Management of impetigo

Key Reviewer: Dr Amanda Oakley, Specialist Dermatologist and Clinical Associate Professor, Tristram Clinic, Hamilton

Key concepts

- Impetigo is a common, highly contagious bacterial infection of the skin
- Impetigo is usually diagnosed clinically. Swabs may be required for recurrent infections, treatment failure with oral antibiotics or where there is a community outbreak.
- Topical treatment is the initial therapy for small localised patches of impetigo
- Oral antibiotics should be used for extensive disease or systemic infection and when topical treatment fails

Impetigo is a common, highly contagious bacterial infection of the skin

Impetigo can affect any age group but most commonly occurs in young children (i.e. aged two to six years).[1, 2] *Staphylococcus aureus* and *Streptococcus pyogenes*, either alone or together, are the most common causes of impetigo. *S. aureus* is more common.[3] Impetigo can occur in previously healthy skin or can start from minor trauma that disrupts the skin barrier such as a graze, scratched scabies or eczema.[1, 4]

Impetigo is highly contagious and can be transmitted by direct contact, commonly spreading rapidly through families, day-care centres or schools.[2]

Impetigo is more common in;[1]

- Hot humid weather
- Conditions of poor hygiene or close physical contact (e.g. overcrowding, participation in contact sports)
- People who have skin conditions or experience trauma that impairs the normal skin barrier (e.g. eczema, scabies, fungal skin infections, insect bites)
- People with diabetes mellitus
- Intravenous drug users
- People who are immunocompromised (e.g. HIV, cancer, chemotherapy)

Two types of impetigo: bullous and non-bullous

Bullous and non-bullous are the two types of impetigo. Non-bullous (Figure 1) is much more common and can be caused by *S. aureus* or *S. pyogenes,* however *S. aureus* is the main cause. Lesions begin as a vesicle that ruptures and the contents dry to form a gold-coloured plaque. These lesions are often 2 cm in diameter and most frequently affect the face (especially around the mouth and nose) and limbs.[2, 3] Systemic signs are usually not present however with extensive impetigo, fever and regional lymphadenopathy may occur.[1]

Bullous impetigo (Figure 2) is only caused by *S. aureus*. It is characterised by larger fluid-filled blisters that rupture less easily. Systemic signs of infection such as fever and lymphadenopathy are more likely to occur and the torso is more likely to be affected.[1]

Impetigo is usually diagnosed clinically

Impetigo is usually diagnosed clinically and treatment decisions are rarely based on the results of skin swabs. Swabs may be required for recurrent infections, treatment failure with oral antibiotics or where there is a community outbreak and the cause needs to be identified. For recurrent impetigo nasal swabs can identify staphylococcal nasal carriage requiring specific management.[1]

Figure 1: Nonbullous impetigo (*S. aureus*)

Figure 2: Bullous impetigo (*S. aureus*)

Treatment

The aim of treatment is to clear the eruption and prevent the spread of the infection to others.

Topical antibiotics are as effective as oral antibiotics for treating localised impetigo. The advantage of using topical antibiotics is that they are applied only where needed, avoiding systemic adverse effects such as gastrointestinal upset. Antiseptics such as hydrogen peroxide cream may also be effective.[5]

Impetigo caused by MRSA

The prevalence of impetigo caused by methicillin-resistant *S. aureus* (MRSA) is unknown, but is likely to be increasing.[6] Amongst *S. aureus* isolates in New Zealand 7% were resistant to oxacillin/methicillin in 2005.[10] Half of 664 MRSA laboratory isolates reported in New Zealand in August 2007 were from community patients.[11] However, MRSA is more likely to present with folliculitis or abscess. Some community strains of MRSA are also highly resistant to fusidic acid and mupirocin.[11] Trimethoprim/sulfamethoxazole, tetracyclines or clindamycin are usually effective against MRSA.[12]

Oral antibiotics are suitable for more extensive impetigo or when systemic symptoms are present because of the difficulty of applying topical antibiotics to large areas. Topical antibiotics are less suitable for recurrent infection, because the risk of inducing bacterial resistance is greater with topical antibiotics than with oral antibiotics.

Underlying conditions also need to be treated to reduce the risk of recurring impetigo.[6]

Topical treatment is the initial therapy for small localised patches of impetigo

Fusidic acid and mupirocin have been shown to be equally effective for small localised patches of impetigo. They are as effective as oral antibiotics.[6, 7]

Fusidic acid cream or ointment (Foban) is the first-line choice because mupirocin ointment (Bactroban) is effective against MRSA (see over page) and is best reserved for this reason.[8]

Seven days of topical antibiotic treatment appears to be effective.[9] It is not recommended to exceed ten days treatment as this may make contact sensitisation more likely and may encourage bacterial resistance.

Oral antibiotics should be used for extensive disease and for topical treatment failure

Flucloxacillin is the first-line choice as it is effective against *S. aureus* and Group A *streptococci*.[4, 13]

Erythromycin can be used for people who are allergic to penicillins, however gastrointestinal disturbances are more common and in some areas, resistance to erythromycin is increasing.[1, 14, 15]

Broad-spectrum antibiotics such as amoxicillin clavulanate are inappropriate because the organisms are known and are susceptible to narrow spectrum antibiotics.[1]

A seven day course of oral antibiotics is generally sufficient. If treatment fails after this time, compliance should be enquired about and swabs can be taken to check sensitivities.[16]

Children may find the taste of flucloxacillin syrup very unpleasant. Advise parents to offer a glass of fruit juice to their child directly after taking a dose.

Potential outcomes

The natural history of impetigo has not been extensively studied but it is believed that without treatment, minor cases would resolve spontaneously in two to three weeks. Scarring does not occur because the infection is limited to the epidermis.[6]

Recurrent infection

Recurrent infection may result from the nasal carriage of causative microorganisms or from fomite colonisation (colonistation of an inanimate object capable of carrying infectious organisms). If nasal carriage is suspected, a nasal swab is required to confirm this and a topical antibiotic applied inside each nostril, three times daily for seven days, is recommended. A household contact may be

an asymptomatic carrier of *S. aureus* and this person will require treatment too.[4]

Post-streptococcal glomerulonephritis is a rare complication of streptococcal impetigo

Post-streptococcal glomerulonephritis, which can lead to renal failure, is a rare (less than 1%) complication of streptococcal impetigo (see BPJ 7, August 2007). Treatment of impetigo may not prevent susceptible people developing this complication.[10]

Advice for patients with impetigo

To remove crusted areas:

If patients wish to remove crusted areas, soak a clean cloth in a mixture of half a cup of white vinegar in a litre of tepid water. Apply this compress to affected areas for about ten minutes several times a day and then gently wipe away crust.[4] Topical antibiotic can then be applied. Note: bullous impetigo should not be lanced.

To prevent the spread of infection:[1,4]

Children should stay away from day-care or school until the lesions have crusted over or they have received at least 24 hours of antibiotic treatment. This may be less important for older children (e.g. secondary school) because they may be less likely to spread the infection through touching each other.[6]

Cover the affected areas and wash hands after touching patches of impetigo or applying antibiotic cream or ointment.

Avoid close contact with other people.

Use separate towels, flannels, clothing and bathwater until the infection has cleared. Disinfect linen and clothing by hot wash, hot dry or ironing.

Use hand sanitisers and/or careful washing with household soap and water, several times daily.

Images contributed by NZ DermNet, the website of the New Zealand Dermatological Society.

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