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Changing Dry Eye Treatment

Old standbys still help, but the latest dry eye therapies are life-changing



Dr. Donaldson: Just as we've witnessed the development of new diagnostic technologies for dry eye, we've also seen new medications and therapies that allow us to bring even difficult cases under control so patients can lead better lives. Some therapies are in use already, and many more are in the pipeline.

From the Dependable to the Exciting

Dr. Donaldson: If MMP-9 testing is positive, most of my patients begin treatment with a combination of cyclosporine (Restasis, Allergan) and loteprednol (Lotemax, Bausch + Lomb). I'm instituting cyclosporine much earlier than I did a few years ago in an effort to decrease inflammation before it causes long-term tissue damage on the ocular surface. The goal is to break the cycle of inflammation and worsening dry eye, so treating preemptively instead of telling everyone to use artificial tears until late in the disease course is a more effective approach.

Lifitegrast (Xiidra, Shire) was approved in July for the treatment of signs and symptoms of dry eye disease in adults.

We also have many exciting treatments in the pipeline for dry eye, one of which is the OcuLeve Intranasal Tear Neurostimulator (Allergan), which is a non-invasive nasal device designed to increase tear production in patients with dry eye disease.

There are at least 10 other drugs in the pipeline for dry eye. It's very exciting to follow their progress and envision all of the new options for our patients in the future. We'll have more help for patients who have been struggling for a long time. While we're making big strides in understanding and diagnosing dry eye, our arsenal of treatments is moving ahead at a swift pace as well.

Prokera Amniotic Membranes

Dr. Donaldson: We have many new treatment modalities. One is the use of amniotic membranes such as Prokera (Bio-Tissue). How is it working for your patients?

Dr. McDonald: On an average day, I put in two to four Prokera amniotic membranes. It's for desperate dry eye patients, and it works beautifully.

Prokera is a ring of polymethyl methacrylate with amniotic membrane suspended across the center. You insert it and leave it on the eye for 5 to 7 days. Usually we do one eye at a time. I've found that most patients get weeks or months of relief. Once in a while, I get a patient who is very dry with 4+ filaments, and I have to put in the amniotic membranes again and again — two or three sets in a row — to make the patient feel comfortable for a few months.

I was taught that I should splint the lid with tape when using Prokera, but I've never had to tape any of my patients, and it stays in. Patients usually prefer to forgo the tape.

Dr. Donaldson: I tape everybody. I joke with my patients that it makes quite a fashion statement. I basically use a half-width piece of plastic medical tape that fits lengthwise over the upper lid to create a tape tarsorrhaphy. It's actually minimally noticeable and reasonably acceptable aesthetically. This limits upper lid excursion so that the patient blinks halfway and there is less rubbing over the surface of the Prokera ring. The thinner Prokera Slim has been a huge advance in comfort, as well. I really haven't had a patient complain of discomfort with Prokera since I've been using the Prokera Slim in combination with a tape tarsorrhaphy.

Dr. McDonald: Bio-Tissue just came out with the Prokera Slim Clear. It has a 6-mm hole in the center, over the visual axis. It is designed so that the eye can see fairly normally. There is a little less amniotic membrane on the surface of the eye, but it is much more tolerable — especially for people who are trying to work. I'm still doing one at a time with the new design, but I'm planning to see if it's possible to send people to work with two of the Prokera Slim Clears in place.

LipiFlow

Dr. Donaldson: In our clinic, we've had great results with LipiFlow (TearScience), which uses thermal pulsation with inner-lid technology. It is the only FDA-cleared device for MGD that has been shown to restore gland function. LipiFlow has been extensively reviewed in 5 multi-centered studies and 31 peer reviewed reports.

Dr. McDonald: I started to use BlephEx (RySurg) right before performing a LipiFlow treatment; that really helps express all of the altered meibum. This "one-two punch" works well because once we've used the BlephEx to remove that thin fibrovascular membrane — an almost invisible layer that's closing off the meibomian gland orifices — we're able to get even better results from LipiFlow.

