

Periorbital/Preseptal Cellulitis in Adults - Microbiology Full Clinical Guideline

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Introduction

- The orbital septum extends from the orbit periosteum to the tarsal plate.
- Microbial invasion of the eyelid soft tissues anterior to the orbital septum and the host inflammatory response is termed periorbital/preseptal cellulitis.
- The commonest diagnosed causes of periorbital/preseptal cellulitis are *Staphylococcus aureus*, *Streptococcus* species (especially *Streptococcus pneumoniae*), and anaerobes.
- Mechanisms of inoculation include:
 - Breaches in the skin:
 - Surgery: e.g. eyelid surgery, strabismus surgery.
 - Trauma: e.g. animal bites, insect bites.
 - Contiguous/Local dissemination from other foci of infection:
 - E.g. dacryocystitis, folliculitis, sinusitis.
- Preseptal/Periorbital cellulitis manifests, in general, with: eyelid redness, tenderness, and swelling; with or without ocular pain.

Differential Diagnosis

- The symptoms and signs of periorbital/preseptal cellulitis may overlap with the eyesight- and life-threatening orbital/postseptal cellulitis.
- Ocular pain (especially on eye movements), ophthalmoplegia, proptosis, visual disturbance (for example: reduced visual acuity; diplopia), and/or visual loss can be distinguishing features of orbital/postseptal cellulitis.

Investigation

- **In general, symptoms and signs provide the criteria for the diagnosis of preseptal/periorbital cellulitis.**
- **The investigations outlined herein (and denoted ±) can be considered, case by case.**
- ± Computed tomography (CT) of the orbits and sinuses; for example, if there are clinical concerns re orbital/postseptal cellulitis.
- ± Bloods; for example, if there is progression of localised infectious disease into sepsis and septic shock:
 - Full blood count (FBC), C reactive protein (CRP), lactate, urea and electrolytes (U&Es), and liver function tests (LFTs).
- ± Blood cultures; for example, if there are episodes of fever and/or haemodynamic instability, if the differential diagnosis includes orbital/postseptal cellulitis, and/or if there are criteria for intravenous antibiotics.

Treatment

Intravenous versus per oral antibiotics

- Criteria for intravenous:
 - (1) Septic shock.
 - (2) Sepsis.
 - (3) Progression of symptoms and signs after 48 hours of per oral antibiotics.

- (4) Intolerant of per oral antibiotics.
- Classification for intravenous versus per oral antibiotics, and community health care versus hospital:
 - Criteria (1):
 - Intravenous therapy in the intensive care unit (ICU).
 - Criteria (2):
 - Intravenous therapy in hospital ± in the ICU.
 - Criteria (3) or (4):
 - Intravenous therapy in hospital or via outpatient parenteral antimicrobial therapy (OPAT) team in the community.
 - No criteria for intravenous:
 - Per oral antibiotics in the community.

Empiric, Per Oral Antibiotics

- First line: co-amoxiclav 625 mg 8 hourly.
- Second line: clindamycin 300-450 mg 6 hourly.
- Third line: clarithromycin 500 mg 12 hourly and metronidazole 400 mg 8 hourly.
- Fourth line: doxycycline 100 mg 12 hourly and metronidazole 400 mg 8 hourly.
- Fifth line: linezolid 600 mg 12 hourly and metronidazole 400 mg 8 hourly.

Empiric, Outpatient Parenteral Antibiotic Therapy (OPAT)

- First line: ceftriaxone 2-4 g intravenously daily and metronidazole 400 mg per oral 8 hourly.
- Second line: teicoplanin ([dose as per hospital guidelines](#), target pre dose level 15-30 mg/l) and metronidazole 400 mg per oral 8 hourly.
- Third line: daptomycin 4-6 mg/kg intravenously daily and metronidazole 400 mg per oral 8 hourly.

