

ABSTRACT

Review of last year's published data showed several concepts evolving into tools that may be translated into clinical use, as well as some new discoveries. This update will review the changes to the GINA guidelines, control strategies that differ from these guidelines, pathophysiology, as well as exhaled markers of asthma and its development.

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Guidelines

The GINA guidelines were subjected to a very significant change. Classification of asthma control has superseded severity based on symptom scoring. This is clinically more relevant and was also done to reduce confusion. The severity classification using symptoms is likely to be used for conducting studies. The NAEPP (National Asthma Education and Prevention Program) still maintains the severity classification but spreads treatment steps from 4 to 6 steps which now mention the use of omalizumab.

Asthma control strategies

Standard treatment for mild persistent asthma has included regular inhaled steroids. Clinical experience tells us that patients are probably not as compliant as the guidelines would like them to be. Boushey et al. have previously published data using inhaled steroids as needed, according to a written plan, and the outcomes were acceptable. Two recent papers have carried this concept further. The American Lung Association Asthma Clinical Research Centers have found that once daily, combination treatment with fluticasone/salmeterol treatment or regular use of monteleukast is an acceptable alternative. Papi et al. uses combination beclomethesone and salbutamol as needed, and have also found it to be a viable option. As such, regular steroid use is no longer de rigueur for this group of patients.

Treatment agents

There is an emerging interest in leukotriene antagonists recently. Recommended as regular treatment for mild persistent asthma or add on to ongoing asthma controllers,

it was compared with theophylline as add on treatment to patients with poorly controlled asthma. No difference was noted with either agents added on to inhaled steroids. Theophylline appeared to be beneficial to patients not on inhaled steroids. Interestingly, in another paper by Lazarus et al., monteleukast and inhaled steroids were assessed in smokers and the authors noted a beneficial effect of monteleukast in them. The authors also noted that smoking impaired steroid response. However, a trial attempting to replace inhaled steroids with monteleukast and salmeterol was terminated early as the combination was found to be inferior. Finally, Robertson et al. found that short courses of monteleukast used for intermittent asthma in children reduced health care resource utilization.

A novel concept that has emerged recently is that of bronchial thermoplasty. Airway smooth muscle is known to be increased in asthmatics. By using radiofrequency energy to reduce smooth muscle, it was found that asthma control was improved.

Pathophysiology

A biomarker that may be used for asthma diagnosis has been elusive till now. Recent work, however, has shown an elevated level of a chitinase-like protein, YKL-40. Chupp et al. discovered elevated serum levels and that the levels corresponded positively with severity and negatively with FEV1. Ober et al. studied a genotypically homogenous population and isolated the polymorphism in the gene that led to an increase in YKL-40 and used this polymorphism to predict asthma in two separate cohorts.

Exhaled nitric oxide had shown promise in reducing steroid use and targeting asthma treatment. A paper from New Zealand now attempts to present reference ranges, albeit in their local population. Although a negative study this year did not show a difference in outcome when exhaled NO was used, earlier studies had some positive results and it is a method of asthma control that still shows potential.

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LEARNING POINTS

- o The NAEPP (National Asthma Education and Prevention Program) still maintains the severity classification but spreads treatment steps from 4 to 6 steps which now mention the use of omalizumab.
- o Standard treatment for mild persistent asthma has included regular inhaled steroids.
- o Theophylline appeared to be beneficial to patients not on inhaled steroids.
- o Monteleukast has a beneficial effect in smokers.
- o Using radiofrequency energy to reduce airway smooth muscle can improve asthma control.