LOWER RESPIRATORY TRACT INFECTIONS
Bronchiectasis in Adults

Clinical features

- An exacerbation of bronchiectasis is a sustained worsening of symptoms from a person's stable state. This could include increased cough, increased sputum volume or viscosity with or without increasing wheeze, breathlessness, haemoptysis or systemic upset.
- The patient must have a diagnosis of bronchiectasis made on previous CT or bronchogram.

Core pathogens

S. pneumoniae, H. influenzae, Moraxella catarrhalis, S. aureus, P. aeruginosa
NB: Exacerbations can be viral or non-infective

Samples to be taken prior to starting antimicrobial

- Obtain a sputum sample for bacterial culture
- If known to be colonised with multi-resistant bacteria such as Pseudomonas, refer for specialist advice as empirical treatment unlikely to be active and may require IV therapy.
- If sputum cultures show Pseudomonas aeruginosa for the first time, consider specialist referral for eradication therapy.

Management

If there are signs of a serious illness such as pneumonia, sepsis or cardiorespiratory failure – **Needs referral for urgent admission**

Seek specialist advice if:
• symptoms do not improve with repeated courses of antimicrobials
• bacteria are resistant to oral antimicrobials
• the person cannot take oral medicines (to explore giving intravenous antimicrobials at home or in the community if appropriate)

Treatment

Offer an antimicrobial to people with an acute exacerbation taking into account previous sputum culture and sensitivity results.

Empirical antimicrobial choice for adults with bronchiectasis and **no** previous sputum growth of *Pseudomonas Aeruginosa* (whilst sputum culture results are awaited) in order of preference.

	Antimicrobial	Dosage and course length
First line (not in penicillin allergy)	Amoxicillin	500mg three times a day for 14 days
Second line	Doxycycline	100mg twice a day on day one, then 100mg once a day for a total of 14 days
Third line (not in penicillin allergy)	Co-amoxiclav	625mg PO three times a day for 14 days
Fourth line	Clarithromycin*	500mg PO twice a day for 14 days

Empirical antimicrobial choice in adults **with** a previous sputum growth of ciprofloxacin sensitive *Pseudomonas aeruginosa* (whilst sputum culture results are awaited). If previous or current ciprofloxacin resistant *Pseudomonas aeruginosa* seek specialist advice as no other oral options.

Antimicrobial	Dosage and course length
Ciprofloxacin*^	500mg PO twice a day for 14 days

*Avoid if the patient is at risk of QTc prolongation.

^Note fluoroquinolones can cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. Please refer here for further information on MHRA alerts.

Further review

Review choice of antibiotic treatment with sputum culture results and response to initial therapy.

Organism	Antimicrobial "I"** Susceptible	Drug, Dosage and Course Length
Pseudomonas aeruginosa	Ciprofloxacin*^	Ciprofloxacin 750mg BD for 14 days
Haemophilus influenzae	Amoxicillin	Amoxicillin 1g TDS for 14 days
	Co-amoxiclav	Co-amoxiclav 625mg *prescribe with* Amoxicillin 500mg TDS

** "I" = susceptible at **increased medication exposures**. This means there is a high likelihood of therapeutic success if antibiotic exposure is optimised by using higher doses or increasing dosing frequency.
Microbiology interpreting Sensitivity Results
^Note fluoroquinolones can cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. Please refer here for further information on MHRA alerts.

People who may be at higher risk of treatment failure include people who have had repeated courses of antibiotics or a previous sputum culture with resistant or atypical organisms.

Adapted from - Management of acute infective exacerbation of non cystic-fibrosis bronchiectasis in adults over 18 years. NUH

- Recommended doses for "I" susceptible at increased drug exposure. NUH

Bronchiectasis (non-cystic fibrosis), acute exacerbation: antimicrobial prescribing
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