Skin and Soft Tissue Infections

Infection	*Comments*	*First Line Agents*	*Penicillin Allergy*	*History of multi-resistant organisms*	*Treatment Duration*
Bites- Animal and Human	**Human**: Antibiotic prophylaxis advised for all wounds < 72 hours old. Consider tetanus prophylaxis. Assess risk of HIV/ Hepatitis B and C. **Animal:** Prescribe antibiotic prophylaxis for wounds < 48hrs old and risk of infection is high (e.g. bites on face/hands/feet). Consider tetanus prophylaxis and risk of Rabies.	**For both animal &human bites:** Co-amoxiclav 625mg PO 8 hourly Consider post-exposure prophylaxis if high risk	Doxycycline$^{\forall}$100mg PO 12 hourly* **PLUS** Metronidazole 400mg PO 8 hourly *Avoid in pregnancy, breast-feeding and children **Children<12 yrs**: Azithromycin for 3 days** **PLUS** Metronidazole for 7 days** ***Dose as per BNFC*		7 days *First doses of all antibiotics available in Emergency out of hours cupboard*
Cellulitis (Class 1-3)	**Class 1:** patients have no signs or symptoms of systemic toxicity and have no uncontrolled co-morbidities and are managed on an outpatient basis with oral antibiotics. Investigations are not required **Class 2:** patients are either systemically ill, without any unstable co-morbidities, or are systemically well, but have one or more co-morbidities. Initial parenteral antibiotic therapy is required- consider Outpatient Parenteral Antibacterial Therapy (OPAT). Require FBC, U&E, CRP. A swab or tissue for C&S if available. **Class 3:** patients may appear toxic, or have at least one unstable co-morbidity, or a limb-threatening infection. Require admission to hospital for parenteral antibiotic therapy. Blood cultures are required in addition to the investigations in Class 2. Selected patients may need radiological investigation. **Class 4**: patients have sepsis syndrome or serious life-threatening infections, e.g. necrotizing fasciitis. **Investigations**: FBC, U&E, CRP, Tissue/aspirates/ swabs/ Blood cultures. Radiology. Urgent surgical debridement and parenteral antibiotics should be instituted as quickly as possible.Consider hospital admission for: Diabetes mellitus, Neonate or child under 1 year, Intravenous drug users (IVDUs) **Patients with a history of lymphoedema** may require longer duration of antibiotic treatment (minimum 2 weeks) Failure of first line antibiotic therapy should prompt discussion with medical microbiologist.				

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Cellulitis **(Class 1-3)**		**Class 1** Flucloxacillin 500mg PO 6 hourly **Class 2 & 3** Flucloxacillin (if admitted to hospital) 2 g IV 6 hourly Consider if suitable for OPAT **Necrotising fasciitis arising in the community** **N.B. Contact Microbiology for advice.** Flucloxacillin 2g IV 6 hourly **PLUS** Ciprofloxacin 400mg IV 12 hourly **PLUS** Clindamycin 1.2g IV 6 hourly **Post surgical Necrotising fasciitis** Meropenem 1g IV 8 hourly **PLUS** Vancomycin IV as Trust guidelines	**Class 1** Clarithromycin 500mg PO 12 hourly **Class 2 & 3** **If Mild Penicillin Allergy:** Cefuroxime 750mg IV 8 hourly **PLUS** Metronidazole 500mg IV 8 hourly **If Anaphylaxis to Penicillin**: Vancomycin IV as Trust guidelines **Necrotising fasciitis** Vancomycin IV as Trust guidelines **PLUS** Ciprofloxacin 400mg IV 12 hourly **PLUS** Clindamycin 1.2g IV 6 hourly	**Class 1** Doxycycline 200mg PO stat then 100mg daily, severe infections 200mg daily **Class 2 & 3** Vancomycin instead of Flucloxacillin if high risk of MRSA **Necrotising fasciitis:** ADD Vancomycin if high risk of MRSA	7-14 days After 3-4 days most patients (resolving pyrexia/erythema, stable co-morbidities, falling CRP) may be safely prescribed oral antibiotics. Suitable agents include Flucloxacillin, Clindamycin (if history of penicillin allergy) or Doxycycline (if history of MRSA).