Empiric, Intravenous Antibiotics

- First line: co-amoxiclav 1.2 g 8 hourly.
- Second line, if penicillin allergy and/or clinical concerns re risk of MRSA:
 - Glycopeptide (vancomycin or teicoplanin), [dose as per hospital guidelines](#), vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 15-30 mg/l; and
 - Metronidazole 500 mg 8 hourly.
- Third line, if penicillin allergy: clindamycin 600 mg 6 hourly.
- Fourth line, if penicillin allergy and/or clinical concerns re risk of MRSA:
 - Linezolid 600 mg 12 hourly (NB or per oral [absorption 100%]); and
 - Metronidazole 500 mg 8 hourly.
- Fifth line, if penicillin allergy and/or clinical concerns re risk of MRSA:
 - Daptomycin 4-6 mg/kg daily; and
 - Metronidazole 500 mg 8 hourly.

Directed, Intravenous Antibiotics (**with sensitivities**)

- Methicillin sensitive *Staphylococcus aureus* (MSSA), **according to sensitivities**:
 - First line: flucloxacillin 2 g 6 hourly.
 - Second line: glycopeptide (vancomycin or teicoplanin), [dose as per hospital guidelines](#), vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 15-30 mg/l.
 - Third line: clindamycin 600 mg 6 hourly.
- Methicillin resistant *Staphylococcus aureus* (MRSA), **according to sensitivities**:

- First line: glycopeptide (vancomycin or teicoplanin), [dose as per hospital guidelines](#), vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 15-30 mg/l.
- Second line: clindamycin 600 mg 6 hourly.
- Third line: linezolid 600 mg 12 hourly (NB or per oral [absorption 100%]).
- **Streptococcus** species, including *Streptococcus pneumoniae*, **according to sensitivities:**
 - First line: benzylpenicillin 1.2 g 6 hourly.
 - Second line: glycopeptide (vancomycin or teicoplanin), [dose as per hospital guidelines](#), vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 15-30 mg/l.
 - Third line: clindamycin 600 mg 6 hourly.
- Anaerobes, **according to sensitivities:**
 - First line: metronidazole 500 mg 8 hourly.
 - Second line: co-amoxiclav 1.2 g 8 hourly.
 - Third line: clindamycin 600 mg 6 hourly.

