3rd Biennial International Symposium on AMD

This year's Biennial Symposium on AMD had special significance because of the receipt of the 2014 António Champalimaud Vision Award, which recognized the development of antiangiogenic therapies for AMD and other retinal diseases. Five members of the HMS Department of Ophthalmology were among the seven Champalimaud Laureates who identified vascular endothelial growth factor (VEGF) as a therapeutic target for the treatment of ocular pathologies with associated angiogenesis and/or edema.

Dr. Miller, who was one of the Champalimaud Laureates, emphasized the importance of basic biology in therapeutic development. "Successful treatment has been based on therapy targeted to a key pathway: VEGF as a mediator of angiogenesis and permeability," she said in her opening remarks. "Targeted therapies for early disease require better understanding of AMD pathogenesis."

Accordingly, many of the presentations focused on the pathogenesis of early AMD. The complement system, a component of innate immunity, featured prominently throughout the symposium. Additional immune-related topics discussed in the symposium included inflammasome activation and cellular immune modulators such as macrophages, microglial cells and mast cells.

Other emerging topics that were covered included oxidative stress and micro RNAs as biomarkers and therapeutic targets in AMD. Researchers are also aggressively pursuing potential therapies for the atrophic or "dry" form of AMD. Highlights in this area included mechanisms of photoreceptor death and early-phase clinical investigation of stem cell therapy for dry AMD.

Reflecting the dynamic field of AMD research, symposium topics have continued to evolve since the Biennial International Symposium on AMD began in 2010. In the original symposium, complement was a major topic of discussion, catalyzed by a flurry of genetic studies that linked several complement-related genes with disease risk. Although lipid metabolism largely dominated the 2nd Biennial Symposium on AMD in 2012, the spotlight was "back on the complement bandwagon," joked Robert D'Amato, MD, PhD, referring to the ongoing scrutiny of the complement system and clinical trials of complement-directed therapies for AMD.

The arena of AMD genetics has progressed beyond gene association studies. Efforts are underway to clarify the phenotypic manifestations of specific genotypes, and to elucidate the biological implications of gene variants. Besides the more commonly studied alterations on gene transcription rate and protein sequence, novel repercussions of single-base variations (including "silent" polymorphisms) were discussed—such as altered protein translation rate and its impact on protein conformation and stability.

To continue the enthusiasm generated by the 2010 and 2012 symposia, this year's meeting had similar structure: talks were organized into sessions by topic, and each session concluded with a 40-minute panel discussion composed of the session presenters and additional selected participants. The panel discussions were well received and facilitated the synthesis of multiple ideas into cohesive, productive dialogues. "Along with the great speakers, the concept of a lengthy group discussion with the panel

makes this symposium so valuable," said one participant. "Often the audience members have thought of provoking comments that otherwise would go unspoken."

The 3rd International Biennial Symposium on AMD was a great success, drawing nearly 250 clinicians, researchers, and trainees, and industry representatives from around the world. "Well worth the trip," said one attendee, who traveled from Copenhagen, Denmark to attend the meeting. Other participants echoed this sentiment. As declared by one enthusiastic participant: "So far, this is the best meeting I have attended on AMD."