

RESEARCH UPDATE

See the Scientific Posters: Second Session

Today brings a new crop of scientific posters. Those that were up on Saturday and Sunday have been replaced with a new set that is on display today and tomorrow.

As with yesterday's *Academy News*, today's issue covers a range of "Best Posters" for your perusal. Take a look below, and then head over to Hall D to view these—and many other—posters firsthand and talk with the authors.

CATARACT

Correlating Lens Density on Pentacam Images With LOCS III

Brar and colleagues set out to correlate lens density on Scheimpflug images with the Lens Opacities Classification System III (LOCS III), comparing each with best-corrected visual acuity and contrast sensitivity. Their research was carried out at the Grewal Eye Institute, Chandigarh, India.

"LOCS III grading is the current established standardized system for quantifying cataracts," noted coauthor Dilraj Singh Grewal, MBBS, who is currently a research fellow at Bascom Palmer Eye Institute in Miami. "However, it is quite subjective. The Pentacam rotating Scheimpflug camera provides an analysis of the lens density in 50 meridians, which is nearly observer-independent. This is the first system to provide an objective global lens density measurement."

The study included 55 patients with nuclear cataract. BCVA was recorded using Early Treatment Diabetic Retinopathy Study charts, and contrast sensitivity was measured using CSV-1000LV contrast charts (Vector-Vision). After dilation, 50 Pentacam images were captured for each eye, and the lens density was then calculated. Lens opacity on slit-lamp images was graded using LOCS III. The results demonstrated that the lens density on Scheimpflug images correlated positively with LOCS III and negatively with BCVA and contrast sensitivity.

The authors conclude that Scheimpflug images allow quantification of lens density, which correlates with LOCS III grading. "Future areas of research on this subject could include: analysis of lens density as well as correlation with the incidence in different ages and populations; correlation with probable etiological factors; predicting the phaco energy to be used during surgery; and expanding on outcomes of cataract surgery," said Dr. Grewal.

—Lori Baker Schena

The authors report no related financial interest.

■ **Poster #250** will be presented Monday from 12:30 to 2 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

Argon Laser Iridoplasty After Multifocal IOL Implantation

Solomon and colleagues have found that argon laser iridoplasty represents a safe and effective technique to improve the quality of vision following implantation of multifocal intraocular lenses. The authors' objective was to use this approach to center the pupil over the IOL. In this study, 14 eyes of 11 patients underwent argon laser iridoplasty, and one month later they were measured for uncorrected visual acuity, best-corrected visual acuity, contrast sensitivity and satisfaction.

Mean pupil shift measured by digital photography was 0.55 mm, and patients demonstrated a statistically significant improvement in photopic and scotopic contrast sensitivity and patient satisfaction. "It is well known that the center of the pupil is not coincident with the center of the capsular bag," said Renée Solomon, MD, and Eric D. Donnenfeld, MD, in private practice in New York. "By performing argon laser iridoplasty, we can easily improve the optics of the multifocal IOLs and in doing so improve quality of vision."

—Lori Baker Schena

■ **Poster #270** will be presented Monday from 12:30 to 2 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

CORNEA

Deep Lamellar Endothelial Keratoplasty: Stability of Vision, Refraction, Astigmatism and Endothelial Cell Density at One Year
Building upon the pioneering work of Mark A. Terry, MD, researchers Fillmore, Sutphin and Goins prospectively evaluated the outcomes of 91 deep lamellar endothelial keratoplasties in 86 eyes for endothelial failure.

"The benefits from Dr. Terry's early work made it clear to me that I should make the transition from standard keratoplasty to deep lamellar endothelial keratoplasty," said Kenneth M. Goins, MD, clinical professor of ophthalmology and visual sciences at the University of Iowa.

