

Thomas J. Helm, MD: Great Articles In The Past Year That Will Change The Way You Practice Pediatrics

Viewing Time

The program will take up to one hour to complete.

Target Audience

This program is designed for primary care physicians.

Other health care professionals working with patients and their families may also find this program of interest.

Faculty Disclosure

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Faculty Disclosure

Thomas J. Helm, M.D., has disclosed no actual or potential conflict of interest in relation to this educational activity.

During this educational activity **Dr. Helm** will not be discussing the use of any commercial or investigational product not approved for any purpose by the FDA.

Great Articles In The Past Year That Will Change the Way You Practice Pediatrics

Thomas J. Helm, MD
Allergy and Asthma Care PA
Adjunct Assistant Professor
University of Minnesota Medical School

Great Articles In The Past Year That Will Change the Way You Practice Pediatrics

A lecture on recent changes in the understanding of food allergy epidemiology, asthma, and asthma medications

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Program Objectives

Upon completion of this program, participants should be able to:

- Recognize recent changes in the understanding of food allergy epidemiology
- Identify differences in controller meds and how they affect asthma
- Recognize a unique side effect from a commonly-used asthma medication

Disclaimer

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Children's Hospitals and Clinics of Minnesota is accredited by the Minnesota Medical Association to provide continuing medical education for physicians. Children's Hospitals and Clinics of Minnesota designates this educational activity for a maximum of 1 AMA PRA Category 1 Credits™ toward the AMA Physician's Recognition Award. Each physician should only claim those credits that he/she actually spent in the activity.

Receiving CME Credit

To receive CME credit you must view the entire program and complete the evaluation form at the end.

GREAT ARTICLES IN THE PAST YEAR THAT WILL CHANGE THE WAY YOU PRACTICE PEDIATRICS

Thomas J Helm MD

Allergy and Asthma Care PA
Maple Grove, Maplewood, Woodbury, Blaine
and Buffalo
Adjunct Assistant Professor
University of Minnesota Medical School
Ph: 763-420-1010

I have no personal, or financial relationship with any pharmaceutical or other company as it relates to this talk or any other.

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3 Questions Every Patient Asks When She/He presents with a concern

- What is wrong with me?
- Based on what is wrong with me, what does the future hold?
- Can you change the future?

Development of Allergies or Can you change the future?

Prenatal and Postnatal Sensitization to Environmental Allergens in a High Risk Birth Cohort

Rowe J, Kusel M, et al JACI 2007;119:1164-75

Back Ground

- Based on allergen reactive T cells in cord blood, previous studies had postulated that allergic sensitization can occur in utero.

Question

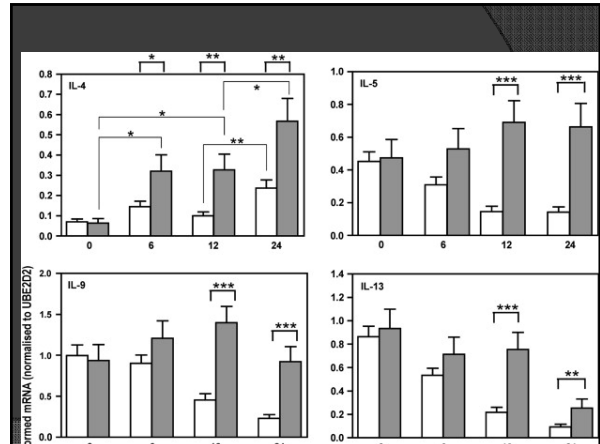
- Does the presence of these allergen reactive T cells in cord blood indicate in utero sensitization and do these children go on to have IgE mediated allergies?

Study Group

- 200 infants in a prospective birth cohort chosen as high risk (1 parent with MD diagnosed hx of asthma, allergic rhinitis or eczema).
- Measured House Dust Mite(HDM) induced TH2 response(IL4, IL5) in cord blood and at 6, 12 and 24 months.
- Skin prick test to HDM and ImmunoCAP IgE to peanut at 24 months.

