ACUTE BRONCHITIS (ADULT)

Overview
Acute bronchitis is overwhelmingly a viral illness, typically with a prolonged cough. It must be differentiated from pneumonia to both reduce inappropriate use of antibiotics and avoid undertreatment of potentially serious bacterial pneumonia.¹

Diagnosis considerations
Acute onset of cough which may be accompanied by fever, sputum, and chest discomfort.¹ Cough may be productive or non-productive, and normally lasts 1 to 3 weeks.² Fever should last no more than 3 days.

Bronchitis vs. Pneumonia Key Points
- Purulent (green/yellow) sputum can be caused by viral or bacterial infection², and is merely an indicator of inflammation¹
- Pneumonia is unlikely if vitals are normal (HR<100, RR<24, T<38) and there is no focal consolidation suggested by chest exam.³

Bronchitis:
Overwhelmingly viral etiology, antibiotics are not indicated.¹,²
Chest exam is usually normal, but may reveal wheezes.¹

Red flags: Localized crackles or bronchial breath sounds should prompt chest X-ray to r/o pneumonia.

Differential Dx: Pneumonia, asthma, AECOPD, Pertussis, postnasal drip, reflux, foreign body aspiration

Investigations: Not routinely required if no evidence of pneumonia and typical presentation

Management considerations
Non-pharmacologic options: Increased humidity and hydration may help to manage cough²
Preventative measures: Smoking cessation, avoidance of second-hand smoke, hand washing¹,²

Pharmacologic options:
Reasonable to initiate symptomatic therapy especially if symptoms are interfering with daily activities and sleep.
- Opioid-based cough suppressants (e.g. Hycodan®, codeine) should be used as second line agents and prescribed in small amounts for comfort only,² do not shorten duration of illness.
- Bronchodilators (e.g. Salbutamol) may offer some improvement of protracted cough¹
- Inhaled corticosteroids are not recommended (insufficient evidence of benefit)¹ – but may be helpful in the presence of asthma. Oral corticosteroids may have role for patients presenting with exacerbation of chronic bronchitis/COPD.
- Antibiotics only indicated for productive cough lasting more than 10 – 14 days. May be caused by B. pertussis (underdiagnosed, often cough accompanied by vomiting, paroxysmal cough, whoop on inhalation)¹,³. Acute bronchitis may also be caused by M. pneumonia or C. pneumoniae, however, the role of antibiotics has not been established.¹

Key Points: Following viral infection, prolonged cough alone does not merit antibiotic therapy.
- 45% of patients cough after 2 weeks
- 25% of patients cough after 3 weeks¹

Pharmacologic options for bronchitis

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Indication</th>
<th>Contraindications/Cautions</th>
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</thead>
<tbody>
<tr>
<td>Salbutamol (Ventolin)</td>
<td>MDI 1-2 puffs q4h PRN</td>
<td>For symptomatic treatment only</td>
<td>Use with caution in patients with cardiovascular disease³</td>
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<tr>
<td>Dextromethorphan</td>
<td>15-30mg q6-8h; max: 120mg/d</td>
<td>Symptomatic treatment</td>
<td>s/e: Drowsiness, nausea, constipation Avoid MAOI inhibitors &amp; 2D6 inhibitors (e.g. fluoxetine) – increase DM levels and risk of serotonin syndrome</td>
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<tr>
<td>Codeine (Hycodan)</td>
<td>10-20 mg/ dose every 4-6 hours as needed; maximum: 120 mg/ day</td>
<td>For symptomatic treatment only</td>
<td>Drug abuse, significant respiratory disease⁴</td>
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<tr>
<td>Only for B. pertussis (paroxysmal cough, +/- cough-induced vomiting, +/- whoop on inhalation)²</td>
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<tr>
<td>Erythromycin (First line)</td>
<td>1-2g/day divided BID-QID x 7 days</td>
<td>Pertussis of &lt;3 weeks duration</td>
<td>QT prolongation, drug interactions, caution in hepatic impairment. Frequent GI side effects⁵</td>
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<tr>
<td>Clarithromycin (second line)</td>
<td>250-500 mg BID x 5-7 days</td>
<td>Pertussis of &lt;3 weeks duration</td>
<td>QT prolongation, drug interactions, caution in hepatic or renal impairment. Possible GI side effects⁶</td>
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<tr>
<td>Azithromycin (Second line)</td>
<td>500mg x 1 then 250 mg x 4 days</td>
<td>Pertussis of &lt;3 weeks duration</td>
<td>QT prolongation (less significant), drug interactions, caution in hepatic or renal impairment. Possible GI side effects⁷</td>
</tr>
</tbody>
</table>

*Antibiotic not indicated after 3 weeks of cough (no longer infectious, and antibiotics do not alter clinical course, only decrease transmission), notify public health, and offer prophylaxis to household contacts³

Bottom line: Acute bronchitis is a viral illness that may cause protracted cough, which does not benefit from antibiotics. Patients should be advised of expected duration, and indications for follow-up.

References can be found online at http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm

Dr. Michael Evans developed the One-Pager concept to provide clinicians with useful clinical information on primary care topics.