

Consensus Document on the Management of Cellulitis in Lymphoedema

Cellulitis is an acute spreading inflammation of the skin and subcutaneous tissues characterised by pain, warmth, swelling and erythema. In lymphoedema, attacks are variable in presentation and, because of differences from classical cellulitis, are often called acute inflammatory episodes. Cellulitis will be the term used here (related terms: erysipelas, lymphangitis). Most episodes are believed to be caused by Group A Streptococci.

Some episodes are accompanied by severe systemic upset, with high fever or rigors; others are milder, with minimal or no fever. Increased swelling of the affected area may occur. Inflammatory markers (CRP, ESR) may be raised. It is difficult to predict response to treatment.

This document makes recommendations about the use of antibiotics for cellulitis in patients with lymphoedema, and advises when admission to hospital is indicated. Prompt treatment is essential to avoid further damage to the affected part which in turn may predispose to repeated attacks.

1. ACUTE ATTACK OF CELLULITIS

1.1 A decision whether hospital admission is indicated should be based on the level of systemic upset:

- signs of septicaemia (hypotension, tachycardia, severe pyrexia, confusion, tachypnoea or vomiting) are an absolute indication for admission;
- continuing or deteriorating systemic signs, with or without deteriorating local signs, after 48 hours of antibiotic treatment;
- unresolving or deteriorating local signs, with or without systemic signs, despite trials of first and second line antibiotics.

1.2 Management at home

1.2.1 It is essential that the patient is closely monitored, ideally by the GP. To establish a baseline to monitor progress record:

- extent and severity of rash – if possible, mark and date the edge of the erythema (may be difficult in lymphoedema as the rash is often blotchy);
- level of systemic upset;
- CRP/ESR/white cell count;
- Microbiology of any cuts or breaks in the skin before antibiotics are started.

1.2.2. Oral amoxicillin 500mg 8-hourly is the treatment of choice. If there is any evidence of Staph aureus infection e.g. folliculitis, pus formation or crusted dermatitis, then flucloxacillin 500mg 6-hourly should be prescribed in addition.

1.2.3. Patients who are allergic to penicillin should be prescribed clindamycin as in 1.2.4.

- 1.2.4.** If there is no or a poor response (unresolving inflammation or development of systemic symptoms) to oral amoxicillin after 48 hours, then clindamycin 300mg 6-hourly should be substituted as second line oral treatment.
- 1.2.5.** Antibiotics should be continued for not less than 14 days after a clinical response to treatment. It may take as long as 1-2 months of treatment to achieve complete resolution.
- 1.2.6.** Bed rest and elevation of the affected part is essential. Avoid compression garments during the acute attack.
- 1.2.7.** . Paracetamol/non-steroidal anti-inflammatory drug (NSAID) as necessary.
- 1.2.8.** When the inflammation is sufficiently reduced, wearing of compression garments and normal levels of exercise may resume. A return to work depends on the patient's occupation, and there being no deterioration when normal levels of exercise are established.

1.3 Management in hospital

- 1.3.1.** Choice of antibiotics in hospital is largely dependent on local rules. Recommended first line treatment is amoxicillin 2g 8-hourly iv plus gentamicin 5mg/kg iv daily; dose to be adjusted according to renal function and assay. Benzylpenicillin 1.2-2.4g 6-hourly may be preferred to the amoxicillin. Convention is to use a combination of benzylpenicillin and flucloxacillin, however, doubts about the role of Staph aureus in cellulitis make this combination less certain.
- 1.3.2.** If there is no or a poor response to this combination after 48 hours, clindamycin 1.2g 6-hourly iv should be substituted for both.
- 1.3.3.** Penicillin allergic patients should receive clindamycin as in 1.3.2.
- 1.3.4.** A switch to oral treatment with amoxicillin 500mg 8-hourly, or clindamycin 300mg 6-hourly should not be made before:
- Temperature down for 48 hours;
 - Inflammation much resolved;
 - CRP falling.

1.4 Antibiotics "in case"

- 1.4.1.** The risk of further attacks of cellulitis in lymphoedema is high. It is recommended that patients who have had an attack of cellulitis should carry a two week supply of antibiotics with them particularly when away from home for any length of time, e.g. on holiday. Amoxicillin 500mg tds is recommended or, for those allergic to penicillin, clindamycin 300mg 6-hourly. Antibiotics should be started immediately familiar symptoms of cellulitis start but a medical opinion should be sought as soon as possible.

