# ENT Infections – Full Antibiotic Guideline

Reference no.: CG-ANTI/2017/29

## 1. Introduction

This guideline covers the causative organisms that are implicated in the development of common ear, nose and throat (ENT) infections and outlines the recommend treatment options.

## 2. Treatment guidelines

NOTE: The treatment guidelines are for empirical treatment, when the causative organism is unknown. Appropriate microbiological samples should be sent for culture and sensitivity testing prior to starting treatment, and treatment adjusted accordingly once results are available, aiming to use narrow spectrum agents where possible.

### 2a. Treatment guidelines for ENT infections

| Site of infection | Causative organisms | Antibiotic regime | Duration |
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| **Epiglottitis** | *Haemophilus influenzae* type b, *Streptococcus pneumoniae*, *Staphylococcus aureus*, including community-acquired methicillin-resistant *S. aureus* (MRSA) strains, *Streptococcus pyogenes* and other streptococci, *Neisseria meningitidis, Pasteurella multocida.* | First line - no penicillin allergy or if non-immediate without systemic involvement penicillin allergy: Ceftriaxone 2g intravenously 12 hourly **plus** metronidazole 500mg intravenously 8 hourly.<br><br>Second line - if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: discuss alternatives with a consultant microbiologist.<br><br>If there are clinical concerns regarding the risk of methicillin resistant *Staphylococcus aureus* (MRSA): add 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 | 7–10 days |

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| **Epistaxis -**<br><br>**Antibiotic prophylaxis for nasal packing** | *Staphylococcus aureus* | Anterior packing using Rhino Rapid – no prophylaxis required. | Maximum 5 days |
| | | Posterior packing, only if packing is in-situ for >48 hours or a Foley catheter is used.<br>First line - no penicillin allergy: Amoxicillin 500mg per oral 8 hourly **plus** metronidazole 400mg per oral 8 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy or if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: clindamycin 300mg per oral 6 hourly. | |
| **Malignant otitis externa** | See full trust guideline: https://derby.koha-ptfs.co.uk/cgi-bin/koha/opac-detail.pl?biblionumber=3947&query_desc=kw%2Cwrdl%3A%20malignant%20otitis | | |
| **Mastoiditis (acute)** | *Streptococcus pneumoniae* and *Streptococcus pyogenes.* Less commonly, *Fusobacterium necrophorum, Haemophilus influenzae and Stapylococcus aureus.* | First line - no penicillin allergy: Co-amoxiclav 1.2g intravenously 8 hourly or 625mg per oral 8 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy: Cefuroxime 1.5g intravenously 8 hourly **plus** metronidazole 500mg intravenously 8 hourly. Per oral step down when appropriate: cefaclor 500mg 8 hourly **plus** metronidazole 400mg 8 hourly.<br><br>Third line - if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: Glycopeptide (vancomycin or teicoplanin), dose as per hospital guidelines, vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 20-40 mg/l, **plus** metronidazole 500mg intravenously 8 hourly **plus** gentamicin dosed according to guideline. | 10 days |

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| **Mastoiditis (chronic)** | *Staphylococcus aureus*, *Pseudomonas aeruginosa, Streptococcus pneumoniae, Haemophilus influenzae* and enteric gram negative rods. | As per previous culture and sensitivity results. Discuss individual cases with consultant microbiologist. | Up to 6 weeks if osteomyelitis |
| **Parotitis/ sialodenitis if not thought to be due to mumps** | *Staphylococcus aureus* and anaerobes are the most common pathogens. | First line - no penicillin allergy: Flucloxacillin 2g intravenously 6 hourly. Per oral step down when appropriate: Flucloxacillin 1g 6 hourly. If there are concerns regarding poor oral hygiene or dentition, consider adding metronidazole 500mg intravenously 8 hourly or 400mg per oral 8 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy or if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: Clindamycin 600mg intravenously 6 hourly, switch to 450mg per oral 6 hourly when improved.<br><br>If known or suspected MRSA: add 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. If there are concerns regarding poor oral hygiene or dentition, consider adding metronidazole 500mg intravenously 8 hourly or 400mg per oral 8 hourly. | 10-14 days |
| **Tonsillitis (acute sore throat)** | Group A *Streptococcus*, or *Streptococcus pyogenes* | First line - no penicillin allergy: Phenoxymethylpenicillin 500mg per oral 6 hourly or 1000mg 12 hourly for 5-10 days. | 5-10 days |

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| | | Second line - if non-immediate without systemic involvement penicillin allergy or if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: clarithromycin 500mg per oral 12 hourly for 5 days.<br><br>See NICE guidelines for further information: https://www.nice.org.uk/guidance/ng84 | |
| **Quinsy (peri-tonsillar abscess)** | *Streptococcus pyogenes*, *Streptococcus anginosus*, *Staphylococcus aureus* (including methicillin-resistant S. aureus [MRSA]), and respiratory anaerobes (including *Fusobacteria,* *Prevotella,* and *Veillonella* species). | First line - no penicillin allergy: Benzylpenicillin 1.2g intravenously 6 hourly **plus** metronidazole intravenously 500mg 8 hourly. Per oral step down when appropriate: phenoxymethylpenicillin 500mg 6 hourly or 1g 12 hourly **plus** metronidazole 400mg 8 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy or if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: Clindamycin 600mg intravenously 6 hourly. Per oral step down when appropriate: clindamycin 450mg 6 hourly. | 5-10 days |
| **Sinusitis acute (if antibiotics needed)***<br><br>***Do not offer antibiotics if acute sinusitis symptoms for ≤10 days unless patient is systemically very unwell or at high risk of complications. Even prolonged** | *Streptococcus pneumoniae, Haemophilus influenzae* and *Moraxella catarrhalis.* | First-line - no penicillin allergy: Phenoxymethylpenicillin 500mg per oral 6 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy or if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: doxycycline 200mg per oral stat then 100mg once daily; or clarithromycin 500mg 12 hourly | 5 days |

