Spring 2015 Vol. 11, No. 2

Cornea Society News

Advancing the treatment of corneal disease

A Cornea Society publication

Wrap-up of WCCVII

World Cornea Congress VII officially kicked off with its Opening Ceremony, featuring an address by Cornea Society president **Christopher J. Rapuano, MD**, Philadelphia, highlighting the history of the Cornea Society and World Cornea Congress meetings and the direction the society hopes to go in the future.

The Cornea Society was established in 1975 with just 60 members, Dr. Rapuano said, but grew to 375 members in 1990 and has almost 1,000 members today. The society has always had international members, and over the past 10 years has made an effort to have a presence at international meetings and encourage membership from doctors all around the world, Dr. Rapuano said. Today, the Cornea Society has members from 44 countries, and World Cornea Congress VII attendees represent more than 60 different nations.

Following Dr. Rapuano's address was a performance by the world's first 3D dance troupe, Freelusion. The unique performance celebrated the many nations represented at World Cornea Congresses both past and present.

Dr. Price delivers the keynote lecture on endothelial keratoplasty at the "Techniques and Technologies for Endothelial Keratoplasty" session.

Keynote lectures highlight major cornea topics

Francis W. Price Jr., MD, Indianapolis, focused his keynote lecture on endothelial keratoplasty at the "Techniques and Technologies for Endothelial Keratoplasty" session. Dr. Price discussed the evolution of the procedure, with an examination of its history, new perspectives from current practice and research, and a brief look at the procedure's future.

As endothelial keratoplasty (EK) has evolved, "we've gotten more precise," he said. This sums up a fundamental aspect of the procedure's technical development over the years. In the broadest sense, this precision translates into the defining difference between PK and EK—i.e., the specificity of the tissue being transplanted, from a full-thickness graft to selective, more and more specific lamellar ones.

During the "Ocular Surface Disease" session, **Edward J. Holland, MD**, Cincinnati, presented the keynote lecture, "Limbal Stem Cell Deficiency: A Historical Perspective: Past, Present, and Future." Dr. Holland described how management of limbal stem cell deficiency (LSCD) has changed dramatically over the last several decades as physicians have gained a deeper understanding of the anatomy and physiology of the limbus.

What Dr. Holland would like to see in the next decade of ocular surface transplantation is safer, more efficacious immunosuppression protocols, reduced or non-antigenic donor tissues, and improvements in cultured limbal epithelial cell transplantation protocols. Culturing limbal stem cells needs to be more affordable, he said, and conjunctival stem cells need to be included in the culture.

The best and final solution for LSCD, however, is culturing the patient's own pluripotent bone marrow stem cells and differentiating them into cornea limbal and epithelial cells, Dr. Holland said.

In her keynote lecture at the "Infections and Inflammations" session, **Elisabeth J. Cohen, MD**, New York, discussed the management and prevention of herpes zoster with particular emphasis on herpes zoster ophthalmicus (HZO). Prevention where possible is certainly better than treatment. The zoster vaccine, she said, is safe and effective in reducing the burden of illness, as well as the severity of postherpetic neuralgia. However, Dr. Cohen thinks the vaccine is best administered earlier than recommended.

Shigeru Kinoshita, MD, PhD, Kyoto, Japan, described 2 "out of the box" approaches he has taken to treat corneal disease in his presentation, "Future Directions in Corneal Endothelial Cell Biology," the keynote at the

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Cornea Society
Advancing the treatment of corneal disease

President's Message

Christopher J. Rapuano, MD

Dear Cornea Society members,

I hope you were able to make it to San Diego for the recent World Cornea Congress (WCC) because it turned out to be a terrific meeting. The invited speakers did a great job. In fact, the "Inflammation and Infection" session was so popular that security actually had to limit the number of additional people who could enter the room for a few minutes until we were able to fill in empty seats. The free papers were excellent, as were the posters. The Opening Ceremony session was packed. I'm sure it wasn't to hear me speak but rather to listen to **Mark Mannis, MD**'s brief video on the history of the Society and WCC and then watch the incredible show by the dance troupe Freelusion. We tried something new this year and added luncheonettes both days where we invited industry to make brief presentations during lunch if attendees wanted to stay and listen. These turned out to be quite popular. And you can't go wrong with San Diego—the convention center and many hotels within walking distance are wonderful, the view of the water can't be beat, and the weather was superb! I can tell you, it is a great feeling when you can look back and know that the months (and even years) of work were worth it.

