Secondary bacterial infection of eczema: antimicrobial prescribing

NICE National Institute for Health and Care Excellence

Background

Symptoms and signs of bacterial secondary infection can include weeping, pustules, crusts, no treatment response, rapidly worsening eczema, fever and malaise

Not all eczema flares are caused by a bacterial infection, even if there are crusts and weeping

Eczema is often colonised with bacteria but may not be clinically infected

For managing eczema and eczema herpeticum in children under 12, see: NICE's guideline on diagnosing and managing atopic eczema in under 12s

Prescribing considerations

Take account of:

- **the evidence, which suggests a limited benefit with antibiotics**
- **the risk of antimicrobial resistance with repeated courses of antibiotics**
- **the extent and severity of symptoms or signs**
- **the risk of complications**

If choosing between a topical or oral antibiotic (topical might be more appropriate if the infection is localised and not severe), also take account of:

- **patient preferences**
- **possible adverse effects**
- **previous topical antibiotic use**
- **local antimicrobial resistance data**

Microbiological sampling

If a skin swab has been sent for testing, review antibiotic choice when the results are available.

Change the antibiotic according to the results if symptoms are not improving, using a narrow spectrum antibiotic if possible

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Secondary bacterial skin infection including eczema

Manage underlying eczema and flares with treatments such as emollients and topical corticosteroids, whether antibiotics are given or not

For people who are not systemically unwell, **do not routinely offer** either a topical or oral antibiotic (see prescribing considerations)

If an antibiotic is not given, advise:

- about the reasons why an antibiotic is unlikely to provide any benefit
- seeking medical help if symptoms worsen rapidly or significantly at any time

For people who are systemically unwell, **offer** an oral antibiotic

If an antibiotic is given, advise:

- about possible adverse effects
- about the risk of developing antimicrobial resistance with extended or repeated use
- continuing treatments such as emollients and topical corticosteroids
- that it can take time for the infection to resolve; full resolution is not expected until after the antibiotic course is completed
- seeking medical help if symptoms worsen rapidly or significantly at any time

Refer to hospital if there are symptoms or signs suggesting a more serious illness or condition such as necrotising fasciitis or sepsis

Consider referral or seeking specialist advice if the person:

- has spreading infection that is not responding to oral antibiotics
- is systemically unwell
- is at high risk of complications
- has infections that recur frequently

Reassess if:

- **the person has pain out of proportion to the infection**
- **symptoms worsen rapidly or significantly at any time, or have not improved after a complete course of antibiotics**

Take account of other possible diagnoses (for example, eczema herpeticum), anything suggesting a more serious illness or condition, and previous antibiotic use

Do not routinely take a skin swab for microbiological testing at the initial presentation

Consider sending a skin swab if the infection is worsening or not improving as expected

If the infection recurs frequently, send a skin swab, and consider taking a nasal swab and starting treatment for decolonisation

Secondary bacterial infection of eczema: choice of antibiotics

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Adults aged 18 years and over

Treatment	Antibiotic, dosage and course length
For secondary bacterial infection of eczema in people who are not systemically unwell	Do not routinely offer either a topical or oral antibiotic
First-choice topical if a topical antibiotic is appropriate (see prescribing considerations on the first page of this summary)	**Fusidic acid 2%:** Apply three times a day for 5 to 7 days For localised infections only. Extended or recurrent use may increase the risk of developing antimicrobial resistance.
First-choice oral if an oral antibiotic is appropriate (see prescribing considerations on the first page of this summary)	**Flucloxacillin:** 500 mg four times a day for 5 to 7 days
Alternative oral antibiotic for penicillin allergy or if flucloxacillin is unsuitable (for people who are not pregnant)	**Clarithromycin:** 250 mg twice a day for 5 to 7 days The dosage can be increased to 500 mg twice a day for severe infections
Alternative oral antibiotic for penicillin allergy in pregnancy	**Erythromycin:** 250 mg to 500 mg four times a day for 5 to 7 days Erythromycin is preferred if a macrolide is needed in pregnancy, for example, if there is true penicillin allergy and the benefits of antibiotic treatment outweigh the harms. See the Medicines and Healthcare products Regulatory Agency (MHRA) Public Assessment Report on the safety of macrolide antibiotics in pregnancy.
If meticillin-resistant *Staphylococcus aureus* is suspected or confirmed	Consult a microbiologist

See the BNF and the BNF for Children for appropriate use and dosing of the antibiotics recommended in specific populations, for example, people with hepatic or renal impairment, and in pregnancy and breastfeeding.

In people with symptoms or signs of cellulitis, follow:
NICE's guideline on cellutitis and erysipelas: antimicrobial prescribing.

Children and young people aged from 1 month to under 18 years

Treatment	Antibiotic, dosage and course length
For secondary bacterial infection of eczema in people who are not systemically unwell	Do not routinely offer either a topical or oral antibiotic
First-choice topical if a topical antibiotic is appropriate (see prescribing considerations on the first page of this summary)	**Fusidic acid 2%:** Apply three times a day for 5 to 7 days For localised infections only. Extended or recurrent use may increase the risk of developing antimicrobial resistance.
First-choice oral if an oral antibiotic is appropriate (see prescribing considerations on the first page of this summary)	**Flucloxacillin** (oral solution or capsules): **1 month to 1 year**: 62.5 mg to 125 mg four times a day for 5 to 7 days **2 to 9 years**: 125 mg to 250 mg four times a day for 5 to 7 days **10 to 17 years**: 250 mg to 500 mg four times a day for 5 to 7 days
Alternative oral antibiotic for penicillin allergy or if flucloxacillin is unsuitable (for people who are not pregnant)	**Clarithromycin:** **1 month to 11 years:** under 8 kg: 7.5 mg/kg twice a day for 5 to 7 days 8 to 11 kg: 62.5 mg twice a day for 5 to 7 days 12 to 19 kg: 125 mg twice a day for 5 to 7 days 20 to 29 kg: 187.5 mg twice a day for 5 to 7 days 30 to 40 kg: 250 mg twice a day for 5 to 7 days **12 to 17 years:** 250 mg twice a day for 5 to 7 days. The dosage can be increased to 500 mg twice a day for severe infections
Alternative oral antibiotic for penicillin allergy in pregnancy	**Erythromycin:** **8 to 17 years**: 250 mg to 500 mg four times a day for 5 to 7 days Erythromycin is preferred if a macrolide is needed in pregnancy, for example, if there is true penicillin allergy and the benefits of antibiotic treatment outweigh the harms. See the Medicines and Healthcare products Regulatory Agency (MHRA) Public Assessment Report on the safety of macrolide antibiotics in pregnancy.
If meticillin-resistant *Staphylococcus aureus* is suspected or confirmed	Consult a microbiologist