Guidelines for Managing Individual Chest Infections in Non-CF Bronchiectasis in Primary Care

Do NOT diagnose a chest infection based ONLY on a positive sputum sample **sent for routine microbiology**

Chest Infection/Exacerbations

Worsening of 3 or more of key symptoms for ≥ 48 hours

• *cough* • *sputum volume and/or consistency*
• *sputum purulence* • *fatigue* • *haemoptysis*
• *breathlessness and/or exercise tolerance*

Indications for Admission

- Cyanosis or confusion
- Respiratory rate ≥ 25/min
- Temperature ≥ 38°C
- Circulatory Failure
- O2 sats < 93% room air
- Unable to take oral therapy
- Not coping at home
- IV therapy is needed after failure to respond to oral antibiotics (if domiciliary IV therapy is not feasible)

- **Send sputum for routine culture & start empirical antibiotics** for 14 days* based on past sputum cultures & sensitivities *(see table 1 for recommended antibiotics for common sputum pathogens)*
- **If no previous sputum culture***: amoxicillin 500mg TDS or doxycycline 100mg BD (if penicillin allergic) for 14 days**

↑ Frequency of Chest Physiotherapy (chest clearance) and ↑ Fluid intake

Advise patient chest infections can take up to 2 weeks to resolve but if worsening symptoms**
OR no improvement after a week*** then to seek medical advice

Chest infection resolved after course of antibiotics?

Yes → Continue Regular Management

No

Review sputum microbiology and sensitivities
Emphasize importance of chest physiotherapy

If no sputum sent for culture OR sputum results show no pathogens
OR sputum results grows a pathogen sensitive to prescribed antibiotics

- Send further sputum for routine culture
- Extend antibiotics to a total of 14 days (if only had 7 days)
- Prescribe different antibiotic for 14 days guided by the most recent sputum culture and sensitivities

Current antibiotics NOT sensitive

- Prescribe different antibiotic guided by sputum culture and sensitivities for 14 days.

Chest Infection Resolved?

Yes → Continue Regular Management

No

≥ 2 antibiotics courses? (if the patient is unwell refer to secondary care)

Yes → Refer to secondary care for advice and/or consideration of IV antibiotics

No → Review sputum microbiology and sensitivities

*** 7 days may be considered for mild bronchiectasis**

**** For patients with worsening symptoms**

- Review sputum culture & sensitivities.
- Consider changing antibiotics based on recent sputum sensitivities and review as clinically indicated.

If patient is UNWELL, then refer to secondary care for advice and/or IV antibiotics.

***** For patients with no improvement (but not worse) in the first week**

- Review sputum culture & sensitivities.
- If current antibiotic is resistant consider changing antibiotics based on recent sputum sensitivities.
- Otherwise send a further sputum sample for routine culture and continue with the current course of antibiotics (for 14 days).

Advise patients to seek medical advice if worse or chest infection does not resolve. If patient is UNWELL refer to secondary care for advice and/or IV antibiotics.

Sputum Pathogen	Antibiotics (14 days)
Haemophilus Influenzae* β-*lactamase negative	Amoxicillin 500mg TDS **or** doxycycline 100mg BD
Haemophilus Influenzae* β-*lactamase positive	Co-amoxiclav 625mg TDS **or** doxycycline 100mg BD
Moraxella catarrhalis	Co-amoxiclav 625mg **or** doxycycline 100mg BD
Streptococcus pneumonia	Amoxicillin 500mg TDS **or** doxycycline 100mg BD
Staphylococcus aureus	Flucloxacillin 500mg QDS **or** clarithromycin† 500mg BD
Pseudomonas aeruginosa	Ciprofloxacin 500mg BD††
Methicillin-resistant Staphylococcus aureus (MRSA)	Doxycycline 100mg BD

Table 1: Recommended antibiotics and doses for common sputum pathogens found in bronchiectasis.

† Macrolide antibiotics (including short courses) can prolong QTc interval. Advise patients to monitor for dizziness or palpitations especially in patients with pre-existing cardiac disease.

†† Patients should be **advised to stop ciprofloxacin (and other fluoroquinolones) at first sign of tendon pain, muscle pain, muscle weakness, joint pain, joint swelling and peripheral neuropathy**. Adverse events **include tendonitis and tendon rupture** as well as **peripheral neuropathy**. Other side-effects include photosensitivity, joint pain, joint swelling, muscle pain and muscle weakness.

- **Do not use in patients with a history of serious adverse reaction (e.g. tendon damage) to ciprofloxacin or other fluoroquinolones.**
- Co-administration of corticosteroids and fluoroquinolones should be avoided if possible as there is increased risk of tendon damage.
- **Prescribe with caution** in people over 60 years old, with renal impairment and solid organ transplants as there is a higher risk of tendon injury.

For further information (including other side-effects) see 'MHRA sheet to discuss measures with patients' (https://assets.publishing.service.gov.uk/media/5c9364c6e5274a48edb9a9fa/FQ-patient-sheet-final.pdf).

Note: patients can still respond to some antibiotics ('in vivo') even if the sputum results show antibiotic resistance to the sputum pathogen 'in vitro'. Only change antibiotics if the patient is not clinically improving. Several days of antibiotics may be needed before starting to see an improvement, especially in patients with more severe bronchiectasis.