RHEUMATOLOGY

George Tsokos, MD, Chief — The Division of Rheumatology at Beth Israel Deaconess Medical Center includes strong clinical, educational and research programs. The goals of the Division are to provide outstanding care to patients suffering from rheumatic diseases, to offer exceptional teaching to medical students, medical residents and interns as well as trainees enrolled in the clinical rheumatology and systemic autoimmunity fellowship programs, and to conduct cutting-edge clinical, translational and basic research.

Highlights

Clinical Activities

The Rheumatology Division maintains an active outpatient clinical practice and an inpatient consultation service for patients with rheumatic diseases and other musculoskeletal problems. The outpatient practice evaluates and treats more than 2,000 new and more than 10,000 established patients each year. This is a unique integrated practice environment that also includes a rheumatology nurse specialist who provides patients with medication teaching and monitoring. All of the full-time members of the Division provide care based on a model in which each physician is responsible for personalized continuity of care for their patients. The Division is a major referral center for patients with refractory rheumatoid arthritis, systemic lupus erythematosus (SLE), autoinflammatory syndromes, scleroderma and polychondritis.

Ingrid Avalos, MD

The Lupus Center provides high-quality, comprehensive health care for patients with SLE by rheumatologists with particular expertise in the treatment of this disease. Collaboration and coordinated care with colleagues in other specialties, including the Nephrology Division, encourage optimal and efficient care.

Under the leadership of Dr. Fadi Badlissi in the Musculoskeletal Medicine Unit, the Division maintains close collaboration with the Department of Orthopedics. This unit provides care for patients with sports injuries, acute and subacute regional pain syndromes and non-operative orthopedic disorders.

Quality Improvement

Under the leadership of Dr. Robert Shmerling, the Division is engaged in a number of quality improvement projects. They include improved documentation of procedures, regular ophthalmologic examinations among patients taking antimalarial medications, appropriate laboratory monitoring of patients taking methotrexate, screening for tuberculosis prior to anti-TNF therapy, improving patient access for appointments and improved documentation of reproductive

Top: Lisa Fitzgerald, MD, with a patient

counseling prior to the initiation of methotrexate or cyclophosphamide therapy.

Educational Activities

The Division started an independent clinical rheumatology fellowship program this year, directed by Dr. Shmerling with help Drs. Badlissi, Gwen Kane-Wanger and Lisa Fitzgerald. The program provides a three-year fellowship, the first year of which is devoted to clinical training and the last two years of which are devoted to research. During the first year, fellows provide coverage for an active inpatient consultation service. Formal teaching rounds are conducted at least twice a week with attending physicians from the Division. In addition, fellows are responsible for daily work rounds on all patients on the service. Throughout the three-year training period, fellows participate in a continuity outpatient rheumatology practice. Multiple clinical sites are used for this experience.

Under the leadership of Dr. Fitzgerald, the Division's weekly Rheumatology Grand Rounds presents local and national experts to discuss updates on clinical and research topics of interest. The Division sponsors weekly Research Seminars, Journal Club under the leadership of Drs. Jose Crispin and Vasileios Kyttaris, and Consult Rounds under the leadership of Dr. Badlissi. The Division also participates in a monthly Radiology conference coordinated by Dr. Shmerling and Drs. Jim Wu and Mary Hochman in Radiology.

The Division sponsors a monthly Lupus/Clinical Immunology Lecture Series and an annual one-day Lupus Symposium. Distinguished speakers from around the country and the world are invited to present their findings at these events. Basic and clinical researchers, students and fellows from various Boston institutions attend these events. Dr. Tsokos is the Chair of an Annual School on Systemic Autoimmune Diseases under the aegis of the Clinical Immunology Society and a Co-Chair of an annual international meeting sponsored by the Excellence in Rheumatology Institute. Dr. Tsokos also serves as the Director of the Federation of Clinical Immunology Societies Center for Excellence, which aims to promote educational and collaborative activities among 20 clinical/basic immunologists at BIDMC.

Patient Spotlight

Danielle Remis Hackel — Dr. Tsokos has been innovative, creative and instrumental in my good health and well-being. He's always looked at me holistically as a mom and wife and in the work place. I appreciate his compassion, good listening and collaboration with my whole team of physicians at BIDMC. He breaks down difficult ideas so that I can understand them. He's sensitive to my whole family's needs. He's always asking about my kids – where are they, will they be okay, who's taking care of them. He has a daughter my age, and he treats me like his own kid.