Such an event takes a huge amount of planning. Gail Reggio, our executive director, did a terrific job organizing the meeting. The program co-chairs, **Marian Macsai, MD**, **Donald Tan, MD**, and I, and the Program Committee, **Michael Belin, MD**, **Kathy Colby, MD**, **Terry Kim, MD**, **Barry Lee, MD**, and **Enzo Sarnicola, MD**, all worked hard to make sure the meeting went off without a hitch. During my Opening Ceremony speech, I acknowledged the American Society of Cataract & Refractive Surgery's (ASCRS) important role in organizing this meeting. We could not have done it without them, and they deserve a lot of the credit for the meeting's success. However, I was remiss in not also giving ASCRS, and executive director Dave Karcher in particular, credit for their part in the growth and success of the Cornea Society over the past 10 years or so. When **Ed Holland, MD**, and Dr. Mannis were making plans for the WCC V to be held in 2005, the Society had fewer than 400 members and less than $25,000 in the bank. With the encouragement of Dave Karcher, they took the bold step of deciding to hire a full-time executive director for the Society. Gail Reggio (who was working for ASCRS) was hired to help run the Society. They then took a gamble and chose to move the WCC in 2005 to right before the ASCRS meeting in Washington, D.C. Previously it was held adjacent to the Association for Research in Vision and Ophthalmology meeting. Dave Karcher had faith in the Society and felt a joint effort could be a win-win situation both short term for the WCC V and long term for other collaborations. ASCRS was extremely generous in their financial and administrative support of that WCC in Washington, D.C. The truth is, we could not have run that meeting without them. WCC V was a huge success and catapulted the Cornea Society to become the premier professional society it is today. Its success led to the first Cornea Day at ASCRS the following year, co-sponsored by the Society and the ASCRS Cornea Clinical Committee, a tradition that continues to this day. While we are very excited to hold the WCC VIII meeting in Singapore from July 8–9, 2020, in association with the Asia-Pacific Association of Cataract & Refractive Surgeons annual meeting, we will continue to partner with ASCRS on WCC VIII and many other projects. The collaboration between the Society and ASCRS continues to be a win-win, and we look forward to working together closely for many years to come.

In the next newsletter, I'll update you on the Fellows Educational Summit from October 15–18 in Tampa, Fla., and our plans for the American Academy of Ophthalmology meeting in Las Vegas in November. I wish you a wonderful spring and summer.

Sincerely,

Christopher J. Rapuano, MD
President

Differentiating between early keratoconus, ametropic eyes

High ametropic eyes had lower asymmetric values than those with very early keratoconus, according to recent research. The study aimed to discriminate between eyes with high myopia and astigmatism from those with forme fruste keratoconus (FFKC) and keratoconus (KC) using the intereye asymmetry of several parameters obtained from Scheimpflug imaging.

The study, presented by **Maria A. Henriquez, MD**, Lima, Peru, aimed to address the problems of very early KC and normal eyes showing similar parameters, as well as high ametropic eyes showing similar parameters to very early KC.

"It is easy to discriminate between normal and keratoconus eyes but it is hard to discriminate between very early keratoconus and ametropia eyes," Dr. Henriquez said.

The results of the prospective comparative study comparing groups of 294 bilateral keratoconus patients, 50 with high myopia or astigmatism, 30 with FFKC, and a 341 ammetropia patient control group was presented during a symposium at the 2015 ASCRS•ASOA Symposium & Congress of highlights from World Cornea Congress VII.

The asymmetry was determined by subtracting the right eye value from the left eye value for each variable—including keratometry, astigmatism, and asphericity—and by considering the absolute value of the result.

In addition to the finding that high ametropic eyes showed lower asymmetric values than very early keratoconus, the study also found that the asymmetry of the eyes was effective in discriminating between very early keratoconus and high ametropic eyes. The best parameter of asymmetry included elevation front and back, Belin-Ambrosio D, and astigmatism.

