ARVO 2013 in Seattle

The Annual meeting of the Association for Research in Vision and Ophthalmology (ARVO) was held from May 5-9, 2013, in Seattle, USA. The event was organized to facilitate the advancement of basic and clinical vision research with a goal of prevention and cure of ophthalmic disorders in the world.

The conference started with a brief introduction by course coordinator after which in the first session 'Diabetic Retinopathy: Where Do We Stand and Where Do We Go from Here?', 'Entrepreneurship in Ophthalmology: Pathways to Innovation, Ophthalmic Oncology Update: Molecular Signature of Ocular and Orbital Tumors and Targeted Biologic Treatment Opportunities, Predicting, Measuring and Treating Changes in Corneal Biomechanics' were discussed. This course led to discussion about both basic and clinical sciences of diabetic retinopathy. The role of cancer stem cells and molecular characteristics of ocular tumor that may lead to targeted therapy was also discussed. The multidisciplinary overview about the state of the art in measuring and predicting changes in corneal biomechanics was presented. The second session on the same day was on micro RNA and Ocular Disease which was directed by Shusheng Wang and Martin Friedlander. The discussion in the session was based on the use of micro RNAs as research tool, the role of micro RNAs in ocular angiogenesis, deep sequencing for micro RNAs, micro RNAs in degenerative diseases as well as therapeutic targets.

On second day the major area covered in the session were: Architecture of the Eye: Structural Biology and Vision, From the Cell to Therapy: Transforming Vision and Life, Imaging of Ocular Vasculature and Flow, CNS and Ocular Inflammation and Infection, Mechanisms in AMD: Novel Markers and Risk Factors, Innovations in Ocular Imaging, Understanding the Role Biofilm and Infections in Keratoprosthesis, Life Changing Impacts of International Extremism on Animal Research, Pathobiology of the Choroid

in Aging and AMD, Genetics Group: Advances in the Genetics of Common Ocular Disorders with Complex Inheritance. The main discussion was based on learning a variety of high resolution structural techniques is uncovering the architecture of the remarkable optical and neuronal organ. This included critical findings from developmental biology and follow their promising trajectory of influence on the understanding of major blinding disorders and approaches to treatment. The genetic risk factors identified by the Genome-wide association studies and next generation sequencing which are critically important steps toward the development of gene-based screening and could also suggest novel therapeutic approaches based on the molecular events underlying these common ocular disorders was also discussed.

On third day the main sessions were devoted on Photoreceptor Cilium and Ciliopathies, CNV: Clinical and Translational Research, Retinoblastoma: Pre-Clinical Models and Targeted Therapies, Neuroprotection in the Retina and RPE, Retinal Circuits and Visual Responses, Visual Cycle, Retinoids and Carotenoids, AMD: Translational Research, Genetic Epidemiology: GWAS and SNPs Around the World, Nanotechnology and Regenerative Medicine, Cone Photoreceptors in Aging and Disease, Using Stem Cells to Model Retinal Degenerative Disease, AMD and Drugs, Neuroprotection in the Visual Pathway: Common Mechanisms in Retina, Optic Nerve and Brain. The central points of the discussion included the role of cilium in photoreceptors. The role of neuropeptides in immunity and infection, understanding the mechanisms of both pro and anti-inflammatory neuropeptide regulation of inflammation which has the potential to facilitate the use of these molecules for ocular inflammatory and infectious disease control were discussed.

The sessions on other days were based on following topics: Gene Regulation: Transcription and Epigenetics, Protein Traf-

ficking in Photoreceptors and interactions between the Retina and RPE, Visual Behavior, Disease, and Restoration, Biochemical and Molecular Mechanisms of Diabetic and Retinal Disease, AMD: Long Term Outcomes and Safety of Anti VEGF, Risks Associated with AMD, Corneal Epithelium and Imaging, Clinician-Scientist Forum: How to Become a Successful Clinician-Scientist, Nanotechnology and Regenerative Medicine Group: Minimally Invasive Biometric Technology as a Means to Improve Detection, Understanding, and Treatment of Ocular Disease, AMD: Morphology and Novel Risk Factors, Biochemistry of Glaucoma, Retinitis Pigmentosa II, AMD: Novel and Combination Therapies, Macular Disease other than AMD, Neuro-Ophthalmology: Novel Treatments and Mechanisms of Disease, What Role Do Mueller Glial Cells Play in Retinal Pathology?, Epigenetic Mechanism and Ocular Diseases, Getting Published: The Good, the Bad, and the Ugly, Neuroprotection, Retinal Detachment, Restoration of Vision, Photoreceptor Degeneration and Death, Gene Therapy and Delivery, Corneal Wound Repair and Healing etc.

In the conference Dr. Akshay Anand presented his work on the role of VEGF in proliferation of Ciliary Epithelium cells showing the mediation by Jagged-Notch pathway. The work presented good response, discussion and collaborative opportunities. I presented a paper on the "Association of the SOD activity, rs1061170 in CFH and rs1531289 in VEGFR2 with protein levels in North Indian age related macular degeneration patients." This work illustrated that the increased levels of VEGFR2 and decrease in CFH with polymorphism in Indian population may be associated with AMD suggesting the role of VEGFR-2 and CFH in pathogenesis of AMD. This work was equally well received.

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