Honors and Awards

George Tsokos, MD – Serves as Chair of the following: the Hypersensitivity, Autoimmunity and Immune-Mediated Study Section, National Institutes of Health; Alliance for Lupus Research Study Sections; Committee on Journals and Publications; and the Abstract Selection Committee of the American College of Rheumatology. He was also selected as a 2010 "Top Doctor" by *Boston Magazine* and Castle Connolly. He serves as Editor-in-Chief of *Clinical Immunology.*

Jose Crispin, MD – Serves on the Alliance for Lupus Research Study Section.

Vasileios Kyttaris, MD – Serves on the Department of Defense Lupus and the Arthritis Foundation Study Sections.

Robert Shmerling, MD – Named a 2011 Castle Connolly "Top Doctor" for Massachusetts, a *U.S. News and World Report* Top Rheumatologist, one of the "Best Doctors in America" by Best Doctors and a member of the Boston Super Doctors by SuperDoctors. He also serves on the ACR Committee on Ethics and Conflict of Interest.

Gwen Kane-Wanger, MD – Serves as Secretary-Treasurer, New England Rheumatism Society.

Research Activities

The Division has an active and expansive basic, translational and clinical research program in the field of rheumatic diseases with special emphasis on the study of SLE. Division investigators are interested in studies of immune cell signaling and gene transcription in SLE, as well as in mechanisms of tissue injury. Peripheral blood, kidney and skin tissues and genetically engineered animals are used to identify novel therapeutic targets and biomarkers for the diagnosis of the disease. The superseding goal of the research program is the identification of novel molecular treatment targets and disease biomarkers.

Dr. Tsokos directs a T32 Training Program on Systemic Autoimmunity. Through this program, fellows in rheumatology, nephrology, dermatology and other subspecialties, as well as basic sciences, will be mentored to become independent investigators in the field of lupus or other systemic autoimmune diseases.

Faculty

Ingrid Avalos, MD
Fadi Badlissi, MD
Jose C. Crispin, MD
Guo-Min Deng, MD, PhD
Arturo Diaz, MD
Sukran Ergin, MD
Lisa Fitzgerald, MD
Gwen Kane-Wanger, MD
Vasileios Kyttaris, MD
Linda Lieberman, PhD
Vaishali Moulton, MD, PhD
Jennifer Nashel, MD
Paul Romain, MD
Robert H. Shmerling, MD
Francine Ton-Nghiem, MD, MMSc
David Trentham, MD
George Tsokos, MD
Ritu Viliyil, MD

Selected Publications

Yeh GY, Kaptchuk TJ, Shmerling RH. Prescribing tai chi for fibromyalgia-are we there yet? *N Engl J Med* 2010; 363:783-4.

Juang YT, Rauen T, Wang Y, Ichinose K, Benedyk K, Tenbrock K, Tsokos GC. Transcriptional activation of the cAMP-responsive modulator promoter in human T cells is regulated by protein phosphatase 2A-mediated dephosphorylation of SP-1 and reflects disease activity in patients with systemic lupus erythematosus. *J Biol Chem* 2011; 286:1795-801.

Crispin JC, Apostolidis S, Finnell M, Tsokos GC. Induction of PP2A Bβ, a novel regulator of IL-2 deprivation-induced T cell apoptosis, is deficient in systemic lupus erythematosus. *Proc Natl Acad Sci USA* 2011; 108:12443-8.

Lahita R, Tsokos GC, Buyon J, Koike T. *Systemic Lupus Erythematosus. 5th ed.* Philadelphia (PA): Elsevier; 2011.

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Ghiran IC, Zeidel ML, Shevkoplyas SS, Burns JM, Tsokos GC, Kyttaris VC. Systemic lupus erythematosus serum deposits C4d on red blood cells, decreases red blood cell membrane deformability, and promotes nitric oxide production. *Arthritis Rheum* 2011; 63:503-12.

Kis-Toth K,Thai TH, Szanto A, Tsokos GC. Cytosolic DNA-activated human dendritic cells are potent activators of the adaptive immune response. *J Immunol* 2011; 187:1222-34.