A separate presentation detailed the clinical presentation, characteristics, treatment, recurrences, complications, and final outcomes in children with herpes simplex virus infections. The 10-year observational, retrospective clinical study concluded that herpetic eye disease in children often is diagnosed late or misdiagnosed. High rates of epithelial dendritic and interstitial keratitis were found, as well as an increased risk of recurrence and vision loss due to corneal complications or amblyopia.

Specifically, the 109-patient study identified a median 30-day delay from the onset of symptoms to presentation. Red eye in patients was the most common (47.5%) reason for consultation, and the median best corrected visual acuity at presentation was a median of 20/80.

In the study, 38.8% of patients had a previous HSV diagnosis and 15.5% were misdiagnosed. The study also found a rate of recurrence of 9.4 per 1,000 person years.

"The only significant risk factor for the recurrence of the disease was the presence of epithelial dendritic keratitis," **Juan C. Serna-Ojeda, MD**, Mexico City, said about one of the major causes of infectious corneal blindness.

Additionally, the study found that the results of penetrating keratoplasty were good when not compromised by amblyopia.

A final finding was to urge prophylactic treatment with acyclovir on a long-term basis. The treatment had an adverse effect in only 4.8% of the children. Other data presented included preliminary results of recombinant human nerve growth factor (rhNGF) eye drops used for treating neurotrophic keratitis (NK). No pharmacologic therapy is available for NK, but previous research suggested that murine NGF eye drops could be a safe and effective treatment.

The phase 1/2 multicenter, randomized, double-masked, vehicle-controlled parallel group study has examined the safety and efficacy of 2 doses of recombinant human nerve growth factor eye drops compared to a vehicle in patients with stage 2 and 3 NK.

"The masked phase 1 results of the REPARO study suggest that rhNGF eye drops are safe and well tolerated, with no significant systemic or ophthalmic complications observed," said **Flavio Mantelli, MD, PhD**, Miami. Enrollment in phase 2 of the study was completed in March and follow up is ongoing. CN

Editors' note: Drs. Henriquez and Serna-Ojeda had no related financial interests. Dr. Mantelli has financial interests with Dompe US.

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"Corneal Tissue Engineering, Physiology, and Wound Healing" session. One of the options Dr. Kinoshita has begun to explore is injecting cultivated corneal endothelial cells (CECs) from a donor cornea for advanced-stage diseases such as Fuchs' endothelial corneal dystrophy or pseudophakic bullous keratopathy. In addition to being less invasive than an endothelial keratoplasty, this technique helps conserve precious donor tissue—1 donor cornea can provide enough cells to treat more than 200 patients.

For early phase endothelial disease, Dr. Kinoshita has been developing a method of using ROCK inhibitor eye drops to stimulate recovery of a patient's endothelial function. ROCK inhibitors promote cell adhesion and proliferation and inhibit apoptosis, making them excellent candidates for this procedure. Using CECs and eye drop therapy allows physicians to treat disease at an earlier stage and offer a less invasive alternative to a corneal transplant. CN

Editors' note: Dr. Holland has financial interests with Alcon, Bausch + Lomb, Kala Pharmaceuticals, Mati Therapeutics, Rapid Pathogen Screening, Senju Pharmaceuticals, TearLab, and TearScience. Dr. Kinoshita has financial interests with Abbott Medical Optics, Hoya, JCR Pharmaceutical Co., Otsuka Pharmaceutical Group, Pfizer, Santen, and Senju Pharmaceuticals. Dr. Price has financial interests with Bausch + Lomb. Drs. Cohen and Rapuano have no related financial interests.

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July 8-9, 2020

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Cornea journal spring report

The journal *Cornea*, sponsored by the Cornea Society, has continued to grow in quality. Nearly 1000 manuscripts were submitted in 2014, a 17% increase over 2013, and it appears that submissions will approach 1,200 this year. The acceptance rate for 2014 was 33.5%. The Cornea Society and the Editorial Board thank the authors and the many reviewers who spend much time and effort to evaluate and improve our papers.

A particularly notable paper, published in February, was the second edition of the IC3D Classification of Corneal Dystrophies. This is an update of the original IC3D from 2008, which has become a major resource for ophthalmologists evaluating corneal dystrophy patients. Another notable paper was the report of a Global Consensus on Keratoconus and Ectatic Diseases developed through an iterative Delphi process by an international panel of experts. It was the lead article in the April issue.