Study Group

- At 24 months - compared the TH2 in vitro tests to those who would be positive to House dust mite by skin prick or peanut IgE >0.35 ku/l.



Conclusions

- “Priming of TH2 responses associated with persistent house dust mite IgE production occurs entirely postnatally. House dust mite reactivity in cord blood seems nonspecific to subsequent development of allergen specific TH2 memory T cells or IgE.”
- “ These findings question the scientific basis for existing recommendations for allergen avoidance by high risk women during pregnancy”

Pediatric Asthma

Long Term Comparison of 3 Controller Regimens for Mild-Moderate Persistent Childhood Asthma: The Pediatric Asthma Controller Trial

Sorkness CA, Lemanske RF Jr., Mauger DT, Boehmer SJ, Chinchilli VM, Martinez FD et al
JACI 2007;119:64-72

Background

- “More evidence is needed on which to base recommendations for treatment of mild-moderate persistent asthma in school-aged children.”
- New 2007 Asthma Guidelines allow for different choices in controller medication use.
 - Include inhaled corticosteroids(ICS), Oral leukotriene receptor antagonists, or ICS with a long acting beta agonist(LABA).

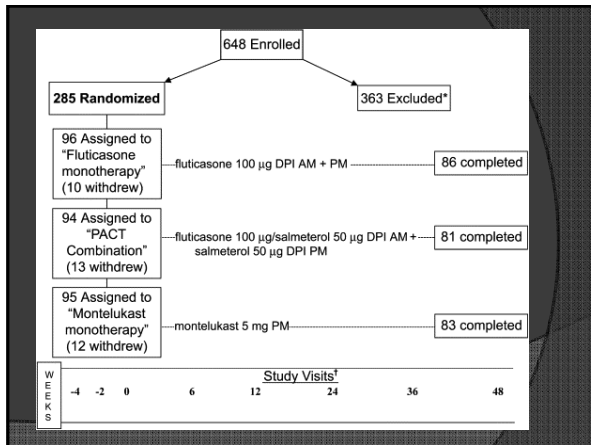
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Objective

- “The Pediatric Asthma Controller Trial (PACT) compared the effectiveness of 3 regimens in achieving asthma control.”

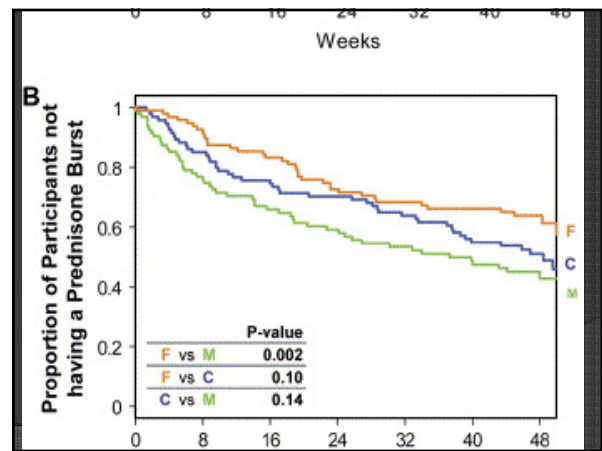
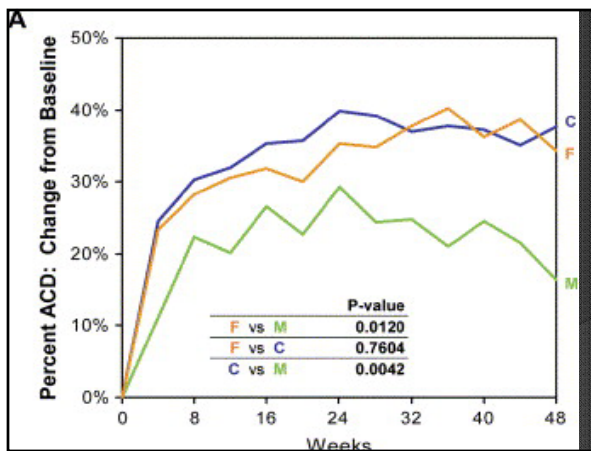
Study Group

