Division of Allergy and Inflammation

Peter F. Weller, MD, Chief

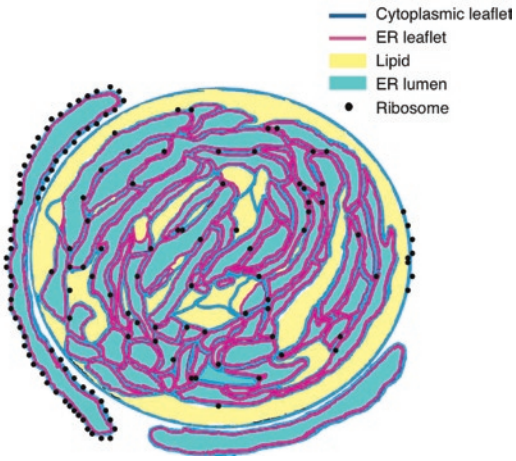
Overview

The Division of Allergy and Inflammation at Beth Israel Deaconess Medical Center has as its mission to provide excellent patient care, teaching and research pertinent to allergic and related immunologic diseases. Clinical and research faculty are nationally and internationally recognized for their expertise. The staff of the Division includes physicians supported by experienced nurses and a nurse-practitioner. Educational activities are aimed at Harvard Medical School students, medical residents in training at Beth Israel Deaconess Medical Center and others. Research activities, focusing on basic mechanisms of allergies and inflammation, have coordinated with international centers and provided research training opportunities for national and international research fellows. The Division includes three clinical physicians, six research faculty, four research fellows and three research associates.

Clinical Activities

The Division provides clinical services and expertise related to allergic diseases, asthma and immunodeficiency disorders in both inpatient and outpatient settings. With the needs of patients in mind, the Division emphasizes quick access to care. Services provided include consultative, diagnostic evaluations and primary allergy clinical care. The Division's clinical services are provided in a team approach with physicians, a nurse-practitioner and other nursing staff working collaboratively. The Division provides general outpatient Allergy and Clinical Immunology services at the main Beth Israel Deaconess Medical Center campus and a new office practice at 1 Brookline Place, Brookline, as well as at the Lexington and Chelsea satellite facilities. Our physicians have expertise in the diagnosis and management of allergic and inflammatory diseases, including allergic rhinitis, allergic conjunctivitis, sinusitis, asthma, food allergy, atopic dermatitis, urticaria, angioedema, anaphylaxis, drug hypersensitivity, latex allergy, hypereosinophilic syndromes, mast cell disorders, and immunodeficiency disorders. The Division's clinical outpatient volume is approximately 3,700 patients each year.

The Division also maintains an inpatient consultation service at the main Beth Israel Deaconess Medical Center campus. We are available to assist with any inpatient allergic or immunological issues, including the evaluation and management of drug allergy, drug desensitization, cutaneous eruptions, anaphylaxis, hypereosinophilic disorders and primary immunodeficiency workup. We have also developed an interdisciplinary program for the evaluation and management of systemic mast cell and eosinophilic disorders, which is a coordinated effort between Allergy & Inflammation, Hematology/Oncology, Dermatology, Gastroenterology, Clinical Pathology, and the Division of Experimental Pathology. Approximately 35 patients with eosinophil or mast cell disorders are evaluated per year.



Model of the biogenesis and structure of leukocyte lipid bodies

Dr. Javed Sheikh, the Clinical Director of the Division, is trained in Allergy & Clinical Immunology, and has special interests in urticaria, mast cell disorders, eosinophilic disorders, asthma, and allergic rhinitis. He also has expertise in food-related allergic/immunologic disorders, and is a member of the BIDMC Celiac Center. The clinical activities of Dr. Peter Weller, Division Chief, fall in both the Division of Infectious Diseases and the Division of Allergy and Inflammation. Dr. Weller has special interests in eosinophil-associated diseases. Other clinical staff includes Dr. Martin G. Ostro and Kathleen Corley, Nurse Practitioner, who has expertise in general allergy and asthma evaluation and coordinates patient education services.

