

a report by

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The theme for this year's annual meeting of the American College of Allergy, Asthma and Immunology is the title of that old Carpenter's song, "We've Only Just Begun". The theme reflects the fact that we in allergy and immunology, as in all of medicine, stand on the verge of exciting advances in diagnostics and therapeutics. This progress is being fueled by the extraordinary growth of knowledge about the immune system, especially allergic and inflammatory mechanisms. This is happening as we grow more informed about the genetics, epidemiology, and the socioeconomic realities of allergic diseases.

Basic advances made some years ago are starting to bear fruit. For example, I recall as a young scientist at National Institutes of Health (NIH) in the late 1960s, Dr Ira Finegold in our laboratory (the Immunology Branch of the National Cancer Institute) was able to culture lymphocytes from patients with Burkitt's lymphomas and show that they produced immunoglobulins. At the same time, others in our lab were demonstrating that some myeloma proteins could be shown to have antigen-binding properties and were, as predicted, monoclonal antibodies. Several years later, Milstein and Kohler, in Nobel-prize winning work, were able to produce monoclonal antibodies in vitro. And now, the payoff comes with the construction of humanized mouse monoclonal antibodies with well-defined specificities that are effective in the treatment of human disease.

Such a drug is omalizumab, which is reviewed in this issue. It is a humanized mouse anti-immunoglobulin E (IgE) that is in clinical use for the treatment of moderate to severe asthma and has been shown to be effective in allergic rhinitis and for adjuvant treatment in rapid desensitization protocols, ('rush' immunotherapy). Its efficacy for food allergies and chronic urticaria is under investigation.

Investigations in recent years of immunological mechanisms of allergic disease have emphasized the Th1–Th2 paradigm. Cytokines characteristic of Th2 cellular responses tend to be associated with allergic reactions. While this has been a useful conceptual framework, it may oversimplify the actual situation, at least in some cases. It is known that atopic dermatitis, while starting as a Th2 reaction, can evolve into one in which Th1 mechanisms come in to play.

A recent study showed that a tumor necrosis factor (TNF)- α blocker, etanercept, can be helpful in some patients with refractory asthma. This implies that Th1 inflammation may have a role in asthma as it does in other inflammatory diseases. We can be sure that other such agents are being developed and will be heard about in the not too distant future.

Finally, our older drugs are constantly being refined and reviewed. There have been some safety concerns about the use of long-acting beta agonists. The US Food and Drug Administration (FDA) has weighed in strongly on this issue but there continues to be a lot of debate within the asthma community about the risks of these drugs and what precautions (screening for genetic variants that might increase the risk of adverse effects, for example) need to be taken. Newer, more specific and safer-inhaled corticosteroids continue to be developed and approved for use.

Biomarkers are being explored to assist the clinician in diagnosing and treating allergic conditions. The testing of exhaled nitrous oxide is being evaluated as such an aide in determining the degree of airway inflammation that would make it valuable in managing the asthmatic patient.

The future is bright for sufferers from allergic and other inflammatory diseases because "We have only just begun". ■



Daniel Ein, MD, is Clinical Professor of Medicine at the George Washington University School of Medicine and Chief of its Division of Allergy. He has been in the clinical practice of allergy since 1972 and founded what became Washington Allergy Associates in 1974. Professor Ein's major professional activity is and has always been his practice. In addition, he has been very active in local and national medical affairs ranging from the Presidency of the Medical Society of DC to Presidency of the Joint Council of Allergy, Asthma and Immunology. He is currently President Elect of the American College of Allergy, Asthma and Immunology (ACAAI) and is scheduled to become President of the College in November 2006. Among other activities, he has served on the DC State Health Planning and Development Agency, sits on a Mayoral Task Force on Bioterrorism, chairs emergency preparedness efforts for the Medical Society of DC and has been a member of a US Food and Drug Administration (FDA) advisory committee. He received his BA from Columbia University and his MD from Albert Einstein College of Medicine, both in New York. He interned in Medicine at Einstein and did his Internal Medicine residency at the Massachusetts General Hospital.