

### Maintaining Asthma Control – When is it Time to Step Down?

There is great emphasis placed on choosing the initial level of step therapy and then stepping up if adequate control of asthma is not achieved. Less attention is given to the appropriate manner in which to “step down” therapy.

#### **Case 4**

*A 10-year-old boy experiences an asthma exacerbation that is not responding adequately to frequent administration of inhaled SABA at home. He is taken to a local ED where his symptoms improve with 2 nebulized albuterol treatments and oral prednisolone. He is discharged from the ED with 4 additional days of oral prednisolone and a sample of a low-dose ICS, which he takes for two weeks until the sample is empty. Three weeks later he is seen by his primary physician for another asthma exacerbation. This flare improves after administration of nebulized levalbuterol and another course of oral prednisolone. He is given a prescription for a medium-dose ICS to take for one month. Six weeks later he presents to an after hours urgent care facility with severe wheezing. Once again he responds to nebulized SABA and an intramuscular injection of a corticosteroid. He is given a prescription for daily montelukast, but the family does not fill it because the child is feeling better by the next day. You see him in your office 4 weeks later and he is wheezing again and has been taking his inhaled SABA 4-5 times daily for the last week.*

This case illustrates an all too common scenario. In each of the three encounters for asthma exacerbations appropriate acute therapy was administered. In addition, each point of care is to be commended in that they prescribed a long-term controller medication upon discharge home. Since so many children lack access to sufficient wellness visits, and may rely on urgent care settings to treat their asthma, it is essential that long-term therapy be initiated at these acute visits.<sup>30</sup> Of note is that a different long-term controller regimen was prescribed at each location—low-dose ICS, medium-dose ICS and a leukotriene antagonist. While ICSs are the preferred initial treatment for persistent asthma, there is latitude in range of doses, and leukotriene antagonists are non-preferred but nevertheless an alternative option. Although each center prescribed long-term controller therapy, the child keeps returning with asthma attacks.

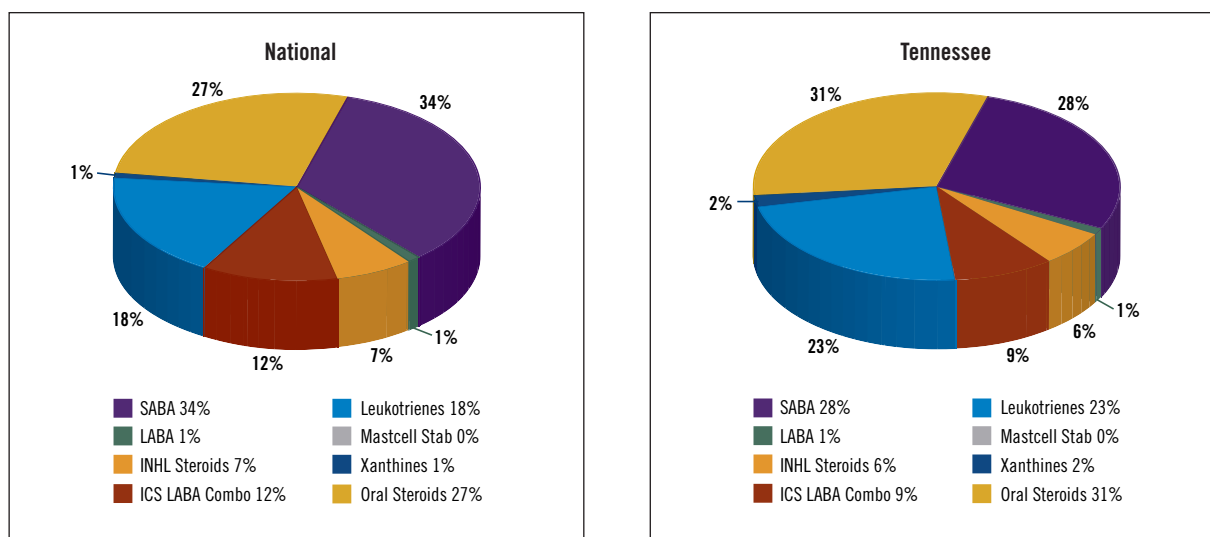
What was missing in this case was both proper patient education and follow-up care. An integral component of the EPR guidelines has always been patient education. New emphasis has been placed on a multifaceted approach to include education at all points of care (primary care physician, ED, urgent care center and pharmacy). The most effective education can occur when an active partnership is developed with the family and a trusted health care professional who has established open communication with the family and understands the family’s concerns, cultural factors and communication needs. Each of this patient’s acute care visits represented missed opportunities for education. While the correct medications were prescribed at each visit, the family was not educated sufficiently to understand that these medications needed to be continued longer than just until the child’s acute symptoms resolved. A written asthma action plan was not provided to the family. Appropriate follow-up care with the primary physician was not assured due to lack of communication between the two care settings or health professionals. Efforts are currently underway to measure the type and effectiveness of patient education and discharge instructions.

