

Dental/Periapical Abscess in Adults – Microbiology Summary Clinical Guideline

Reference number: CG-MICRO/4309/24

Clinical concerns re dental/periapical abscess (symptoms and signs include odontalgia, temperature deficit, tenderness, swelling, and purulent discharge)

Investigation

- Radiology:
 - First line: x-ray (periapical ± orthopantomogram)
 - ± Second line: if clinical concerns re infection of the deep fascial spaces of the head and neck, in general, CT with contrast
- ± Microbiology:
 - If episode(s) of fever, or if the differential diagnosis includes bloodstream infection/[sepsis](#)/septic shock, or if for initiation of treatment with intravenous antibiotics:
 - Before starting antibiotics: blood cultures × 2, drawn approximately 1-15 minutes apart, from 2 locations/venepunctures
- ± Blood sciences:
 - ± FBC, CRP, lactate, U&Es, and LFTs:
 - E.g. if admitted for inpatient management

Treatment

- Surgical opinion ± intervention:
 - Consult with the maxillofacial registrar/consultant on call if a dental/periapical abscess has been diagnosed:
 - Surgical interventions may include: (i) incision and drainage; (ii) root canal; or (iii) extraction
- Empiric antibiotics (re per oral and intravenous options, please note pages 2 and 3)

Investigation (if maxillofacial intervention)

- Microbiology:
 - Extraoral needle aspirate for MC&S; and/or
 - Intraoperative fluid, pus, or tissue for MC&S

Treatment

- Empiric antibiotics:
 - If source control: 3-5 days from the maxillofacial intervention
 - If no source control: 5-7 days (5 days if no evidence of invasive bacterial disease [e.g. bacteraemia]; ≥ 7 days if bloodstream infectious disease)

Empiric, per oral antibiotic options

	No drug history of recent (in the past 2 weeks) amoxicillin chemotherapy	Drug history of recent (in the past 2 weeks) amoxicillin chemotherapy
First line	Phenoxymethylpenicillin 500 mg 6 hourly or amoxicillin 500 mg 8 hourly; \pm * Metronidazole 400 mg 8 hourly	Co-amoxiclav 625 mg 8 hourly
Second line, if penicillin allergy	Clindamycin 300 mg 6 hourly	Clindamycin 300 mg 6 hourly
Third line, if penicillin allergy and if clindamycin is contraindicated	Metronidazole 400 mg 8 hourly and Clarithromycin 500 mg 12 hourly	Metronidazole 400 mg 8 hourly and Clarithromycin 500 mg 12 hourly
Fourth line, if penicillin allergy and if clindamycin and clarithromycin are contraindicated	Metronidazole 400 mg 8 hourly and Levofloxacin 500 mg 12 hourly	Metronidazole 400 mg 8 hourly and Levofloxacin 500 mg 12 hourly
Fifth line, if penicillin allergy and if clindamycin, clarithromycin, and levofloxacin are contraindicated	Metronidazole 400 mg 8 hourly and Linezolid 600 mg 12 hourly	Metronidazole 400 mg 8 hourly and Linezolid 600 mg 12 hourly

* The National Institute for Clinical Excellence (NICE) states " Consider concomitant treatment with metronidazole if the infection is severe or spreading (lymph node involvement, or systemic signs such as fever or malaise)".

Empiric, intravenous antibiotic options

- If there is no clinical concern re [sepsis](#) and no history of immunocompromise:

First line, if there is no drug history of recent (in the past 2 weeks) amoxicillin chemotherapy	Metronidazole 500 mg 8 hourly and Benzylpenicillin 1.2 g 6 hourly
Second line, if there is drug history of recent (in the past 2 weeks) amoxicillin chemotherapy	Co-amoxiclav 1.2 g 8 hourly
Third line, if non-immediate without systemic involvement penicillin allergy	Metronidazole 500 mg 8 hourly and Cefuroxime 1.5 g 8 hourly
Fourth line, if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy	Metronidazole 500 mg 8 hourly and 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
Fifth line, if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy	Clindamycin 600 mg 8 hourly

- If there are clinical concerns re [sepsis](#) or history of immunocompromise:

First line	Piperacillin tazobactam 4.5 g 6 hourly \pm If there are clinical concerns regarding the
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	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
Second line, if non-immediate without systemic involvement penicillin allergy	Metronidazole 500 mg 8 hourly and 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 Ceftazidime 2 g 8 hourly
Third line, if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy	Metronidazole 500 mg 8 hourly; and Ciprofloxacin 400 mg 8 hourly; and 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
Fourth line, if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy and if metronidazole is contraindicated	Clindamycin 600 mg 8 hourly; and Aztreonam 2 g 6 hourly