Dr. Epitropoulos: Conventional options, such as warm compresses and artificial tears, are very good supplemental treatments, but they aren't therapeutic because they don't address meibomian gland obstruction. Once I've addressed the meibomian glands using LipiFlow, not only does the patient get relief from dry eye, but supplemental treatments have a better chance of working as well.

LipiFlow is becoming one of the treatments of choice when there is evidence of meibomian gland dysfunction. Data show that if we can get to these glands early, they will respond better than if we wait until the glands are atrophied and nonfunctional.

In FDA clinical trials, an overall improvement in dry eye symptoms was reported in 76% of patients in the LipiFlow group.¹ Subsequent clinical trials have shown that a single LipiFlow treatment is capable of delivering a sustained improvement in gland function and reduction in dry eye symptoms for up to 12 months in controlled studies and up to 36 months in uncontrolled studies.²

I also tell patients that about 20% don't notice any improvement in their symptoms, but if we can address the meibomian gland obstruction, I think we're still helping to prevent progressive damage.

Dr. McDonald: To all my patients, I say, "It's a slow miracle. It does work. You will get a little bit better every day, but it takes 6 months to reach maximum benefit; you will hold the benefit for an average of a year, with a range of 6 to 36 months (though almost everyone gets at least a year of benefit)." I have them come back 3 months after LipiFlow, and inevitably we see a better tear osmolarity score and a negative MMP-9 test. That concrete evidence shows patients that it was worth them spending out of pocket for a procedure not covered by their insurance. It really enhances their perceived value of the treatment. And by the time they come back 6 months after the treatment, they feel the improvement.

Intense Pulsed Light Therapy

Dr. Donaldson: Intense Pulsed Light (IPL) therapy is a newer treatment for dry eye. We've adapted it from dermatologists, who noticed that dry eye sometimes improved after rosacea patients were treated with IPL. What has been your experience with IPL?

Dr. Matossian: I have been using IPL for many years. It works very well. We put a bib on our patients that we call “the lobster bib,” then we apply lidocaine gel across the cheeks. Next, I spread a copious layer of ultrasound gel from ear to ear and cover the patient’s eyes with protective goggles. Using a handheld device, I proceed with the IPL from tragus to tragus to close off the abnormal telangiectatic blood vessels that are leaking pro-inflammatory mediators and strangling the meibomian glands. By killing those off, we improve the health of the meibomian glands.

Immediately after treatment, I manually express the meibum, moving from the lateral area of the lower lid to the inner canthus. With a cotton-tipped applicator and my thumb, I work all the meibomian glands; I can see what’s coming out. I comment on the color, the consistency, and the amount. Over time, qualitative improvement of the meibum is clearly visible.

Dr. Donaldson: How many treatments do you typically need to achieve a good response?

Dr. Matossian: I start with a series of four single treatments every 4 to 5 weeks. Thereafter, it’s one treatment about every 6 months for maintenance. IPL is an out-of-pocket procedure.

Dr. Donaldson: It sounds like it works very well. It’s rewarding to treat people who have been suffering without relief, sometimes for years.

Other Treatment Approaches

Dr. Donaldson: Traditional treatments, such as warm compresses and artificial tears, can still be used to improve signs and symptoms.

In my practice, we also use MiBoFlo ThermoFlo (MiBo Medical Group) as an adjunct to manual expression for temporary relief of MGD symptoms.

Better Therapies = Happier Patients

Dr. Donaldson: It’s exciting to think of all the therapies we’re employing for dry eye patients. This wasn’t happening a decade ago. All of these therapies are making a profound difference. One of my patients made a video about how our Ocular Surface Center made life so much more comfortable for him. After 15 years of suffering with dry eye, finally, in our practice, the ocular surface staff listened and understood. These therapies are helping people with a frustrating chronic disease they previously thought they’d have to struggle with for life. ■

References

1. Lane SS, DuBiner HB, Epstein RJ, et al. A new system, the LipiFlow, for the treatment of meibomian gland dysfunction. *Cornea* 2012;31:396-404.
2. Blackie CA, Carlson AN, Korb DR. Treatment for meibomian gland dysfunction and dry eye symptoms with a single-dose vectored thermal pulsation: a review. *Curr Opin Ophthalmol* 2015;26:306-313.