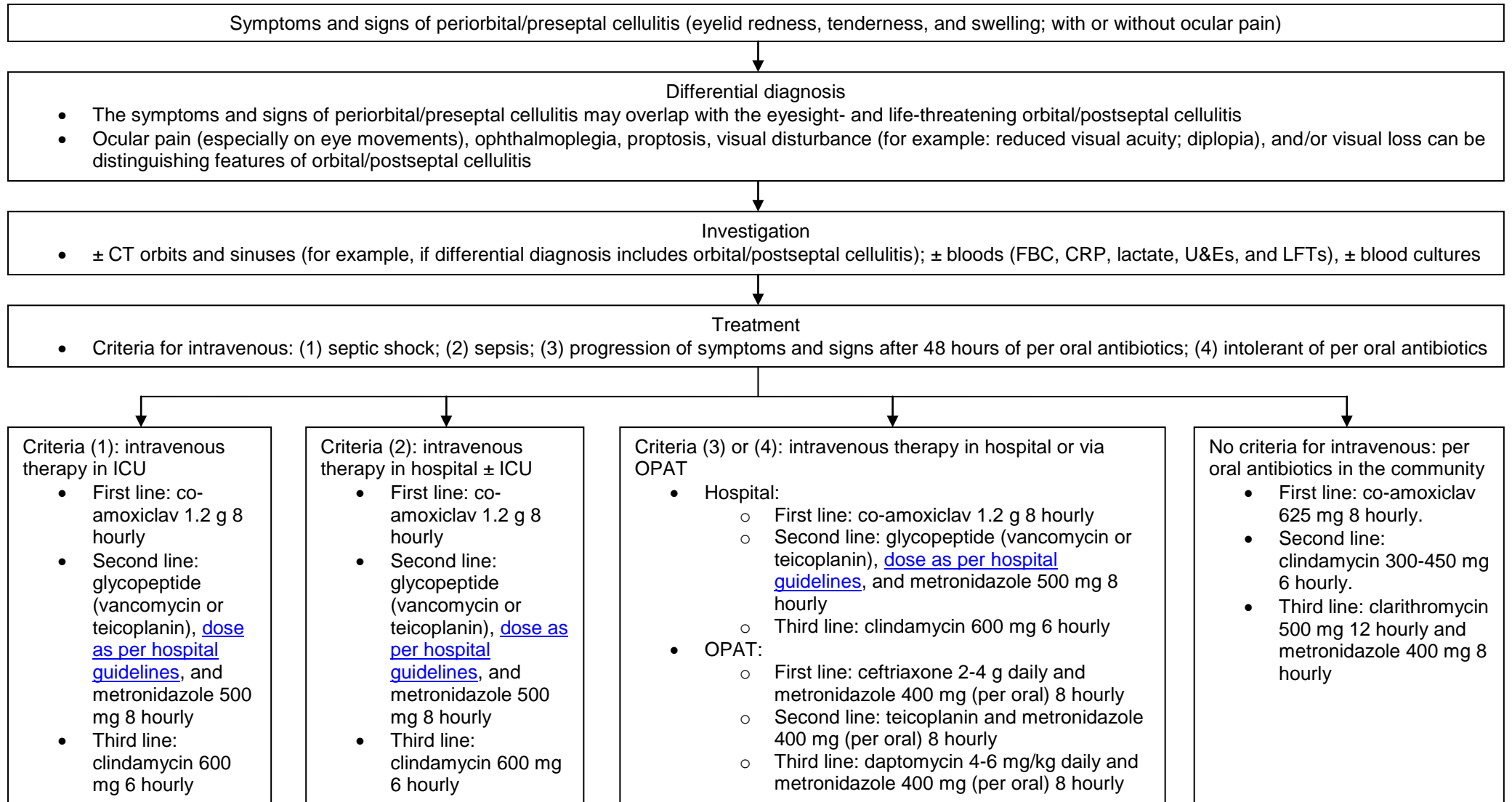
Directed, Per Oral Antibiotics (with sensitivities)

- Methicillin sensitive *Staphylococcus aureus* (MSSA), **according to sensitivities:**
 - First line: flucloxacillin 1 g 6 hourly.
 - Second line: clarithromycin 500 mg 12 hourly.
 - Third line: doxycycline 100 mg 12 hourly.
- Methicillin resistant *Staphylococcus aureus* (MRSA), **according to sensitivities:**
 - First line: clarithromycin 500 mg 12 hourly.
 - Second line: doxycycline 100 mg 12 hourly.
 - Third line: clindamycin 300-450 mg 6 hourly.
- **Streptococcus** species, including *Streptococcus pneumoniae*, **according to sensitivities:**
 - First line: amoxicillin 500 mg-1 g 8 hourly.
 - Second line: clarithromycin 500 mg 12 hourly.
 - Third line: doxycycline 100 mg 12 hourly.
- Anaerobes, **according to sensitivities:**
 - First line: metronidazole 400 mg 8 hourly.
 - Second line: co-amoxiclav 625 mg 8 hourly.
 - Third line: clindamycin 300-450 mg 6 hourly.

Duration of Antibiotics

- 5-7 days.

Management of Periorbital/Preseptal Cellulitis



References

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Document Control

Development of guidelines:	Dr Chris Durojaiye, Angelina Dyche, Dr Ravi Kothari, Dr Julia Lacey, Dr Carlene Rowson, Dr Peter Slovak
Consultation with:	Antimicrobial Pharmacists, Infectious Diseases and OPAT Consultants, Microbiology Consultant, Radiology Consultant
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Key contacts:	Dr Peter Slovak, Microbiology Consultant p.slovak@nhs.net Kayleigh Lehal, Antimicrobial Pharmacist kayleigh.lehal@nhs.net