



Definitions:

Acute Bronchitis (AB)

An acute illness, occurring in a patient without chronic lung disease, with symptoms including cough, which may or may not be productive and associated with other symptoms or clinical signs that suggest LRTI, and no alternative explanation (e.g. sinusitis or asthma) with normal chest x-ray and it may last for up to 3 weeks (Uncomplicated acute bronchitis).

The diagnosis of complicated acute bronchitis should be considered if patient has a temperature $\geq 38^{\circ}\text{C}$, heart rate (HR) > 100 , respiratory rate (RR) > 24 , or persistent sputum production beyond 3 weeks.

Acute exacerbation of COPD (AECOPD)

An exacerbation of COPD is an acute event in the natural course of the disease characterized by a worsening of the patient's baseline respiratory symptoms that is beyond normal day-to-day variation sufficient to warrant a change in management. If chest radiograph shadowing, consistent with infection, is present the patient is considered to have CAP.

AECOPD types (Anthonisen types):

Type I - severe exacerbations with all three clinical findings (dyspnea, coughing, sputum production), Type II - moderate exacerbations with only two findings. Type III - mild exacerbations with one finding, together with at least one of the following (URTI in the past five days, Fever without any other cause, Increased wheezing, Increased cough, 20% increase above baseline in the respiratory or heart rate).

Indications for antibiotic treatment of AECOPD:

- Type I exacerbation.
- Type II exacerbation when increased purulence of sputum is one of the two cardinal symptoms.
- Severe exacerbation requiring mechanical ventilation.
- Antibiotics are generally not recommended in Anthonisen type II without purulence and type III patients.

Recommended Antibiotic therapy for AB and AECOPD

Illness	Category	Antibiotic Therapy
Acute bronchitis	Uncomplicated acute bronchitis	Antibiotics are not recommended
	Complicated acute bronchitis (pre-existing comorbidities, Patients >65 years)	Azithromycin 500 mg daily for 5 days Clarithromycin 500mg/12hours for 7 days
AECOPD	Uncomplicated AECOPD: No risk factors for poor outcome	<ul style="list-style-type: none"> • Advanced macrolide (azythromycin, clarithromycin) • Cephalosporins 2nd or 3rd generation
	Complicated AECOPD: Risk factor(s) for poor outcome#	<ul style="list-style-type: none"> • β-lactam/β-lactamase inhibitor (Co-amoxiclav, ampicillin/ sulbactam) • Fluoroquinolone (Gemifloxacin, Levofloxacin, Moxifloxacin)
	Complicated AECOPD: Risk factor(s) for P. aeruginosa infection*	<ul style="list-style-type: none"> • Fluoroquinolone (Ciprofloxacin, Levofloxacin – high dose[^]) • Piperacillin-tazobactam

#Risk factors for poor outcome in patients with AECOPD: presence of comorbid diseases, severe COPD, frequent exacerbations ($>3/\text{yr}$), and antimicrobial use within last 3 months. **P. aeruginosa should be considered in the presence of at least two of the following** [recent hospitalization, frequent (>4 courses per year) or recent administration of antibiotics (last 3 months), severe disease (FEV1 $< 30\%$), oral steroid use (>10 mg of prednisolone daily in the last 2 weeks)].

Classes of antibiotics are provided (with specific agents in parentheses). Choice should be based on local bacteria resistance patterns.

[^] Dose 750 mg/24 h effective against P. aeruginosa.

The recommended length of antibiotic treatment is usually 5-10 days.

All patients with symptoms of a COPD exacerbation should be treated with additional bronchodilators \pm glucocorticosteroids.