2. RECURRENT CELLULITIS

- 2.1. Antibiotic prophylaxis should be offered to patients who have two or more attacks of cellulitis per year. Penicillin V 500mg daily (1g if weight >75kg) should be the first choice. The dose may be reduced to 250mg daily after one year of successful prophylaxis. Prophylaxis may need to be life-long if relapse occurs when antibiotics are discontinued after a two year period of successful prophylaxis. For those allergic to penicillin, erythromycin 250mg daily is recommended; if this is not tolerated then clarithromycin 250mg daily is an alternative.
- 2.2. There is evidence that decongestive lymphatic therapy reduces the frequency of attacks. Control of the swelling is therefore important. Patients undergoing intensive DLT and known to have suffered cellulitis in the past may benefit from antibiotic cover in case cellulitis is provoked. Oral penicillin V 500mg daily is recommended during the period of the intensive treatment. For those allergic to penicillin, erythromycin is advised (as in 2.1).
- 2.3. Apart from the swelling other risk factors for recurrent cellulitis include interdigital scaling, dermatitis, open wounds including leg ulcers, and weeping lymphangiectasia (leaking lymph blisters on the skin surface). It is important that such risk factors are treated.
- 2.4. Those patients in whom first line antibiotic prophylaxis fails may need alternative strategies including trials of prophylactic clindamycin 150mg daily or clarithromycin 250mg daily

N.B. A history of animal lick or bite preceding an attack may indicate infection with *Pasteurella multocida*, *Eikenella corrodens* or *Capnocytophaga canimorsus*. These organisms respond best to co-amoxiclav or ciprofloxacin if penicillin allergic.



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We welcome any comments from users (to be directed to pmortimer@sgul.ac.uk).

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'This information is based on a Consensus Document produced by medical experts and facilitated by the Lymphoedema Support Network. The document, produced in October 2005, is jointly owned by the British Lymphology Society and the Lymphoedema Support Network'

The LSN has produced a new fact sheet based on the Consensus Document, 'Management of Cellulitis in Lymphoedema'.

Order forms are available on the LSN website or from the LSN office on request.

Website: www.lymphoedema.org/lisn

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Antibiotics for cellulitis in lymphoedema^a				
Situation	First-line antibiotics	If allergic to penicillin	Second-line antibiotics	Comments
Acute cellulitis + septicaemia (inpatient admission)	Amoxicillin IV 2g q8h or benzylpenicillin IV 1200-2400mg q6h + gentamycin IV 5mg/kg o.d.	Clindamycin IV 1.2g q6h	Clindamycin IV 1.2g q6h (if poor or no response by 48h)	Switch to amoxicillin 500mg q8h when: <ul style="list-style-type: none"> • temperature down for 48h • inflammation much resolved • CRP <30mg/L
Acute cellulitis (home care)	Amoxicillin 500mg q8h ± flucloxacillin 500mg q6h ^b	Clindamycin 300mg q6h	<i>If fails to resolve, convert to IV regimen as in row 1, column 2</i>	Treat for at least 14 days or until signs of inflammation have resolved
Prophylaxis to prevent recurrent cellulitis (if 2+ attacks p.a.)	Phenoxymethylpenicillin 500mg o.d. (1g if weight >75kg)	Erythromycin 250mg o.d.	Clindamycin 150mg o.d. or clarithromycin 250mg o.d.	After one year, halve dose of penicillin to 250mg o.d. (500mg if weight >75kg)
Emergency supply of antibiotics 'in case of need' (when away from home)	Amoxicillin 500mg q8h	Clindamycin 300mg q6h	<i>If fails to resolve, or constitutional symptoms develop, convert to IV regimen as in row 1, column 2 above</i>	
History of animal bite	Co-amoxiclav 625mg 6hrly	Ciprofloxacin 500mg 12hrly	<i>Consult microbiologist</i>	Causes may be <i>Pasteurella multocida</i> , <i>Eikenella corrodens</i> or <i>Capnocytophaga canimorsus</i>

a. PO unless stated otherwise.
b. Add if suspect *Staphylococcus aureus* infection, e.g. folliculitis, pus formation, crusted dermatitis.