

 Send a sputum sample for culture and susceptibility testing

- Offer an antibiotic

Advise:

- possible adverse effects of antibiotics, in particular diarrhoea
- seeking medical help if symptoms worsen rapidly or significantly at any time, or the person becomes systemically very unwell

 When results of sputum culture are available:

- review choice of antibiotic
- only change antibiotic according to susceptibility results if bacteria are resistant and symptoms are not already improving, using narrow spectrum antibiotics when possible

 Do not routinely offer antibiotic prophylaxis

- Seek specialist advice for management of repeated exacerbations, which may include a trial of antibiotic prophylaxis

Reassess at any time if symptoms worsen rapidly or significantly, taking account of:

- other possible diagnoses, such as pneumonia
- symptoms or signs of something more serious, such as cardiorespiratory failure or sepsis
- previous antibiotic use, which may have led to resistant bacteria

 Refer to hospital if the person has any symptoms or signs suggesting a more serious illness or condition (for example, cardiorespiratory failure or sepsis).

Seek specialist advice if:

- symptoms do not improve with repeated courses of antibiotics
- bacteria are resistant to oral antibiotics
- the person cannot take oral medicines (to explore giving intravenous antibiotics at home or in the community if appropriate)

 **Background**

- An acute exacerbation of bronchiectasis is sustained worsening of symptoms from a person's stable state

 **Antibiotics - treatment**

When choosing antibiotics, take account of:

- the severity of symptoms
- previous exacerbations, hospitalisations and risk of complications
- previous sputum culture and susceptibility results

- Give oral antibiotics first line if possible

 **Antibiotics - prophylaxis**

- Only start a trial of antibiotic prophylaxis on specialist advice
- When considering antibiotic prophylaxis, discuss the possible benefits (reduced exacerbations), harms (increased antimicrobial resistance, adverse effects and interactions with other medicines) and the need for regular review

Choice of antibiotic for treating an acute exacerbation: adults aged 18 years and over

Antibiotic ^{1,2}	Dosage and course length
First choice oral antibiotics for empirical treatment in the absence of current susceptibility data (guided by most recent sputum culture and susceptibilities where possible)	
Amoxicillin ³	500 mg three times a day for 7 to 14 days ⁴
Doxycycline	200 mg on first day, then 100 mg once a day for 7- to 14-day course in total ⁴
Clarithromycin	500 mg twice a day for 7 to 14 days ⁴
Alternative choice oral antibiotics (if person at higher risk of treatment failure ⁵) for empirical treatment in the absence of current susceptibility data (guided by most recent sputum culture and susceptibilities where possible)	
Co-amoxiclav	500/125 mg three times a day for 7 to 14 days ⁴
Levofloxacin ⁶	500 mg once or twice a day for 7 to 14 days ⁴
First choice intravenous antibiotics (if unable to take oral antibiotics or severely unwell) for empirical treatment in the absence of current susceptibility data (guided by most recent sputum culture and susceptibilities where possible) ⁷	
Co-amoxiclav	1.2 g three times a day
Piperacillin with tazobactam	4.5 g three times a day, increased if necessary to 4.5 g four times a day
Levofloxacin ⁶	500 mg once or twice a day
When current susceptibility data available, choose antibiotics accordingly	
Consult local microbiologist as needed	
<p>¹ See BNF for use and dosing in specific populations, for example hepatic and renal impairment, pregnancy and breastfeeding, and for administering intravenous antibiotics.</p> <p>² Where a person is receiving antibiotic prophylaxis, treatment should be with an antibiotic from a different class.</p> <p>³ Amoxicillin is the preferred choice in women who are pregnant.</p> <p>⁴ Course length based on an assessment of the person's severity of bronchiectasis, exacerbation history, severity of exacerbation symptoms, previous culture and susceptibility results, and response to treatment.</p> <p>⁵ People who may be at higher risk of treatment failure include people who have had repeated courses of antibiotics, a previous sputum culture with resistant or atypical bacteria, or a higher risk of developing complications.</p> <p>⁶ The European Medicines Agency's Pharmacovigilance Risk Assessment Committee has recommended restricting the use of fluoroquinolone antibiotics following a review of disabling and potentially long-lasting side effects mainly involving muscles, tendons, bones and the nervous system. This includes a recommendation not to use them for mild or moderately severe infections unless other antibiotics cannot be used (press release October 2018).</p> <p>⁷ Review intravenous antibiotics by 48 hours and consider stepping down to oral antibiotics where possible for a total antibiotic course of 7 to 14 days.</p>	