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Cornea Society presents 2015 Fellowship Educational Summit

The Cornea Society is pleased to present the 2015 Fellowship Educational Summit for current cornea fellows in Tampa, Fla. The program directors, **Kathryn A. Colby, MD, PhD, Deepinder Dhaliwal, MD** and **William Barry Lee, MD**, have assembled a distinguished faculty of dynamic speakers to address advanced concepts in anterior segment surgery and medical management of cornea and external diseases. Faculty members are **Esen Akpek, MD, Anthony A. Aldave, MD, Jessica Ciralsky, MD, Bennie H. Jeng, MD, Christopher J. Rapauno, MD** and **Elmer Tu, MD**.

Fellows will be introduced to the use and interpretation of anterior segment imaging tools ranging from corneal topography to anterior segment OCT and UBM. Practical applications of these skills will be put to the test and will cover basic and advanced concepts in surface ablation and LASIK. Common and uncommon diseases of the ocular surface including advanced dry eye will be discussed as well as a review of corneal considerations in cataract surgery and the management of corneal trauma. All aspects of complex cataract surgery, IOL management, and premium IOLs will be addressed as well.

For this year, the number of program participants is limited to 50, and the response has been tremendous. Registration for the 2-day program will open in July. Please visit fellows.corneasociety.org for further details. CN

FALL EDUCATIONAL SYMPOSIUM

LAS VEGAS 2015

FRIDAY, NOVEMBER 13

CALL FOR PAPERS AND REGISTRATION OPENS—JUNE 2015

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Advancing the treatment of corneal disease

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Society announces by-law changes

Over the past 6 months, the Society board of directors made some changes to the Society's by-laws. Some were small changes that mainly adjust the by-laws to accurately reflect the organization's operating procedures. However, 2 changes were more substantive. These changes were reviewed at the Society's business meeting and are outlined below.

By-law section 5.02 that outlines the makeup of the board was adjusted to reflect that the minimum number of international members on the board should be 2; it had been 3. It was changed from 2 to 3 about 5 years ago, but there has been difficulty in securing enough qualified international members who were interested (and able) to be board members. This change should not be seen as a decline in the Society's interest or commitment to the international cornea community but more as a way to allow for increased flexibility in selecting board members.

The second by-law change of note is section 6.04, the composition of the Nominating Committee. This section was changed so that there are fewer conflict of interests among those serving on the Nominating Committee and being considered for Executive Committee positions. To avoid these conflicts, the Nominating Committee will now be made up of 3 members of the Executive Committee who are not up for another position, namely, the president, president-elect and the past president. Each of these 3 people will select a current or former board member who does not want to be considered for a new position that year. Additionally, the most recent former past president (who is willing to serve) would be the 7th member of the committee. However, this person will not be a current board member.

These by-law changes and a number of other operational changes can be viewed in the most recent copy of the Society's by-laws on the members-only section of the website www.CorneaSociety.org. CN

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In conjunction with The Cornea Society

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The World Cornea Congress VII was a great success in April in San Diego. A supplemental issue of *Cornea* will be published in the fall containing full papers from the 7 keynote addresses, 6 of the free papers, and 63 abstracts. This is also likely to become a valuable reference.

Thank you to all who contribute in many ways to the *Cornea* journal. CN

Alan Sugar, MD,
editor-in-chief

DUREZOL®
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BRIEF SUMMARY OF PRESCRIBING INFORMATION

INDICATIONS AND USAGE
Ocular Surgery
DUREZOL® (difluprednate ophthalmic emulsion) 0.05%, a topical corticosteroid, is indicated for the treatment of inflammation and pain associated with ocular surgery.
Endogenous Anterior Uveitis
DUREZOL® Emulsion is also indicated for the treatment of endogenous anterior uveitis.

DOSAGE AND ADMINISTRATION
Ocular Surgery
Instill one drop into the conjunctival sac of the affected eye 4 times daily beginning 24 hours after surgery and continuing throughout the first 2 weeks of the postoperative period, followed by 2 times daily for a week and then a taper based on the response.

