Cellulitis: skin deep and spreading across New Zealand

Cellulitis is an acute, spreading bacterial infection of the lower dermis and subcutaneous tissue. It most often affects lower limbs but may affect other areas depending on the cause. Cellulitis is characterised by localised pain, swelling, erythema and heat. Co-morbidities recognised as risk factors for cellulitis include: eczema, obesity, tinea pedis, diabetes, pregnancy, venous insufficiency, peripheral artery disease, ulcers and lymphoedema.

Streptococcus pyogenes and related streptococci are reported to cause approximately two-thirds of cases of cellulitis and *Staphylococcus aureus* the majority of the remaining cases. Cellulitis can usually be diagnosed clinically and investigations are not normally required.

All patients with cellulitis should rest and elevate any affected limb. A line drawn around the leading edge of the erythematous area allows the progress of the cellulitis to be easily monitored.

Flucloxacillin is the first-line oral antibiotic for patients with cellulitis. The importance of treatment adherence should be discussed. Microbiological swabbing is not generally required before beginning treatment unless there are risk factors for MRSA.

Treating children with cellulitis

A child with early and mild cellulitis can be trialled with oral flucloxacillin for five days with review by a general practitioner after 24–48 hours.

- Flucloxacillin 10–25 mg/kg/dose, orally, three times daily, for five days (maximum 500 mg/dose)

Erythromycin can be prescribed as an alternative for children with a confirmed significant allergy to flucloxacillin. If neither flucloxacillin syrup nor erythromycin are tolerated then cephalexin oral liquid is an alternative for children.

Treating adults with cellulitis

Flucloxacillin is also the first-line recommended oral antibiotic treatment for cellulitis in adults.

- Flucloxacillin 500 mg, orally, four times daily, for five days

Erythromycin can be prescribed as an alternative for adults with a confirmed significant allergy to flucloxacillin.

The natural history of cellulitis means that patients may experience an increase in erythema and swelling within the first 48 hours of treatment. Treatment adherence, including the need to rest and elevate affected limbs, should be assessed in all patients who are not responding as well as expected.

Patients with mild cellulitis who are not responding sufficiently or patients with more advanced cellulitis may be candidates for community-based IV treatment. In some DHBs practices are supplied with "cellulitis kits", in other areas IV antibiotic treatment is initiated in primary care and then continued by a district nurse, while in other DHBs a district nurse may be responsible for care following a hospital referral from general practice. Regardless of local protocols, the patient's individual circumstances are important when considering if community-based IV antibiotic treatment is appropriate.

The recommended dose for the community-based IV treatment of adult patients with cellulitis is:

- Cefazolin, 2 g IV, once daily, with probenecid, 500 mg orally, twice daily,

Cefazolin is subsidised for the treatment of cellulitis, but only when it is prescribed in accordance with an approved DHB protocol. Patients receiving IV antibiotics for cellulitis should show significant clinical improvement after two to three days; at which time they can be switched to oral antibiotics. If the patient has not shown any clinical improvement after this time it is recommended that they be referred to hospital for further assessment or discussed with an infectious diseases clinician.

Peer group discussion points:

1. Often the initial lesion that precipitates cellulitis can be hard to identify; are there any particular activities or risk factors that in your clinical experience are associated with cellulitis? Are there any strategies that you are aware of to reduce the incidence of cellulitis?
2. What are the factors that you consider when deciding if a patient with cellulitis can be managed at home?
3. Have any patients under your care received home-based IV treatment for cellulitis, and if so, how was their care co-ordinated?
4. Are you aware of any cases of cellulitis due to MRSA in your community, and if so, how were these managed?
5. Ideally flucloxacillin should be taken four times daily, and on an empty stomach (half an hour before or two hours after a meal). Is flucloxacillin adherence often a problem with patients? What advice do you give patients about oral flucloxacillin when you prescribe it?

Original article in BPJ 68 (June, 2015)