The results of the study indicated that at 12 months postprocedure, 61 percent of eyes achieved 20/40 or better best-corrected visual acuity, which is an improvement of approximately 12 percent when compared with previous studies. "However, while astigmatism is the Achilles' heel of standard corneal transplantation, endothelial cell density is the nemesis of deep lamellar endothelial keratoplasty. We found an endothelial cell loss of 46 percent, which represents approximately a 20 percent increase compared with other studies. Clearly, deep lamellar endothelial keratoplasty is equivalent to standard corneal transplantation. Perfecting the procedure

will require additional research," said Dr. Goins.

—Leslie Burling-Phillips

■ **Poster #314** will be presented Monday from 12:30 to 2 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

GENERAL MEDICAL CARE

Bacterial Contamination of Ophthalmic Solutions Used in an Extended Care Facility

In an effort to assess bacterial contamination of ophthalmic solutions, Jokl and colleagues examined 123 vials of steroid/anti-inflammatory, antimicrobial/steroid/anti-inflammatory, glaucoma, and dry eye solutions in active use in a nursing home facility. In addition to the culture, both length of time used and the physical appearance of the vial were evaluated. Although 30 percent of the vials appeared "dirty" upon visual inspection, time of use or appearance did not predict contamination.

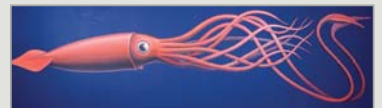
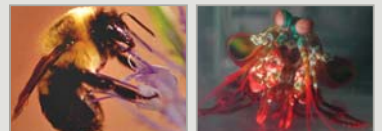
The group found that 8 percent of the ophthalmic solutions were contaminated and 80 percent of the contamination was caused by the bacteria *Proteus mirabilis*. Further, vials containing steroids were contaminated 5.8 times more frequently than those that did not contain steroids. Mydriatic, miotic and antimicrobial solutions were found to be bacteria-free.

"We were surprised by our findings," said Danny H.-Kauffmann Jokl, MD, clinical professor of ophthalmology at New York Medical College. "Drops at the nursing home are provided new each month, and most of the vials looked clean. Consequently, we were not expecting to find any pathogens, so that the high percentage of bacterial contaminants we did find, their pathogenicity and their potential for systemic absorption via an ocular route—possibly resulting in local infection or even septicemia—was cause for our concern. Assuming sterility in their manufacture,

Ophthalmic Trivia Quiz: Answers

How well did you do? Answers to the trivia quiz are listed below. If you missed the questions, pick up yesterday's *Academy News* and flip to page 21.

- Jackie Robinson.
- Esperanto; Ludovic Zamenhof.
- Bashar al-Assad, the president of Syria.
- Airline pilots, according to a 2005 study out of Iceland. Exposure to ultraviolet light is believed to be a risk factor associated with the development of cataracts, and scientists have looked at risks from exposure to other types of radiation as well. (SOURCE: Rafnsson V. et al. *Arch Ophthalmol* 2005;123:1102-1105.)
- Edgar Degas, Henri Matisse and Claude Monet.
- True.
- A microscopic mite that can be found in or around human eyelash follicles.
- Squirrels, pigeons and honeybees.
- Mantis shrimp, with 16 different photoreceptors dedicated to color (compared with four for humans).
- Eight.
- The giant squid, with a maximum diameter of about 10 inches.



BEST POSTERS

drops in single-dose packaging might be a way to avoid cross contamination," he said. Dr. Jokl is also clinical assistant professor of ophthalmology at Columbia University.

—Leslie Burling-Phillips
■ **Poster #315** will be presented Monday from 2 to 3:30 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

GLAUCOMA

Dynamic Contour vs. Goldmann Applanation Tonometry: The Search for True IOP

Is dynamic contour tonometry (DCT) more reliable than Goldmann applanation tonometry (GAT) for measuring the influence of central corneal thickness on intraocular pressure?

After obtaining DCT and central corneal thickness measurements from both eyes of 500 healthy subjects, Costa and colleagues confirmed that DCT measurements are poorly correlated to central corneal thickness. Mean DCT measurements were 3.24 mmHg higher than GAT readings.