Endogenous Anterior Uveitis
Instill one drop into the conjunctival sac of the affected eye 4 times daily for 14 days followed by tapering as clinically indicated.

DOSAGE FORMS AND STRENGTHS
DUREZOL® Emulsion contains 0.05% difluprednate as a sterile preserved emulsion for topical ophthalmic administration.

CONTRAINDICATIONS
The use of DUREZOL® Emulsion, as with other ophthalmic corticosteroids, is contraindicated in most active viral diseases of the cornea and conjunctiva including epithelial herpes simplex keratitis (dendritic keratitis), vaccinia, and varicella, and also in mycobacterial infection of the eye and fungal disease of ocular structures.

WARNINGS AND PRECAUTIONS
IOP Increase
Prolonged use of corticosteroids may result in glaucoma with damage to the optic nerve, defects in visual acuity and fields of vision. Steroids should be used with caution in the presence of glaucoma. If this product is used for 10 days or longer, intraocular pressure should be monitored.

Cataracts
Use of corticosteroids may result in posterior subcapsular cataract formation.

Delayed Healing
The use of steroids after cataract surgery may delay healing and increase the incidence of bleb formation. In those diseases causing thinning of the cornea or sclera, perforations have been known to occur with the use of topical steroids. The initial prescription and renewal of the medication order beyond 28 days should be made by a physician only after examination of the patient with the aid of magnification such as slit lamp biomicroscopy and, where appropriate, fluorescein staining.

Bacterial Infections
Prolonged use of corticosteroids may suppress the host response and thus increase the hazard of secondary ocular infections. In acute purulent conditions, steroids may mask infection or enhance existing infection. If signs and symptoms fail to improve after 2 days, the patient should be re-evaluated.

Viral Infections
Employment of a corticosteroid medication in the treatment of patients with a history of herpes simplex requires great caution. Use of ocular steroids may prolong the course and may exacerbate the severity of many viral infections of the eye (including herpes simplex).

Fungal Infections
Fungal infections of the cornea are particularly prone to develop coincidentally with long-term local steroid application. Fungus invasion must be considered in any persistent corneal ulceration where a steroid has been used or is in use. Fungal culture should be taken when appropriate.

Topical Ophthalmic Use Only
DUREZOL® Emulsion is not indicated for intraocular administration.

Contact Lens Wear
DUREZOL® Emulsion should not be instilled while wearing contact lenses. Remove contact lenses prior to instillation of DUREZOL® Emulsion. The preservative in DUREZOL® Emulsion may be absorbed by soft contact lenses. Lenses may be reinserted after 10 minutes following administration of DUREZOL® Emulsion.

ADVERSE REACTIONS
Adverse reactions associated with ophthalmic steroids include elevated intraocular pressure, which may be associated with optic nerve damage, visual acuity and field defects; posterior subcapsular cataract formation; secondary ocular infection from pathogens including herpes simplex, and perforation of the globe where there is thinning of the cornea or sclera.

Ocular Surgery
Ocular adverse reactions occurring in 5-15% of subjects in clinical studies with DUREZOL® Emulsion included corneal edema, ciliary and conjunctival hyperemia, eye pain, photophobia, posterior capsule opacification, anterior chamber cells, anterior chamber flare, conjunctival edema, and blepharitis. Other ocular adverse reactions occurring in 1-5% of subjects included reduced visual acuity, punctate keratitis, eye inflammation, and iritis. Ocular adverse reactions occurring in < 1% of subjects included application site discomfort or irritation, corneal pigmentation and striae, episcleritis, eye pruritis, eyelid irritation and crusting, foreign body sensation, increased lacrimation, macular edema, sclera hyperemia, and uveitis. Most of these reactions may have been the consequence of the surgical procedure.

Endogenous Anterior Uveitis
A total of 200 subjects participated in the clinical trials for endogenous anterior uveitis, of which 106 were exposed to DUREZOL® Emulsion. The most common adverse reactions of those exposed to DUREZOL® Emulsion occurring in 5-10% of subjects included blurred vision, eye irritation, eye pain, headache, increased IOP, iritis, limbal and conjunctival hyperemia, punctate keratitis, and uveitis. Adverse reactions occurring in 2-5% of subjects included anterior chamber flare, corneal edema, dry eye, iridocyclitis, photophobia, and reduced visual acuity.