Choice of antibiotic for treating an acute exacerbation: children and young people under 18 years

Antibiotic ^{1,2}	Dosage and course length ³
First choice oral antibiotics for empirical treatment in the absence of current susceptibility data (guided by most recent sputum culture and susceptibilities where possible)	
Amoxicillin ⁴	1 to 11 months, 125 mg three times a day for 7 to 14 days ⁵ 1 to 4 years, 250 mg three times a day for 7 to 14 days ⁵ 5 to 17 years, 500 mg three times a day for 7 to 14 days ⁵
Clarithromycin	1 month to 11 years: Under 8 kg, 7.5 mg/kg twice a day for 7 to 14 days ⁵ ; 8 to 11 kg, 62.5 mg twice a day for 7 to 14 days ⁵ 12 to 19 kg, 125 mg twice a day for 7 to 14 days ⁵ ; 20 to 29 kg, 187.5 mg twice a day for 7 to 14 days ⁵ 30 to 40 kg, 250 mg twice a day for 7 to 14 days ⁵ 12 to 17 years, 250 mg to 500 mg twice a day for 7 to 14 days ⁵
Doxycycline	12 to 17 years, 200 mg on first day, then 100 mg once a day for a 7- to 14-day course in total ⁵
Alternative choice oral antibiotics (if person at higher risk of treatment failure ⁶) for empirical treatment in the absence of current susceptibility data (guided by most recent sputum culture and susceptibilities where possible)	
Co-amoxiclav	1 to 11 months, 0.25 ml/kg of 125/31 suspension three times a day for 7 to 14 days ⁵ 1 to 5 years, 5 ml of 125/31 suspension three times a day or 0.25 ml/kg of 125/31 suspension three times a day for 7 to 14 days ⁵ 6 to 11 years, 5 ml of 250/62 suspension three times a day or 0.15 ml/kg of 250/62 suspension three times a day for 7 to 14 days ⁵ 12 to 17 years, 250/125 mg three times a day or 500/125 mg three times a day for 7 to 14 days ⁵
Ciprofloxacin (on specialist advice) ⁷	1 to 17 years, 20 mg/kg twice a day (maximum 750 mg per dose) for 7 to 14 days ⁵
First choice intravenous antibiotics (if unable to take oral antibiotics or severely unwell) for empirical treatment in the absence of current susceptibility data (guided by most recent sputum culture and susceptibilities where possible) ⁸	
Co-amoxiclav	1 to 2 months, 30 mg/kg twice a day 3 months to 17 years, 30 mg/kg three times a day (maximum 1.2 g three times a day)
Piperacillin with tazobactam	1 month to 11 years, 90 mg/kg three or four times a day (maximum 4.5 g four times a day) 12 to 17 years, 4.5 g three times a day, increased if necessary to 4.5 g four times a day
Ciprofloxacin (on specialist advice) ⁷	1 to 17 years, 10 mg/kg three times a day (maximum 400 mg per dose)
When current susceptibility data available, choose antibiotics accordingly	
Consult local microbiologist as needed	
<p>¹See BNF for children for appropriate use and dosing in specific populations, for example hepatic impairment and renal impairment, and for administering intravenous antibiotics.</p> <p>²Where a person is receiving antibiotic prophylaxis, treatment should be with an antibiotic from a different class.</p> <p>³The age bands apply to children of average size and, in practice, the prescriber will use the age bands in conjunction with other factors such as the severity of the condition and the child's size in relation to the average size of children of the same age.</p> <p>⁴Amoxicillin is the preferred choice in young women who are pregnant.</p> <p>⁵Course length based on an assessment of the person's severity of bronchiectasis, exacerbation history, severity of exacerbation symptoms, previous culture and susceptibility results, and response to treatment.</p> <p>⁶People who may be at higher risk of treatment failure include people who have had repeated courses of antibiotics, a previous sputum culture with resistant or atypical bacteria, or a higher risk of developing complications.</p> <p>⁷The European Medicines Agency's Pharmacovigilance Risk Assessment Committee has recommended restricting the use of fluoroquinolone antibiotics following a review of disabling and potentially long-lasting side effects mainly involving muscles, tendons, bones and the nervous system. This includes a recommendation not to use them for mild or moderately severe infections unless other antibiotics cannot be used (press release October 2018).</p> <p>⁸Review intravenous antibiotics by 48 hours and consider stepping down to oral antibiotics where possible for a total antibiotic course of 7 to 14 days.</p>	