- 285 children enrolled (Ages 6-14 yrs.) with mild-moderate persistent asthma.
 - Symptoms: > 3 times per week
 - FEV1 > or = 80% predicted
 - Methacholine PC20 < 12.5 mg

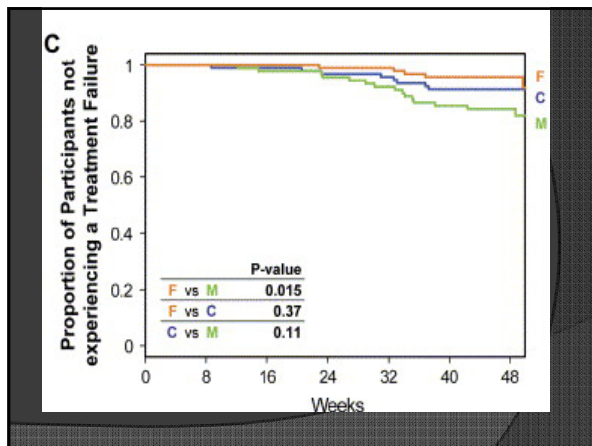


Outcomes

- Primary Outcome**
 - Asthma Control Days = number of days without Albuterol use.
- Secondary Outcomes**
 - Number of and time to first exacerbation requiring prednisone
 - Treatment Failure – Hospitalization or 3rd prednisone burst
 - 7 item Asthma Control Questionnaire
 - Pulmonary Functions
 - Growth



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Additional Results

Asthma Control Questionnaire, eNO measurement, PreBD FEV1

- Fluticasone > Combination > Montelukast
- Methacholine Challenge Test
 - PC20 improved by 2.65 doubling doses with Fluticasone, 1.03 doubling doses with PACT Combination therapy (p=0.001) and 0.62 with Montelukast (p=0.001).
- Growth over 48 months was NOT statistically different in the 3 groups.

Conclusions

- “Both Fluticasone and PACT Combination therapy achieved greater Asthma Control days than Montelukast. However, Fluticasone monotherapy was superior to PACT combination in achieving other dimensions of asthma control.”
- “PACT study findings favor Fluticasone monotherapy.”

Conclusions

- John Kelso - “Asthma is not an ADVAIR deficiency.”
- Inhaled corticosteroids alone are probably adequate for most of our patients.

Food Allergy

Treatment of Food Allergies

- Present recommendations for the treatment of IgE mediated food allergies:
 - AVOIDANCE
 - IM Epinephrine
 - Education

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Recent Studies Addressing Food Allergy Treatment

- Chinese herbs
- Allergy shots to “SAFE” peanut
- Oral desensitization

Oral Immunotherapy for Children with Peanut Allergy

S Nash et al JACI vol 121: No. 2;S136 (abstract)

Study Group/Protocol

- 13 children
- Mean total IgE 184 (range 11-401)
- 1 day modified Rush in clinic (0.1 mg – 50 mg)
- Build up daily doses(at home) and increasing(in clinic) every 2 weeks up to 300mg.
- Maintenance at 300 mg for 4 months

Results

- Rechallenged (DBPCFC) at end of maintenance - most able to tolerate 7.8 gms of peanut.
 - 8 subjects - no symptoms, 5 subjects- mild symptoms needing Benadryl.
- During modified rush most subjects had mild symptoms but 2 had systemic reactions.

