

Indiana Medicaid Therapeutics Committee
Therapeutic Class Review Summary

Therapeutic class:

Leukotriene Inhibitors

Overview:

Asthma ranks first among chronic conditions based on data from the American Lung Association. It is also the number one cause of hospitalization among children under the age of 15. Leukotriene inhibitors block the leukotriene induced inflammatory process that causes asthma. There are three leukotriene inhibitors currently available in the U.S., montelukast, zafirlukast, and zileuton. None of these agents are available as a generic. An extended release formulation of zileuton, Zyflo CR, has recently been approved, and is dosed twice daily. The immediate release product, Zyflo, has subsequently been discontinued by the manufacturer. Montelukast and zafirlukast block leukotriene receptors, and zileuton inhibits leukotriene synthesis. All have demonstrated efficacy in the management of asthma. However, leukotriene inhibitors do not completely attenuate bronchospasm and cannot be used as rescue agents for acute exacerbation. Montelukast is also FDA-approved for the treatment of seasonal and perennial allergic rhinitis and the prevention of exercise-induced bronchoconstriction in patients ages 15 years and older. The efficacy of montelukast in the treatment of seasonal allergic rhinitis has been shown to be equivalent to loratadine, which is now available over-the counter. Based on the guidelines by the National Asthma Education and Prevention Program, leukotriene inhibitors are not recommended as first line therapy, but as alternatives for “moderate persistent” and “mild persistent” asthma for both pediatric and adult patients.

The main clinical differences between the leukotriene inhibitors are their adverse reactions and drug interaction profiles. The incidence of elevated liver enzymes is higher for zileuton than other leukotriene inhibitors. In addition, more drugs interact with zileuton and zafirlukast than with montelukast. All three leukotriene inhibitors have obtained pediatric indications. Montelukast has been approved for patients 12 months and older, zafirlukast for 5 years and older, and zileuton for 12 years and older.

Generic Name	Brand Name	Manufacturer	Generic Available
Montelukast	Singulair [®]	Merck	N
Zafirlukast	Accolate [®]	AstraZeneca	N
Zileuton	Zyflo CR [™]	Critical Therapeutics, Inc.	N

Summary:

Selection of a preferred leukotriene inhibitor should be based upon its safety profile and the total cost impact to the health care system.