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Orbital cellulitis This is a potentially sight- and life-threatening disease. Management should be in consultation with otolaryngologists and ophthalmologists.	Send blood-cultures, CT scan if unable to assess patient/ no improvement in 24hours/severe disease. Consider surgery if clinical deterioration despite treatment or evidence of abscess	Flucloxacillin 2g IV 6 hourly **PLUS** Ceftriaxone 2g IV daily **PLUS** Metronidazole 500mg IV 8 hourly	Vancomycin IV as Trust guidelines **PLUS** Ciprofloxacin 500mg PO 12 hourly **PLUS** Metronidazole 500mg IV 8 hourly	ADD Vancomycin if high risk of MRSA ***If History of ESBL discuss with microbiology***	2-3 weeks Switch to PO in 2-5 days following clinical improvement (discuss PO antibiotics with microbiology).
Periorbital (preseptal) cellulitis	Preseptal cellulitis most commonly arises from a contiguous infection of the soft tissues of the face secondary to local trauma, insect or animal bites, or foreign bodies.	**Mild** Co-amoxiclav 625mg PO 8 hourly **Severe (and child < 1 year):** Manage as orbital cellulitis	Clindamycin 450mg PO 6 hourly **PLUS** Ciprofloxacin 500mg PO 12 hourly		7-10 days
Peripheral and temporary central cannulae sites. *Avoid Doxycycline in pregnancy, breast feeding and children	Usually due to *S. aureus* 1/3 of which are MRSA, Send exit site swab. Line should be removed whenever possible. **Investigations:** Blood cultures, Exit site swab, CRP	**Patient clinically stable (mild infection):** Flucloxacillin 500mg PO 6 hourly **Patient septic and/or spreading cellulitis/tracking** Flucloxacillin 2g IV 6 hourly **Modify antibiotic treatment on the basis of sensitivities, blood cultures and/or clinical response.**	**Patient clinically stable (mild infection):** Clarithromycin 500mg PO 12 hourly **Patient septic and/or spreading cellulitis/tracking** Clarithromycin 500mg IV 12 hourly	**If known to be MRSA colonised: Patient clinically stable (mild infection):** Doxycycline* 100 mg PO 12 hourly then 100mg PO OD **Patient septic and/or spreading cellulitis/ tracking:** Vancomycin IV as Trust guidelines	**Patient clinically stable (mild infection):**7 days **Patient septic and/or spreading cellulitis/tracking:** 7-14 days

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Surgical site infections (SSIs)	UK data shows that 50% of all SSIs are due to *S.aureus*, two-thirds of which are MRSA. The rates of MRSA are highest in Orthopaedics (Hemi-arthroplasties, limb amputations), small/large bowel surgery and vascular surgery. Other common organisms are *E.coli*, Klebsiella spp., enterococci and Coagulase-negative Staphylococci.Most SSIs are superficial infections. **Investigations-** Preferably pus or wound swab for C&S, blood-cultures (if pyrexial), CRP. **Modify antibiotic treatment on the basis of sensitivities, blood cultures and/or clinical response.**	**Patient systemically well and minimal erythema (<5cms),** send swab C&S. Start antibiotics only if patient pyrexial (38.5^{o}C), Tachycardic (>100/m) and/or erythema >5cms. **Clean wound and operation on trunk, neck, head, extremity** Flucloxacillin 2g IV 6 hourly **Operation on GI Tract, female genital tract, perineum** Co-amoxiclav 1.2g IV 8 hourly **If life-threatening sepsis** Meropenem 1g IV 8 hourly **and** Vancomycin IV as Trust guidelines	**Clean wound and operation on trunk, neck, head, extremity** Vancomycin IV as Trust guidelines **Operation on GI Tract, female genital tract, perineum** **Mild penicillin allergy:** Cefuroxime 1.5g IV 8 hourly **PLUS** Metronidazole 500mg IV 8 hourly **Oral Step down:** Cephalexin 1g PO 8hrly plus Metronidazole 400mg PO 8hrly **If Anaphylaxis:** Tigecycline 100mg stat, then 50 mg 12 hrly **Oral step down**: d/w on-call microbiologist **If History of ESBL discuss with microbiology**	ADD Vancomycin to ALL if high risk of MRSA ***If History of ESBL:*** Meropenem 1g IV 8 hourly	7-10 days

References:

Clinical resource Efficiency Support Team (2005) guidelines on the management of cellulitis in adults. Crest, Belfast. http://www.acutemed.co.uk/docs/Cellulitisguidelines,%20CREST,%2005.pdf

Gokulan, Phoenix et al. Diagnosis and management of cellulitis, BMJ 2012:345