

Health PEI Empiric Antimicrobial Management of Acute Exacerbation of Chronic Obstructive Pulmonary Disease

Criteria				
<ul style="list-style-type: none"> Antimicrobial therapy is only recommended in patients with AECOPD exhibiting all 3 cardinal symptoms; those who have 2 of 3 cardinal symptoms if increased sputum purulence is one of them; or those who require mechanical ventilation (invasive or non-invasive). <u>Cardinal symptoms:</u> <ol style="list-style-type: none"> Increased dyspnea Increased sputum volume Increased sputum purulence If patient has been on antimicrobial therapy in the last 3 months (regardless of clinical success) the therapy chosen should be a regimen based on a different mechanism of action. 				
Disease Stratification	Acute Bronchitis	Simple ¹ (Low-risk patients)	Complicated ² (High risk patients)	Patients at risk for <i>P. aeruginosa</i> ³
Likely Pathogen	Generally viral	<i>Streptococcus pneumoniae</i> <i>Haemophilus influenzae</i> <i>Moraxella catarrhalis</i>	As with simple PLUS: Gram-negatives, increased beta-lactam resistance	As with simple PLUS: <i>Pseudomonas aeruginosa</i>
Preferred Therapy	Antimicrobial therapy not recommended (May provide symptom management)	1. doxycycline 100 mg PO BID OR 2. cefuroxime 500 mg PO BID	1. amoxicillin/clavulanate 500 mg PO TID OR 2. cefuroxime 500 mg PO BID <u>IV option:</u> ceftriaxone 1 g IV q24h	1. cefuroxime 500 mg PO BID PLUS ciprofloxacin 750 mg PO BID <u>IV option:</u> cefuroxime 750 mg IV q8h PLUS ciprofloxacin 400 mg IV q12h
Alternative Therapy	n/a	1. clarithromycin 500 mg PO BID OR 2. sulfamethoxazole/ trimethoprim 800/160 mg PO BID	levofloxacin 500 mg PO daily <u>IV option:</u> levofloxacin 500 mg IV q24h	<i>If patient received a fluoroquinolone in the past 6 mths:</i> piperacillin-tazobactam 4.5 g IV q6h
Duration	n/a	5 days	5 - 7 days	10 - 14 days

- Simple (low risk) patients: No risk factors. Patient characteristics include: age less than 65 years, FEV1 greater than 50% predicted, less than 4 exacerbations/year, no cardiac disease, no radiographic evidence of pneumonia.
- Complicated (high risk) patients: At least 1 of: age greater than 65 years, FEV1 less than 50% predicted, 4 or more exacerbations/year, cardiac disease, use of home oxygen, chronic use of corticosteroids, antibiotic use in past 3 months. Choose 7 days of therapy if patient is on chronic steroids.
- Patients at risk for *Pseudomonas aeruginosa* infection: Risk factors: FEV1 less than 35% predicted, bronchiectasis, recent hospitalization, or multiple courses of antibiotics. Two anti-pseudomonal agents are generally not required due to local susceptibilities and lack of severe infectious disease. Choose 10 days of therapy for suspected pseudomonas or 14 days if known bronchiectasis.

Health PEI Empiric Antimicrobial Management of Acute Exacerbation of Chronic Obstructive Pulmonary Disease

References

1. Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease (2020 Report)
2. Vogelmeier, C. F. et al. (2017). Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report: GOLD Executive Summary. *European Respiratory Journal*, 49(3), 1700214.
3. Bourbeau, J. et al. (2019). Canadian Thoracic Society Clinical Practice Guideline on pharmacotherapy in patients with COPD – 2019 update of evidence. *Canadian Journal of Respiratory, Critical Care, and Sleep Medicine*, 3(4), 210–232.
4. Siempos II, Dimopoulos G, Korbila IP et al. (2007). Macrolides, Quinolones and amoxicillin/clavulanate for chronic bronchitis: a meta-analysis. *Eur Respir J*, 29:1127 – 1137.
5. Wilson R, Anzueto A, Miravittles M et al. (2012). Moxifloxacin versus amoxicillin/clavulanic acid in outpatient acute exacerbations of COPD: Maestral results. *Eur Respir J*, 40:17 – 27.
6. Wilson R, Sethi S, Anzueto A et al. (2013). Antibiotics for treatment and preventions of exacerbations of chronic obstructive pulmonary disease. *Journal of Infection*, 67, 497 – 515.
7. Sethi S, Murphy TF. Management of infection in exacerbations of chronic obstructive pulmonary disease. UpToDate. Accessed February 2021.
8. Anti-infective Review Panel. (2013). Anti-Infective Guidelines for Community-Acquired Infections. Toronto: MUMS Guideline Clearinghouse.
9. Blondel-Hill E, Fryters S. (2021). Acute exacerbation of chronic bronchitis (AECB). *Bugs & Drugs*. Accessed February 2021. <https://www.bugsanddrugs.org/B7018F68-24F4-4E6E-A842-189948D8A4F6>.
10. NB Provincial Health Authorities Anti-Infective Stewardship Committee. (2019). Antimicrobial Therapy for Acute Exacerbation of Chronic Obstructive Pulmonary Disease. Accessed February 2021.
11. Auwaerter PG. (2020). Exacerbations of Chronic Obstructive Pulmonary Disease (COPD). *Johns Hopkins ABX Guide*. Accessed February 2021.