5.11: Anticholinergics

Ipratropium is an example of a short-acting anticholinergic. Tiotropium is an example of a long-acting anticholinergic. Additional information regarding anticholinergics can be found in the “Autonomic Nervous System” chapter. (See Figure 5.13 for an image of tiotropium.)

Figure 5.13 Tiotropium, a long-acting anticholinergic

Mechanism of Action

Anticholinergics block the action of acetylcholine in bronchial smooth muscle, which reduces bronchoconstrictive
substance release.

**Indications for Use**

Anticholinergics are used for maintenance therapy of bronchoconstriction associated with asthma, chronic bronchitis, and emphysema.

**Adverse/Side Effects**

Anticholinergics should be used with caution with the elderly and can cause cough, drying of the nasal mucosa, nervousness, nausea, GI upset, headaches, and dizziness. \[2\]

**Patient Teaching & Education**

Patients should be instructed to use the inhaler as directed and be careful not to exceed dosage recommendations. They should receive education regarding the onset of medication and differences in usage for short- and long-acting anticholinergics. Some long-acting anticholinergics may cause signs of angioedema and the healthcare provider should be notified if this occurs. \[3\]

Now let’s take a closer look at the medication grid for ipratropium and tiotropium in Table 5.11. \[4\] \[5\] \[6\] \[7\]

**Table 5.11 Ipratropium and Tiotropium Medication Grid**

<table>
<thead>
<tr>
<th>Class/ Subclass</th>
<th>Prototype/ Generic</th>
<th>Administration Considerations</th>
<th>Therapeutic Effects</th>
<th>Adverse/ Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticholinergics (short acting)</td>
<td>ipratropium</td>
<td>Long-term management of pulmonary disease Slower onset of action</td>
<td>Rapid bronchodilation</td>
<td>Cough and drying of the nasal mucosa</td>
</tr>
<tr>
<td>Anticholinergics (long acting)</td>
<td>tiotropium</td>
<td>Long-term management of pulmonary disease Slower onset of action</td>
<td>Prevention of bronchospasm and reduces exacerbations in COPD patients</td>
<td>Cough and drying of the nasal mucosa</td>
</tr>
</tbody>
</table>

1. “Spiriva HandiHaler”-brand dry powder inhaler (open).png” by RonEJ at English Wikipedia is licensed under CC0 1.0
3. uCentral from Unbound Medicine. https://www.unboundmedicine.com/ucentral
4. This work is a derivative of Pharmacology Notes: Nursing Implications for Clinical Practice by Gloria Velarde licensed under CC BY-NC-SA 4.0.

6. This work is a derivative of Daily Med by U.S. National Library of Medicine in the public domain.