



## Summary of medications commonly used for patients with aspirin-exacerbated respiratory disease (AERD)

### **Inhaled corticosteroids or combination inhaled corticosteroid + long-acting bronchodilator**

*These medications are frequently used to treat asthma symptoms and are generally recommended to be taken every day, either once a day or twice a day. The inhaled corticosteroid component is intended to decrease the inflammation in the lungs, and the inhaled long-acting bronchodilator is intended to open up the lungs throughout the day and can be thought of as "long-acting albuterol". All medications in this class are prescription-only.*

- Flovent® (fluticasone = steroid-only inhaler)
- QVAR® (beclomethasone = steroid-only inhaler)
- Pulmicort Flexhaler® (budesonide = steroid-only inhaler)
- Alvesco® (ciclesonide = steroid-only inhaler)
- Aerospa® (flunisolide = steroid-only inhaler)
- Asmanex® (mometasone = steroid-only inhaler)
  
- Advair® (fluticasone + salmeterol = combination inhaler)
- Wixela® (fluticasone + salmeterol = combination inhaler) (generic)
- Symbicort® (budesonide + formoterol = combination inhaler)
- Dulera® (mometasone + formoterol = combination inhaler)
- Breo Ellipta® (fluticasone + vilanterol = combination inhaler)

### **Intranasal corticosteroid sprays and rinses**

*These medications are frequently used to treat nasal congestion and nasal polyps, and are generally recommended to be taken every day, either once a day or twice a day. When the corticosteroid is sprayed or rinsed directly into the nose and sinuses, it can help to decrease the inflammation and swelling in those areas. Some medications in this class are available OTC.*

- Flonase® (fluticasone spray) – available OTC
- Nasacort® (triamcinolone spray – available OTC)
- Rhinocort® (budesonide spray) – available OTC)
- Nasonex® (mometasone spray) – available only as a prescription
- Pulmicort Respules® (budesonide suspension liquid) – available only as a prescription, to be used either mixed in a saline sinus rinse solution, or instilled directly into the nostrils
- Xhance® – fluticasone spray in a new delivery mechanism – prescription only

### **Anti-leukotriene medications**

*Patients with AERD usually produce very high levels of inflammatory mediators called leukotrienes, and these contribute to a lot of the symptoms patients experience. All medications in this class are prescription-only.*

- Singulair® (montelukast) ⇒ This is a pill taken once a day that blocks one of the receptors for leukotrienes. It is available by prescription-only and has an available generic form as well



- Accolate® (zafirlukast) → this is pill taken twice a day the blocks the same receptor as Singulair
- Zyflo CR® (zileuton) ⇒ This is given as 2 pills taken twice a day and it blocks the enzyme that produces leukotrienes, so that leukotriene levels are lowered overall. The medication is quite expensive, though through the Zyflo connect® program there are helpful discounts available.

## **Injections/Infusions**

*The following “biologic” medications are approved to treat moderate-to-severe eosinophilic or allergic asthma.*

- Nucala® (mepolizumab) ⇒ This is an injection every 4 weeks that is approved for patients ages 12 and older. Mepolizumab works by decreasing inflammation caused by the signaling of the cytokine IL-5.
- Cinqair® (reslizumab) ⇒ This is an infusion every 4 weeks that is approved for adults (18 years and older). Reslizumab works by decreasing inflammation caused by the signaling of the cytokine IL-5.
- Fasenra® (benralizumab) ⇒ This is an injection once every 8 weeks after the first 2 months and is approved for patients ages 12 and older. Benralizumab works by decreasing inflammation caused by the signaling through the IL-5R $\alpha$  receptor.
- Xolair® (omalizumab) ⇒ This is an injection every 2 or 4 weeks approved to treat moderate-to-severe persistent allergic asthma in patients 6 years and older. It targets the IgE antibody to decrease inflammation and the allergic asthma response.
- Dupixent® (dupilumab) ⇒ This is an injection every two weeks that patients can learn to perform at home, approved to treat moderate-to-severe eosinophilic asthma or steroid-dependent asthma in patients ages 12 and older. It is approved to treat nasal polyps in adults 18 years and older. Dupilumab works by decreasing inflammation caused by the signaling of the cytokines IL-4 and IL-13.

## **Aspirin**

*Physician-supervised aspirin desensitization followed by daily high-dose aspirin is a widely used treatment for AERD. The doses that work best for most patients are either 650mg twice a day or 325mg twice a day. Taking high-dose aspirin often improves sinus and asthma symptoms and slows polyp regrowth after surgery in patients with AERD. Aspirin desensitization appears to have the best outcomes when it closely follows sinus surgery.*