Safety of Peanut Oral Immunotherapy

A.M. Hoffman et al JACI Vol 121: No. 2; S137

Study Group

- 28 patients
- Initial day increasing dose – upper resp, chest and abdominal symptoms were recorded every 30 minutes.
- Subjects maintained daily symptom diaries while dosing at home.
- Initial day
 - 74% sneezing, nasal congestion, rhinorrhea.
 - 67% abdominal symptoms 11/28 had mild emesis or diarrhea.
 - 56% skin symptoms usually itching
 - 11% mild wheezing

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Safety of Peanut Oral Immunotherapy
A.M. Hoffman et al JACI Vol 121: No. 2; S137

- Escalation phase
 - 84% skin symptoms
 - 88% upper respiratory symptoms
 - 40% abdominal symptoms
 - 12% chest symptoms
- At Home maintenance (1 year)
 - 1-40 days symptoms
 - 85% Skin, 74% ABD, 67% Upper resp
 - With symptoms 28% time got RX
 - 2 subjects needed EPI at home.

Effects of Early Nutritional Interventions on the Development of Atopic Disease in Infants and Children: The Role of Maternal Dietary Restriction, Breastfeeding, Timing of Introduction of Complementary Foods, and Hydrolyzed Formulas

Frank R. Greer, MD, Scott H. Sicherer, MD, A. Wesley Burks, MD and the Committee on Nutrition and Section on Allergy and Immunology
PEDIATRICS Vol. 121 No. 1 January 2008: 183-191

Allergic Disease is changing

- “Over the past several decades, the incidence of atopic diseases such as asthma, atopic dermatitis, and food allergies has increased dramatically. Among children up to 4 years of age, the incidence of asthma has increased 160%, and the incidence of atopic dermatitis has increased twofold to threefold.”

History

- **Hypoallergenic Infant Formulas**
Committee on Nutrition

PEDIATRICS Vol. 106 No. 2 August 2000, pp. 346-349

- “Mothers should eliminate peanuts and tree nuts (eg, almonds, walnuts, etc) and consider eliminating eggs, cow's milk, fish, and perhaps other foods from their diets while nursing. Solid foods should not be introduced into the diet of high-risk infants until 6 months of age, with dairy products delayed until 1 year, eggs until 2 years, and peanuts, nuts, and fish until 3 years of age.”

Summary

- “there is lack of evidence that maternal dietary restrictions during pregnancy play a significant role in the prevention of atopic disease in infants”
- “antigen avoidance during lactation does not prevent atopic disease, with the possible exception of atopic eczema, although more data are needed to substantiate this conclusion”

Summary

- “For infants at high risk of developing atopic disease, there is evidence that exclusive breastfeeding for at least 4 months compared with feeding intact cow milk protein formula decreases the cumulative incidence of atopic dermatitis and cow milk allergy in the first 2 years of life.”

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Summary

- “In studies of infants at high risk of developing atopic disease who are not breastfed exclusively for 4 to 6 months or are formula fed, there is modest evidence that atopic dermatitis may be delayed or prevented by the use of extensively or partially hydrolyzed formulas, compared with cow milk formula, in early childhood.”

Summary

- “Although solid foods should not be introduced before 4 to 6 months of age, there is no current convincing evidence that delaying their introduction beyond this period has a significant protective effect on the development of atopic disease regardless of whether infants are fed cow milk protein formula or human milk. This includes delaying the introduction of foods that are considered to be highly allergic, such as fish, eggs, and foods containing peanut protein.”

Talk Summary

- Allergen avoidance during pregnancy does not appear to prevent subsequent allergies in the children.
- Inhaled Corticosteroids alone as a controller appears to be adequate for most children with mild to moderate persistent asthma.
- Oral Immunotherapy appears to raise the threshold of reaction to peanut. Can this be done safely? Can this “cure” peanut allergy?

Talk Summary

- Allergen Avoidance during breast feeding does not prevent atopic disease except possibly atopic eczema.
- Exclusive breast feeding for the first 4 mos of age decreases atopic dermatitis and cow milk allergy in the first 2 yrs of life.
- For infants not breast fed, hydrolyzed formula may decrease the incidence of atopic dermatitis in early childhood.

Talk Summary

- After 4-6 mos of age, there's no evidence that withholding solids beyond this age will prevent allergies. Including highly allergic foods.

Thank You

Thomas Helm MD
763-420-1010

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**Comments
and
Questions**

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