Allergy/Immunology Curriculum

Goal

Allergy and immunology involves the management of disorders related to hypersensitivity or altered reactivity caused by release of immunologic mediators or by activation of inflammatory mechanisms. An understanding of immunology is essential for mastery of subspecialty areas within all of the major disciplines of internal medicine and most of its allied specialties.

Rotation on the allergy-immunology service will provide training for the resident to (1) diagnose and treat diseases involving altered immunity or hypersensitivity commonly seen in a general internal medicine practice, including rhinitis, urticaria, and asthma; (2) recognize many other diseases in which altered immunity plays an important role, and (3) demonstrate an understanding of the indications for allergy consultation.

Objectives

Patient Care

I. Provide patient care that is compassionate, appropriate and effective for the prevention and treatment of diseases involving altered immunity or hypersensitivity.

Medical Knowledge

I. Develop the knowledge and skills to obtain an appropriate history on patients at risk for or with altered immunity or hypersensitivity
   a. elicit complete history of symptoms, including onset and timing of symptoms, location where symptoms occur, and agents that precipitate symptoms
   b. identify occupation and area of residence
   c. elicit complete medication history with attention to OTC allergy medications, creams, nsaids, and herbal medications
   d. explore family history for atopic disease
   e. use history to discriminate allergic disease from disease that simulates allergic disease

II. Develop the knowledge and skills for performing and interpreting physical exam findings on patients with hypersensitivity disorders or altered immunity.

III. Develop an approach to patients presenting the following symptoms or signs:
   a. allergy to food, drugs including aspirin/NSAIDs and contrast, insect venoms or latex
   b. anaphylaxis
   c. angioedema
   d. conjunctival and bulbar inflammation, chemosis, ocular pruritis
   e. cough
   f. dyspnea
   g. hay fever or seasonal allergies

h. hives
i. nasal obstruction and pruritis, rhinorrhea, sneezing
j. nasal polyps
k. postnasal drip
l. pruritis
m. rash
n. stridor
o. symptoms in the setting of occupational exposure
p. wheezing

IV. Recognize symptoms and signs, differential diagnosis and management of the following disease processes:
a. asthma and triad asthma
b. atopic dermatitis
c. common variable immunodeficiency
d. contact dermatitis
e. graft versus host disease
f. hereditary angioneurotic edema
g. hypersensitivity pneumonitis
h. immunodeficiency with normal serum globulins or hyperimmunoglobulinemia
i. immunodeficiency with thymoma
j. mastocytosis
k. rhinitis – allergic, nonallergic (medicamentosa, endocrine-mediated, anatomic and vasomotor
l. selective IgA deficiency
m. serum sickness
n. urticaria/angioedema
o. x-linked agammaglobulinemia

V. Understand the pathophysiology of acute allergic reactions including the role of antibodies, allergens and mediators, and the physiologic basis for treatment.
a. understand the role of dust and mite avoidance, immunotherapy and drug therapy in attenuating symptoms.

VI. Understand appropriate use and interpretation of diagnostic studies, including:
a. Wright-Giemsa stain of nasal and pulmonary secretions
b. spirometry pre/post bronchodilators and full pulmonary function tests
c. Methacholine inhalation challenge
d. immediate skin tests for IgE-mediated reactions to inhalants, food, certain drugs
e. patch tests
f. intradermal skin tests
g. in vitro test for specific IgE
h. serum Immunoglobulin levels
i. total eosinophil count
j. levels of complement component, C1 esterase inhibitor
k. T-and B-cell quantitation and subtyping

l. drug desensitization protocols
m. CT of lungs, sinuses

Practice-Based Learning and Improvement

I. Perform independent research for evidence-based practice to answer specific clinical questions arising from patient care.
II. Be able to access clinical practice guidelines to help improve patient care
    a. Asthma - www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf
III. Review patient care errors with attention to changes in systems to prevent recurrence.
IV. Utilize information technology to enhance patient education.

Interpersonal and Communication Skills

I. Communicate effectively with patients and families in a compassionate, culturally sensitive and patient-centered manner to improve understanding and compliance.
II. Communicate effectively with the primary care physician to ensure continuity of care.
III. Ensure charting is legible, thoughtful, complete and timely to facilitate communication within the health care team.

Professionalism

I. Understand impact of gender, age, culture, religion, and socioeconomic status on choices regarding care.
II. Understand how to inform patients regarding the natural history of their disease and therapeutic interventions and to obtain consent to implement a treatment plan.
III. Provide meaningful feedback to colleagues and students regarding performance and behavior.

Systems-Based Practice

I. Ensure patient has access to the multidisciplinary team including allergist, social worker, nurse, pharmacist, dietician, and billing coordinator to provide optimal care.
II. Apply evidence-based, cost-conscious strategies to prevention, diagnosis and disease management.
III. Develop skills in identifying opportunities for quality improvement, risk management and cost-effectiveness within a practice.

Teaching Methods

I. Attending supervision of resident activities in patient care
II. Teaching rounds
III. Conferences
    Morning report

Noon conference

IV. Recommended reading

Resident Evaluation

I. Attending feedback to residents on strengths and weaknesses throughout the rotation
II. Attending written evaluation of residents at the end of the rotation
III. Mini-CEX bedside evaluation tool

Resources

Harrison's Principles of Internal Medicine, 15th ed. McGraw Hill, 2001.

Cecil Textbook of Medicine, 21st ed, Saunders, 2000.

MKSAP

JAMA's The Primer on Allergic and Immunologic Diseases

On-line Resources

- UpToDate
- MD Consult
- Practice Guidelines
  - Asthma - www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf

Residents should review Annals of Internal Medicine for recent Updates in Allergy section as well as ACP journal club for pertinent articles.