USE IN SPECIFIC POPULATIONS
Pregnancy
Teratogenic Effects
Pregnancy Category C. Difluprednate has been shown to be embryotoxic (decrease in embryonic body weight and a delay in embryonic ossification) and teratogenic (cleft palate and skeletal) anomalies when administered subcutaneously to rabbits during organogenesis at a dose of 1–10 mcg/kg/day. The no-observed-effect-level (NOEL) for these effects was 1 mcg/kg/day, and 10 mcg/kg/day was considered to be a teratogenic dose that was concurrently found in the toxic dose range for fetuses and pregnant females. Treatment of rats with 10 mcg/kg/day subcutaneously during organogenesis did not result in any reproductive toxicity, nor was it maternally toxic. At 100 mcg/kg/day after subcutaneous administration in rats, there was a decrease in fetal weights and delay in ossification, and effects on weight gain in the pregnant females. It is difficult to extrapolate these doses of difluprednate to maximum daily human doses of DUREZOL® Emulsion, since DUREZOL® Emulsion is administered topically with minimal systemic absorption, and difluprednate blood levels were not measured in the reproductive animal studies. However, since use of difluprednate during human pregnancy has not been evaluated and cannot rule out the possibility of harm, DUREZOL® Emulsion should be used during pregnancy only if the potential benefit justifies the potential risk to the embryo or fetus.

Nursing Mothers
It is not known whether topical ophthalmic administration of corticosteroids could result in sufficient systemic absorption to produce detectable quantities in breast milk. Systemically administered corticosteroids appear in human milk and could suppress growth, interfere with endogenous corticosteroid production, or cause other untoward effects. Caution should be exercised when DUREZOL® Emulsion is administered to a nursing woman.

Pediatric Use
Safety and effectiveness in pediatric patients have not been established.

Geriatric Use
No overall differences in safety or effectiveness have been observed between elderly and younger patients.

Nonclinical Toxicology
Carcinogenesis, Mutagenesis, and Impairment of Fertility
Difluprednate was not genotoxic *in vitro* in the Ames test, and in cultured mammalian cells CHL/IU (a fibroblastic cell line derived from the lungs of newborn female Chinese hamsters). An *in vivo* micronucleus test of difluprednate in mice was also negative. Treatment of male and female rats with subcutaneous difluprednate up to 10 mcg/kg/day prior to and during mating did not impair fertility in either gender. Long term studies have not been conducted to evaluate the carcinogenic potential of difluprednate.

Animal Toxicology and/or Pharmacology
In multiple studies performed in rodents and non-rodents, subchronic and chronic toxicity tests of difluprednate showed systemic effects such as suppression of body weight gain; a decrease in lymphocyte count; atrophy of the lymphatic glands and adrenal gland; and for local effects, thinning of the skin; all of which were due to the pharmacologic action of the molecule and are well known glucocorticosteroid effects. Most, if not all of these effects were reversible after drug withdrawal. The NOEL for the subchronic and chronic toxicity tests were consistent between species and ranged from 1–1.25 mcg/kg/day.

PATIENT COUNSELING INFORMATION
Risk of Contamination
This product is sterile when packaged. Patients should be advised not to allow the dropper tip to touch any surface, as this may contaminate the emulsion.
Use of the same bottle for both eyes is not recommended with topical eye drops that are used in association with surgery.

Risk of Secondary Infection
If pain develops, or if redness, itching, or inflammation becomes aggravated, the patient should be advised to consult a physician.

Contact Lens Wear
DUREZOL® Emulsion should not be instilled while wearing contact lenses. Patients should be advised to remove contact lenses prior to instillation of DUREZOL® Emulsion. The preservative in DUREZOL® Emulsion may be absorbed by soft contact lenses. Lenses may be reinserted after 10 minutes following administration of DUREZOL® Emulsion.

