral medication.
	• Required pathology has been collected:
	  ◦ FBC, U+E, LFT, CRP, BSL,
	  ◦ Wound swab (if discharging wound)
	  ◦ Blood Culture (if fever 38.5 or over)
	• Adults 18 years or over.

PATHOLOGY WORK UP

Verify if any recent pathology has been ordered prior to requesting the below:

- Blood cultures if temp ≥ 38.5°C.
- Urea and electrolytes, full blood picture, liver function, and blood glucose level.
- Wound swab if open wound or purulent discharge.
- For cellulitis complicating chronic ulcers, consider imaging to investigate for underlying osteomyelitis and vascular insufficiency, the role of advanced wound care (nonsurgical/surgical debridement) and optimisation of vascular supply.
- If microbiology investigations indicate organism other than *Streptococcus pyogenes* or Methicillin Sensitive *Staphylococcus aureus*, consult an Infectious Diseases Physician.

GENERAL MANAGEMENT

- Access pathology results from referral source and if necessary organise blood cultures, wound swab and full blood picture.
- Collaborate with medical governance doctor regarding abnormal pathology results.
- Initiate intravenous access and commence intravenous therapy as prescribed.
- Nursing assessment as per Limb Assessment Tool.
- Nursing care as per Clinical Pathway – Cellulitis.
- Arrange review by medical governance doctor as soon as practicable.
- Advise client to rest with limb elevated.
- Advise client on the use of oral Probenecid if prescribed.
- Advise client on the use of oral analgesia/antipyretic medication as directed.
- Monitor and advise client on psychological wellbeing and refer to other agencies if evidence of de-compensating mental health.

MONITORING

Clinical improvement (resolution of fever, improvement in soft tissue erythema and pain) – start oral therapy.

Clinical deterioration (see below) – discuss with medical governor and consider hospital transfer.

Indicators for urgent medical re-assesement or hospital admission:

- Persistent fever > 37.8 after 72 hours of IV antibiotic therapy
- Tachycardia, HR > 100/min
- Hypotension (systolic BP < 90, and/or diastolic BP <60)
- Extension of skin erythema or development of skin necrosis
- Increasing pain uncontrolled by prescribed analgesia.

INTRAVENOUS THERAPY AT HOME

Cephazolin 2 grams IV once daily plus Probenecid 1g orally daily. 500mg BD may be used if nauseated.

For clients unsuitable for oral Probenecid: Cephazolin 2 grams IV twelve hourly (see below).
The following situations may require discussion with an Infectious Diseases Physician prior to acceptance for HATH (see table below for general management approach to these situations):

- Human and animal bites.
- Cellulitis following contact with water.
- Cellulitis complicating chronic ulcers.

SUITABILITY FOR ORAL PROBENECID

Drug interactions: use of methotrexate concurrently is contraindicated. Caution with sulphonylureas (monitor blood glucose levels) and benzodiazepines as they will have increased plasma levels.

- No known allergy to Probenecid.
- Absence of blood dyscrasia, renal urate stones and acute gout.
- Renal function, creatinine clearance >30mL/min.
- Stable liver function.
- Insufficient data to support safe use in pregnancy – avoid.

If improvement in local signs of cellulitis and able to tolerate oral antibiotic therapy – commence Flucloxacillin 500mg 6-hourly orally or Cephalexin 500mg 6 hourly (if non-immediate penicillin hypersensitivity), unless alternative antibiotic indicated by swab culture results. Continue oral antibiotics for 7-10 days depending on clinical response.

MANAGEMENT OF SPECIFIC RISK SITUATIONS

General Management	Recommended Antibiotic Regimen
Human and Animal Bites	
• Assessment of extent of infection and the possibility of involvement of underlying tendon, joint or bone. • Wound swab to be taken. • Wound debrided and irrigated. • Assessment of tetanus immunisation and need for additional tetanus toxoid/immunoglobulin. • If human bite, consider need for assessment and prevention of blood borne viral diseases (eg HIV, Hep B and C), discuss with medical governance doctor and/or ID Physician.	Ceftriaxone 1 gram IV daily PLUS Metronidazole 400mg PO twelve hourly. Change to oral therapy when client stable as following: • If infecting organism clearly identified use oral antibiotic based on culture and sensitivity. • If infecting agent unknown use Amoxicillin/Clavulanic acid 875mg/125mg PO twelve hourly. • If immediate penicillin hypersensitivity use Metronidazole 400mg PO twelve hourly PLUS: EITHER doxycycline 100mg BD PO. **OR** Trimethoprim + sulfamethoxazole 160mg/800mg PO twelve hourly. **OR** Ciprofloxacin 500mg PO twelve hourly.

General Management	Recommended Antibiotic Regimen
Cellulitis Following Water Contact	
• Assessment of severity of infection, co-morbidities (eg malignancy, iron overload), accurate history of type of water exposure. • Wound swab to be taken. • Wound debrided and irrigated. • Assessment of tetanus immunisation. • Discussion of culture results with ID/Micro specialist.	Empiric therapy for uncomplicated cellulitis: Cephazolin 2g IV daily PLUS Probenecid 1g PO daily If Aeromonas suspected (fresh/brackish water/mud) or proven, add Ciprofloxacin 500mg BD PO If Vibrio spp suspected (salt/brackish water) or proven, treat with Ceftriaxone 1g IV daily PLUS Doxycycline 100mg BD PO Consider prolonged duration of therapy (eg 14 days) depending on response.

General Management	Recommended Antibiotic Regimen
Cellulitis Complicating Chronic Ulcers	
• Assessment of underlying cause of ulcer (eg arterial/venous), possibility of involvement of underlying tendon, joint or bone. • May require appropriate imaging. • Wound swab to be taken • Wounds/chronic oedema/venous insufficiency to be managed as per Silver Chain wound care guidelines.	Antibiotic therapy should ideally be guided by culture results; however, wound swab cultures often indicate bacterial colonisation rather than causative pathogen. Empiric therapy: Cephazolin 2g IV daily PLUS Probenecid 1g PO daily

MEDICAL GOVERNANCE

- The client has access to medical governance support for 24 hours per day, 7 days per week.
- Primary medical governance can be by referring medical specialists, credentialed referring GPs or by Silver Chain medical staff.
- Care delivery is planned and provided in consultation with the client, medical officer/specialist holding medical governance and nursing staff.
- Where the primary medical governor is unavailable the Silver Chain medical officer can provide the medical governance.
- In the instance when a client’s condition deteriorates the Silver Chain medical officer or nursing staff will confer with an emergency department medical officer.
- When governance is retained by a Silver Chain medical officer the client will have a medical review within 24 hours of admission and the medical officer will determine when the scheduled follow up and discharge will occur.
- A summary of the episode of care is sent to the referrer or the client’s GP at discharge.

FOLLOW UP

Refer back to client's GP.

REFERENCES

Skin and Soft Tissue Infections [Published November 2014]. In: eTG complete July 2018 edition [Internet]. Melbourne: Therapeutic Guidelines Limited.

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