Quality Improvement

The Division has had a quality assurance program in place since January 2006. We have been tracking the rate of anaphylactic reactions to desensitization therapy, which has been consistently below a rate of 0.05 events per 100 injections given, well below the national benchmark of 0.5 events per 100 injections. We are also tracking documentation of administration of injectable epinephrine to patients with a history of anaphylaxis, which has steadily improved since the beginning of tracking. The rate of compliance with documentation was 50% when we began the initiative in January 2006, and improved to an average documentation rate of 89% between January–June 2007. In line with the Department of Medicine initiatives, we have been tracking time to appointment access and clinic customer service measures.

Educational Programs

The Division plays a major role in the education of BIDMC Internal Medicine housestaff, Harvard Medical School students, and Harvard Allergy/Immunology clinical fellows. BIDMC medicine residents have the option of a three-week outpatient rotation in Allergy & Clinical Immunology and have designed basic science or clinical research electives with Division faculty. Third-year Harvard Medical School students may rotate through the outpatient Allergy practice as part of their Core Medicine rotation. Faculty members frequently give didactic presentations on the BIDMC campus, other Harvard Medical School campuses, and at regional and national meetings.

Sheila Mansfield, RN, one of the allergy nurses, preparing to administer immunotherapy

Research Activities

Research Funding • AY'07	
Federal Direct	1,306,578
Federal Indirect	896,342
Other Direct	31,466
Other Indirect	5,863

The research activities of the Division include both clinical research and basic research. The basic research was supported by about $2 million of NIH grant support in 2006 and conducted in 3300 sq ft of lab space in the Dana building.

Clinical Research – The Division maintains a program for industry-sponsored clinical research. In an international multi-national study of a neutralizing antibody to interleukin-5 for eosinophilic diseases, the Division was the only study center in New England.

The Division has also collaborated on clinical projects with other HMS institutions and divisions, and has collaborated on epidemiological research with the Channing Lab and the Harvard School of Public Health.

Basic Research – Cellular and Molecular Bases of Inflammation – Studies by Peter F. Weller, MD, and colleagues are centered around understanding mechanisms of leukocyte functioning in forms of inflammation. The two principal areas of investigation are: 1) the immunobiology of eosinophilic leukocytes and 2) the intracellular regulation and compartmentalization at cytoplasmic lipid bodies of inducible mediators of inflammation in neutrophils and other leukocytes. Studies of human eosinophils are aimed at defining mechanisms whereby eosinophils may collaboratively interact with other cellular elements of the immune system. The investigations of eosinophils include studies of the cellular biology of secretion and other responses of these cells and their roles as antigen-presenting cells in allergic airways diseases.

Studies of the Complement System – Ionita Ghiran, MD, and Anne Nicholson-Weller, MD, are interested in the normal regulation of the human complement system and how inflammation is modified through complement activation, and specifically the role of CD35 (complement receptor 1, or CR1). The complement system is an integral part of the innate immune system, and as such, complement participates in immune surveillance for pathogens and augments the adaptive immune system.

Awards and Honors

Dr. Peter F. Weller was listed as one of the Best Doctors in America from 2002-2007. Dr. Weller serves on the editorial boards for *American Journal of Respiratory Cell* and *Molecular Biology* (Associate Editor), *UpToDate* (Co-Editor for Infectious Diseases), and *Journal of Infectious Diseases* (Associate Editor). Dr. Javed Sheikh serves on the editorial boards for *Annals of Allergy, Asthma & Immunology* (Reviewer), *Journal of Quality of Life Research* (Reviewer), and *eMedicine Online Textbooks,* Allergy & Immunology Section Editorial Board (Member). Dr. Lisa A. Spencer received the American Academy of Allergy, Asthma and Immunology Women in Allergy Junior Faculty Award (2007-2009).

Faculty

Ionita Ghiran, MD
Zhuang Jin, PhD
Rosanna Melo, PhD
Anne Nicholson-Weller, MD
Martin G. Ostro, MD
Javed Sheikh, MD
Lisa A. Spencer, PhD
Dawn Wan, DDS, DMSc
Haibin Wang, MD, PhD
Peter F. Weller, MD

Selected Publications

Banerji A, Weller PF, Sheikh J. Cytokine-associated angioedema including episodic angioedema with eosinophilia (Gleich's syndrome). Zuraw BL (ed). *Immunol Allergy Clin North Am* 2006; 26:769-781.

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