Ranking DCT quality measurements on a scale of 1 (excellent) to 5 (inadequate), they found that lower quality scores may be associated with higher DCT readings.

"This finding suggests that we should be aiming for quality scores of 1 and perhaps 2 when using this instrument," said Vital Paulino Costa, MD, who directs the glaucoma service and is associate professor of ophthalmology at University of Campinas, Brazil.

—Miriam Karmel
Of the five authors, three report no related financial interest. Two had not reported either way at press time.
■ **Poster #334** will be presented Monday from 2 to 3:30 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

INTERNATIONAL OPHTHALMOLOGY

Ocular Tuberculosis: A Public Health Problem in Developing Countries

Jain and colleagues conducted a retrospective review of 119 patients with ocular tuberculosis between the ages of 4 and 30 in order to highlight the protean manifestations present between 1997 and 2006. In order of frequency, the manifestations included: inflammatory corneal lesions, preseptal cellulitis and lid abscess, peripheral corneal perforations, choroidal tubercles and tuberculomas, scleritis and scleral abscesses, orbital tuberculosis and osteomyelitis, and ciliary body masses.

"We were seeing such varied presentations of tuberculosis in our clinic that many cases were originally misdiagnosed. When patients did not respond to conventional treatments, we began to investigate further for tuberculosis and we treated accordingly. As a result, patients began to respond very well," said Priyanka Jain, MD, MBBS, who is a fellow at the Guru Nanak Eye Center in New Delhi. The group also found that 40 percent of cytology specimens were positive for acid-fast

bacilli. Results of the study indicated that ocular tuberculosis, a common cause of morbidity in both children and young adults, may be an important marker for an underlying systemic disease.

—Leslie Burling-Phillips
■ **Poster #354** will be presented Monday from 12:30 to 2 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

OCULAR TUMORS AND PATHOLOGY

Late-Onset Vitreous Hemorrhage After Plaque Radiotherapy for Uveal Melanoma

A retrospective analysis by Bianciotto and colleagues of 3,813 eyes treated with plaque radiotherapy for uveal melanoma at the Wills Eye Institute was conducted to determine the incidence, etiology and management of late-onset vitreous hemorrhage occurring between 1978 and 2006. Among these cases, 11 percent developed late-onset vitreous hemorrhage after an average follow-up period of five years.

"When you consider metastasis, patients with no vitreous hemorrhage were at the same risk as compared to patients with vitreous hemorrhage. Therefore, vitreous hemorrhage does not mean a patient is at a greater risk for metastatic disease and death," said coauthors Carlos G. Bianciotto, MD, a research fellow with the oncology service at Wills Eye Institute, and Carol L. Shields, MD, associate director of the oncology service at Wills and professor of ophthalmology at Thomas Jefferson University. "Similarly, patients with and without vitreous hemorrhage had comparable rates of recurrence of uveal melanoma. Further, removing the blood by vitrectomy will not worsen a patient's prognosis. In fact, patients who did not undergo vitrectomy were at a 9 percent risk for metastasis. Those who underwent vitrectomy had a 5 percent risk," they said.

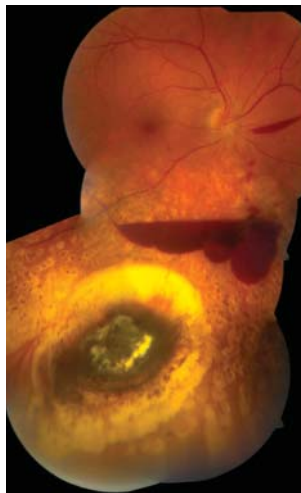
—Leslie Burling-Phillips
■ **Poster #377** will be presented Monday from 11 a.m. to 12:30 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

PEDIATRICS

Laser Flare Photometry for Visual Outcome in Juvenile Uveitis

Bodaghi and colleagues looked at pediatric uveitis, a chronic condition with many complications, which accounts for approximately 10 percent of all uveitis cases, with the most common etiology being juvenile idiopathic arthritis. "What we don't know are the salient predicting factors for its associated complications," said Bahram Bodaghi, MD, PhD, of the University of Paris VI department of ophthalmology and the Pitie-Salpetriere Hospital. Expanding on previous research, the group conducted a retrospective study to compare juvenile patients whose laser flare values decreased with treatment and those whose values did not.