#### **Case 4 – Additional History**

*The patient is prescribed combination low-dose ICS and an inhaled LABA to administer twice daily until the next office visit. The child returns 3 weeks later and the family reports that he is symptom free and has not required any immediate relief medication in 2 weeks. He has normal sleep and normal exercise and has not missed any days of school. Spirometry in your office is normal with all values near 100% of predicted for age. They ask if they can now stop his daily medications because his asthma is gone.*

Initiating a daily long-term controller medication is not akin to a life sentence. There may be reluctance to start long-term controller medications due to the impression that the child will be “stuck” on these medications for too long a time.<sup>31</sup> Both patients and physicians may too hastily discontinue effective long-term controllers because they are wary of adverse medication effects.<sup>32</sup> While no medication is without potential adverse effects, the benefit of asthma medications far outweighs the risk of the asthma. **Figure 4** provides an overview of the prescription of all asthma medications at the state and national level. Families often do not fully understand that asthma is a chronic condition that is not curable. They should be educated that just because they are asymptomatic that does not mean that their asthma is “gone”, as suggested by the case above.

A goal of asthma therapy is to find the minimum amount of medication that provides adequate asthma control. When a patient’s asthma is poorly controlled, it is obvious that some step up in asthma therapy is indicated. Asthma therapy can be stepped up as quickly as needed to obtain control, and the speed of stepping up is only limited by the onset of action of the medications.



**Figure 4. Proportion of Asthma Prescriptions Dispensed at Retail Pharmacies Nationally and in Tennessee.**

**Source: IMS Health. National Retail Prescription Data. Time period: 12 months ending January 2008.**

In Case 4, however, the child’s asthma is well-controlled and his lung function is normal while receiving treatment with a combination of ICS and inhaled LABA. Perhaps this child would be equally well-controlled on ICS therapy alone, perhaps at even a lower dose, or with leukotriene antagonist monotherapy. In contrast to a child who is symptomatic and obviously needs a step up in therapy, how can it be determined if it is safe to step down in a well-controlled, asymptomatic child who has normal lung function testing (if age allows)? If a child is well, the only way to know if they will remain equally well on a lower step of therapy is to step down and observe for worsening. Signs of deterioration would include increased use of as needed inhaled SABA, more frequent nocturnal symptoms, diminished exercise tolerance or decreased pulmonary function.

What is the criteria for determining when to step down therapy? The EPR-3 recommends that a step down in therapy can be considered after a minimum of 3 months of well-controlled asthma. During long periods of uncontrolled asthma or after a significant asthma exacerbation, lung inflammation is increased. Inflammation is directly related to airway hyper-responsiveness. Heightened airway hyperresponsiveness increases susceptibility to asthma triggers. In essence, one asthma exacerbation predisposes a patient to further exacerbations, even with mild triggers. When airway hyperresponsiveness lessens, exposure to these same minor triggers will have less of a deleterious effect.