Valley Children's HEALTHCARE

Central California
Pediatrics

FEBRUARY 2024

Specialty information for physicians who treat children and expectant mothers.

Management of Asthma and GINA Main Report

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Asthma is a chronic respiratory illness involving the lower respiratory tract that many physicians in the region are faced with. It involves complex inflammatory pathways that are interrelated and further modified by environmental exposure in the setting of genetic predisposition. Presenting symptoms may include wheezing, chronic cough, dyspnea and chest pain. Additionally, there is airflow limitation which may be a variable and often triggered by allergen exposure, exercise, cold exposure, respiratory infections, etc.

For many practitioners, asthma guidelines serve as a helpful framework to evaluate disease burden, as well as initiate necessary therapies and modify them as clinically indicated. Global Initiative for Asthma (GINA) guidelines provide a stepwise approach to asthma diagnosis, risk assessment, level of impairment, initiation of therapy and step up/down management.

Asthma Assessment

Asthma assessment begins with the diagnosis of asthma and assessing control. Probability of asthma is highest in patients who have symptoms listed above that vary over time in intensity, tend to worsen at night, triggered by exercise, laughter and cold air which may worsen during viral infections. To confirm the diagnosis, excessive variability in lung function with PEF or spirometry is necessary to document variability. This is best done prior to initiation of treatment if possible. Variability is demonstrated in many ways including bronchodilator trial showing an increase in FEV1 from baseline of 12% predicted. Another measure of excessive variability is demonstrated in twice daily PEF measurement over two weeks. Children with asthma might show an average daily diurnal PEF variability of greater than 13%. Other modalities used includes measurement of lung function after four weeks of ICS-containing treatment, have a positive exercise challenge test, positive bronchial challenge test or simply excessive variation in lung function between visits.

Next, assessment of asthma control and asthma severity is crucial. Control refers to the extent to which features of asthma has been reduced, while severity is a retrospective assessment during treatment course. These can be assessed with ACT and ACQ validated tests. Assessing risk factors for exacerbation should be done as well, independently from symptom control to include history of exacerbations in the previous year, adherence, incorrect inhaler use, low FEV1 as an assessment of future risk, exposures, overuse of short-acting beta agonists (SABA) and socioeconomic barriers.

GINA Guidelines

When initiating therapy, it is important to emphasize that GINA generally does not recommend initiation of SABA alone for safety reasons. The use of as needed ICS-formoterol reduces the risk of severe exacerbations and ER visits/hospitalizations by 65% compared to SABA-only treatment. In adults and adolescents, low dose as needed ICS-formoterol can be used in mild cases for symptom relief. For children with mild disease, ICS can be used whenever SABA reliever is given. This is mainly to reduce the risk of serious exacerbations.

Valley Children's HEALTHCARE

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In adolescence, decision of therapy is based largely on the choice of reliever medication. Preferably, reliever use with ICS-formoterol (low dose) is suggested. ICS-formoterol can be used for maintenance therapy as part of daily use depending on asthma severity. Alternate track described in the guideline is based on the use of SABA as a reliever. In mild cases, patients can use ICS whenever SABA is used for symptom relief. However, depending on asthma severity, ICS may need to be adjusted in conjunction with consideration if patient is likely to be adherent to the ICS treatment. When step up therapy is considered, it is important to confirm that symptoms are in fact due to asthma, identify any issues related to inhaler technique, spacer use, exposure to allergens and other comorbidities. Once addressed, maintenance and reliever therapy (MART) with low dose ICS-formoterol can be initiated. The maintenance dose of ICS-formoterol can be increased further depending on symptom burden to achieve better asthma control. MART can be used for children as a preferred treatment option for children 6-11 years of age with a very low dose ICS-formoterol inhaler if symptoms are present most days or waking up with asthma once a week or more. Other options for children described in the Alternative Track in the guideline as step-up therapy include maintenance ICS-LABA (plus SABA, as needed), or medium dose ICS (plus SABA, as needed). For children, other controller options can be tried prior to stepping up.

Difficult to treat asthma or presence of persistent symptoms despite adequate maintenance therapy adjustments generally warrants a referral to an asthma center for expert advice and severe asthma treatment.

Global initiative for Asthma. (2023). Global Strategy for Asthma Management and Prevention. https://ginasthma.org/wp-content/uploads/2023/07/GINA-2023-Full-report-23_07_06-WMS.pdf

Upcoming CME Opportunities

Religious Beliefs & Practices: An Atheistic Scientist's Perspective on Death and Grief (It's Not What You Think)

Presented by Michelle Grua, MD
Thursday, March 14
12:15 - 1 p.m.
G150A & WebEx | Activity Code: 36291

Pediatric Clinical Symposium Virtual Education: Erythrocyte Disorders

Presented by Sarah Sahib, MD
Wednesday, March 27
12:15 - 1 p.m.
WebEx | Activity Code: 36320

Register for Valley Children's CME events through our CME Tracker, cmetracker.net/VCH

Medical Staff News

The following pediatric specialists recently joined Valley Children's:

Cardiology
Brian Hernandez, MD

Chief Resident
Youmna Moufarrej, MD

Endocrinology
Asaad Elbashir, MD

Gastroenterology
John-Paul Berauer, MD

Hospitalist
Resham Kaur, MD
Mariel Marquez, MD

MFM
Lynsa Nguyen, MD

Neonatology
Lee Brock, MD
Uche Nwokidu Aderibigbe, MD

Pathology
Cristo Guardado Salazar, MD

Primary Pediatrics
William Hall III, MD
Cynthia Kim, DO
Erin Vaughn, MD

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