Revised: June 2012
U.S. Patent 6,114,319

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3x more cataract patients achieved zero inflammation on postoperative Days 8 and 15 vs placebo
- 22%* vs 7% on Day 8; 41%* vs 11% on Day 15[1]

Nearly 2x as many cataract patients achieved zero pain on postoperative Days 8 and 15 vs placebo
- 58%* vs 27% on Day 8; 63%* vs 35% on Day 15[1]

WHEN TREATING ENDOGENOUS ANTERIOR UVEITIS, DUREZOL® EMULSION WAS NONINFERIOR TO PRED FORTE^ (DUREZOL® EMULSION 4X DAILY VS PRED FORTE^ 8X DAILY)[1]

- **BETTER** or comparable formulary coverage vs generic prednisolone acetate on some Medicare Part D plans[4-7]
- **NO** therapeutic equivalent to DUREZOL® Emulsion

*Pooled data from placebo-controlled trials in patients undergoing cataract surgery; $P<0.01$ vs placebo.
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INDICATIONS AND USAGE:

DUREZOL® Emulsion is a topical corticosteroid that is indicated for:
- The treatment of inflammation and pain associated with ocular surgery.
- The treatment of endogenous anterior uveitis.

Dosage and Administration

- For the treatment of inflammation and pain associated with ocular surgery instill one drop into the conjunctival sac of the affected eye 4 times daily beginning 24 hours after surgery and continuing throughout the first 2 weeks of the postoperative period, followed by 2 times daily for a week and then a taper based on the response.
- For the treatment of endogenous anterior uveitis, instill one drop into the conjunctival sac of the affected eye 4 times daily for 14 days followed by tapering as clinically indicated.

IMPORTANT SAFETY INFORMATION

Contraindications: DUREZOL® Emulsion, as with other ophthalmic corticosteroids, is contraindicated in most active viral diseases of the cornea and conjunctiva including epithelial herpes simplex keratitis (dendritic keratitis), vaccinia, and varicella, and also in mycobacterial infection of the eye and fungal diseases of ocular structures.

Warnings and Precautions

- Intraocular pressure (IOP) increase—Prolonged use of corticosteroids may result in glaucoma with damage to the optic nerve, defects in visual acuity and fields of vision. If this product is used for 10 days or longer, IOP should be monitored.
- Cataracts—Use of corticosteroids may result in posterior subcapsular cataract formation.
- Delayed healing—The use of steroids after cataract surgery may delay healing and increase the incidence of bleb formation. In those diseases causing thinning of the cornea or sclera, perforations have been known to occur with the use of topical steroids. The initial prescription and renewal of the medication order beyond 28 days should be made by a physician only after examination of the patient with the aid of magnification such as slit lamp biomicroscopy and, where appropriate, fluorescein staining.
- Bacterial infections—Prolonged use of corticosteroids may suppress the host response and thus increase the hazard of secondary ocular infections. In acute purulent conditions, steroids may mask infection or enhance existing infection. If signs and symptoms fail to improve after 2 days, the patient should be re-evaluated.
- Viral infections—Employment of a corticosteroid medication in the treatment of patients with a history of herpes simplex requires great caution. Use of ocular steroids may prolong the course and may exacerbate the severity of many viral infections of the eye (including herpes simplex).
- Fungal infections—Fungal infections of the cornea are particularly prone to develop coincidentally with long-term local steroid application. Fungus invasion must be considered in any persistent corneal ulceration where a steroid has been used or is in use.
- Contact lens wear—DUREZOL® Emulsion should not be instilled while wearing contact lenses. Remove contact lenses prior to instillation of DUREZOL® Emulsion. The preservative in DUREZOL® Emulsion may be absorbed by soft contact lenses. Lenses may be reinserted after 10 minutes following administration of DUREZOL® Emulsion.

Most Common Adverse Reactions

- Post Operative Ocular Inflammation and Pain—Ocular adverse reactions occurring in 5-15% of subjects included corneal edema, ciliary and conjunctival hyperemia, eye pain, photophobia, posterior capsule opacification, anterior chamber cells, anterior chamber flare, conjunctival edema, and blepharitis.
- In the endogenous anterior uveitis studies, the most common adverse reactions occurring in 5-10% of subjects included blurred vision, eye irritation, eye pain, headache, increased IOP, iritis, limbal and conjunctival hyperemia, punctate keratitis, and uveitis.

For additional information about DUREZOL® Emulsion, please refer to the brief summary of Prescribing Information on adjacent page.

For more resources for eye care professionals, visit MYALCON.COM/DUREZOL.

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