

rapid decline in lung function that can occur in a subset of asthma patients.

Corticosteroids Corticosteroids are particularly effective in reducing type 2 inflammation and airway hyperresponsiveness. Corticosteroids bind to a cytoplasmic glucocorticoid receptor to form a complex that translocates to the nucleus. The complex binds to positive and negative response elements that result in inhibition of T-cell activation; eosinophil function, migration, and proliferation; and proinflammatory cytokine elaboration and activation of nuclear factor- κ B. It also attaches to other transcription factors, resulting in deactivation of other proinflammatory pathways.

Use Corticosteroids reduce airway hyperresponsiveness, improve airway function, prevent asthma exacerbations, and improve asthma symptoms. Corticosteroid use by inhalation (ICSs) minimizes systemic toxicity and represents a cornerstone of asthma treatment.

ICS and ICS/LABA ICSs are the cornerstone of asthma therapy. They take advantage of the pleiotropic effects of corticosteroids to produce salutary impact at levels of systemic effect considerably lower than oral corticosteroids. Their use is associated with decreased asthma mortality. They are generally used regularly twice a day as first-line therapy for all forms of persistent asthma. Doses are increased, and they are combined with LABAs to control asthma of increasing severity. European guidelines now recommend their intermittent use even in intermittent asthma. Combining them with LABAs permits effective control at lower ICS dose. Longer-acting preparations permitting once-a-day use are available. Their effects can be noticeable in several days, but continued improvement may occur over months of therapy, with the majority of improvement evident within the first month of regular use. Adherence to regular therapy is generally poor, with as few as 25% of total annual prescriptions being refilled. Very high doses are sometimes used to reduce oral corticosteroid requirements. Not all patients respond to ICS. Increasing evidence suggests that the most responsive patients are those with significant type 2–mediated asthma.