Fifty-four children with juvenile idio-



ONCOLOGY. Subhyaloid hemorrhage in a patient with an inferior choroidal melanoma 28 months after plaque radiotherapy. Talk to the author of poster #377 from 11 a.m. to 12:30 p.m. Monday.

pathic arthritis-associated uveitis who had been evaluated for a minimum of one year with laser flare photometry were included in the study. Dr. Bodaghi and his group found that "indeed, laser flare photometry is a valuable and accurate tool that enables a physician to monitor inflammation as well as determine when patients should be treated more aggressively. Among the children for whom the laser flare values did not decrease significantly, we found more complications and therefore more aggressive treatment was necessary. The group whose values decreased significantly after a month of treatment had better visual outcomes."

—Leslie Burling-Phillips
■ **Poster #399** will be presented Monday from 11 a.m. to 12:30 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

RETINA, VITREOUS

Combination Treatment Is Same as Monotherapy for AMD

Is a combination of bevacizumab and triamcinolone superior to bevacizumab alone in treating neovascular AMD? No.

A study by Taei and colleagues at Farabi Eye Hospital and Labbafinejad Medical Center, in Tehran found that addition of a low dose of triamcinolone may not increase the therapeutic efficiency of intravitreal bevacizumab for treatment of neovascular AMD.

In the study, 99 eligible eyes were randomly assigned to bevacizumab alone or bevacizumab plus triamcinolone. The bevacizumab group received three injections of 1.25 mg bevacizumab six weeks apart. In the other group, the first injection was combined with 2 mg triamcinolone.

After six months, patients in both

groups had improved visual acuity and significant reduction of macular volume, with no significant difference between groups. There was also no difference between groups regarding need for a fourth injection.

"At present we would not tell doctors to combine triamcinolone with bevacizumab when they want to treat patients with neovascular AMD," said Hamid Ahmadi, MD, a study coauthor and director of the vitreoretinal service and professor of ophthalmology at Labbafinejad Medical Center.

—Miriam Karmel
The authors report no related financial interest.

■ **Poster #467** will be presented Monday from 11 a.m. to 12:30 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

Combination Treatment Reduced Macular Edema in CRVO

Intravitreal bevacizumab alone and a combination of intravitreal bevacizumab plus triamcinolone significantly improved best-corrected visual acuity and decreased central macular thickness in eyes with central retinal vein occlusion, according to a study by Faghihi and colleagues.

The decrease in central macular thickness was more pronounced in the combination treatment group.

Ninety-four eyes with central retinal vein occlusion were randomly assigned to treatment or sham treatment. After six weeks of injection, central macular thickness decreased 299 μ m in the group that received combination treatment, and 185 μ m in the group treated with bevacizumab alone. Central macular thickness increased 25 μ m in the sham group.

"We know that anti-VEGF therapy does not resolve underlying pathology in central retinal vein occlusion, but we can reduce macular edema, even with repeated injections, until the underlying pathology resolves spontaneously and retinal vein recanalizes," said Houshang Faghihi, MD, who is an associate professor of ophthalmology in the vitreoretinal surgery department at the Eye Research Center at the Farabi Eye Hospital, of the Eye Research Center, University of Medicine, Tehran.

—Miriam Karmel
The authors report no related financial interest.

■ **Poster #487** will be presented Monday from 11 a.m. to 12:30 p.m. in Hall D. The presenters also will be at their poster for one additional hour indicated on a mock clock by the poster board.

Series on Aging

Your Annual Meeting bag included two audio CDs in a new course series. **Age-Related Macular Degeneration**, is supported by a grant from Genentech; **Primary Open-Angle Glaucoma**, by Pfizer.