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| **symptoms may still be of viral origin and self-limiting** | | **If symptoms worsen after 2–3 days' treatment with first line antibiotics:**<br>First-line - no penicillin allergy: co-amoxiclav per oral 625mg 6 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy: Cefaclor 500mg per oral 8 hourly **plus** metronidazole 400mg per oral 8 hourly.<br><br>If immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy, discuss with consultant microbiologist.<br><br>**Severe infection If patient presents systemically very unwell:**<br>First-line - no penicillin allergy: Co-amoxiclav 1.2g intravenously 8 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy: cefuroxime 1.5g intravenously 8 hourly **plus** metronidazole 500mg intravenously 8 hourly. Step down to per oral treatment when appropriate.<br><br>If immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy, discuss with consultant microbiologist. | |
| **Chronic rhinosinusitis (for ENT specialist use only)** | *F. nucleatum*, pigmented *Prevotella spp, Porphyromonas spp,* and *Peptostreptococcus spp). Streptococcus pneumonia, Staphylococcus aureus*, *Haemophilus influenzae* and | With nasal polyps - **consider** doxycycline 100mg per oral once daily for 3 weeks.<br><br>Without nasal polyps, especially if IgE not elevated - **consider** clarithromycin 250mg per oral 12 hourly for 3 months (NB: do not use macrolides in patients with significant history of cardiorespiratory disease or those taking statins) | 3 weeks |

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| | *Moraxella catarrhalis* may be involved in acute exacerbations. | | |
| **Deep neck space infections**<br><br>**For post-operative infections discuss with consultant microbiologist** | *Streptococcus anginosus* group, *Parvimonas micra*, other *Peptostreptococcus* species, *Fusobacterium nucleatum*, pigmented *Prevotella* species, and *Actinomyces* species. *Streptococcus Pyogenes*, *Staphylococcus aureus* and *Pseudomonas aeruginosa* can also be causative. | First line - no penicillin allergy: Piperacillin/tazobactam 4.5g intravenously 6 hourly.<br><br>Second line - if non-immediate without systemic involvement penicillin allergy: Ceftazidime 2g intravenously 8 hourly **plus** metronidazole 500mg intravenously 8 hourly.<br><br>Third line - if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: Clindamycin 600mg intravenously 6 hourly **plus** ciprofloxacin 400mg intravenously 8 hourly.<br><br>If first, second and third line options are unsuitable, please liaise with consultant microbiologist. | Minimum of 2-3 weeks |
| **Tooth abscess** | See Maxfax antibiotic guidelines on Koha - Trust Policies Procedures & Guidelines catalog › Details for: Oral and Maxillofacial Surgery - Antibiotic Guideline - Derby Sites Only (koha-ptfs.co.uk) | | |

**2b. Prophylaxis guidelines for ENT surgery**

| Site | Antibiotic regime | Duration |
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| **Open pharyngo-laryngeal surgery**<br><br>**and**<br><br>**transoral robotic surgery on the oropharynx** | First line – no penicillin allergy: Co-amoxiclav 1.2g intravenously on induction followed by co-amoxiclav 1.2g 8 hourly for two more doses.<br><br>Second line – if non-immediate without systemic involvement penicillin allergy: Cefuroxime 1.5g intravenously and metronidazole 500mg intravenously on induction followed by 750mg cefuroxime intravenously and 500mg intravenously metronidazole 8 hourly for two more doses.<br><br>Third line – If immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: Gentamicin 3mg/kg up to a maximum dose of 300mg IV single dose on induction. Doses up to 160mg can be given as a bolus over 3-5 mins. Doses >160mg to be added to 100ml sodium chloride 0.9% and infused over 30 mins<br>plus teicoplanin 6mg/kg rounded up to the nearest 200mg (max 800mg) single dose on induction plus metronidazole 500mg intravenously on induction followed by 500mg intravenously 8 hourly for 2 more doses. | May be continued for longer in patients with previous chemo-radio-therapy |
| **Transoral laser microsurgery** | Doxycycline per oral for 5 days if cartilage exposed during the procedure. | 5 days |

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## Documentation Controls

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| **Reference Number**<br><br>CG-ANTI/2017/29 | **Version:**<br>2 | | **Status**<br><br>Final |
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| | 2 | June 2022 | • New format<br>• UHDB guideline<br>• Introduction<br>• Addition of tonsillitis treatment<br>• Removal of malignant otitis externa<br>• Addition of causative organisms<br>• Addition of vancomycin if concerns of MRSA in epiglottitis<br>• Amended parotitis guidelines in penicillin allergy to recommend clindamycin.<br>• Addition of metronidazole in parotitis if poor oral hygiene.<br>• Amendment of deep neck space infections to provide *Pseuodmonal* cover. |
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| **Consultation with: ENT consultants, microbiology consultants** | | | |
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