

The *Demodex* Blepharitis Patient Journey With XDEMZY® (lotilaner ophthalmic solution) 0.25%

A closer look at real-world insights from two cases.



BY MARC R. BLOOMENSTEIN, OD, FFAO

As an optometrist, my modus operandi is to help patients be proactive

with their eye care. Various eye conditions such as *Demodex* blepharitis (DB) can or may detract from this. There are many obstacles to managing the ocular surface and, unfortunately, the prevalence of DB is much greater than I ever realized. Without a treatment for the root cause of DB, I was not actively looking for nonsymptomatic signs of the disease. When I actively started looking at the base of the lashes, I realized that about 55% to 60% of my patients, regardless of age or gender, had DB. This sea change has transformed my clinical outlook. Now, I simply ask every patient to look down, giving me a clear view of the base of their lash line. I am hunting for collarettes, the pathognomonic, telltale sign of DB.

Bobby is a perfect example of a patient who had refractive surgery whom I had

known for years. In the past, I had not thought to look at his lash line.

Bobby is also a personal friend. As a local fire captain who meets regularly with the press, he often had concerns about his appearance with crustiness and would reach out to me for a quick treatment recommendation. His last call to me he stated, “I can’t go out. I’ve got these bumps on my eyelids, and it’s embarrassing and unsightly.” I managed his symptoms the way I normally would—I put him on warm compresses and prescribed a combination of antibiotics and steroids, both topical and systemic. Over the past several years, however, Bobby’s symptoms worsened until I finally diagnosed him with DB. At that time, I didn’t have anything FDA-approved to offer him, I could only offer him a diagnosis and palliative treatments. I knew Bobby would be my patient zero, and as soon as lotilaner ophthalmic solution 0.25% (XDEMZY®, Tarsus Pharmaceuticals) was FDA-approved, we initiated treatment for DB.



Figure 1. Bobby’s DB pre-treatment (above) and 6 weeks post-treatment (below).

After 6 weeks of treatment, I was thrilled with Bobby’s improvement with XDEMZY, and my treatment approach for DB patients changed immediately (Figure 1). The twice a day, 12 hours apart, 6-week course¹ is manageable for patients. It is now my first-line treatment for appropriate DB patients who present with collarettes. I continue to manage the sequelae of other symptoms with palliative therapies.

For years, we glossed over looking for collarettes at the base of the eyelash. We knew they’re associated with *Demodex*, but we had no FDA-approved treatment to eradicate the mites and no way to target the source of the disease. In pivotal trials at Day 43, 44% (N = 209) and 55% (N = 193) of patients receiving XDEMZY in SATURN-1 and SATURN-2, respectively,

CASE NO. 1: BOBBY

I am a 55-year-old firefighter captain in charge of a technical rescue team. I had LASIK more than 20 years ago, which is how I met Dr. Bloomenstein.

Since that time, I experienced inflammation of my eyelids and eye redness a couple times a year. Initially, warm compresses were enough to provide lasting relief. In the past 5 years, however, the flareups became more common. As a fire captain, most of my day is spent outside in a very hot, dusty, and windy environment, all of which are not conducive to keeping my eyes moist and clean.

In Spring 2023, I had an especially horrendous flareup. Dr. Bloomenstein examined me and explained to me that I had *Demodex* blepharitis (DB) by showing me images of the collarettes on my eyelashes. His explanation was straightforward, and the pictures helped me see exactly what he was referring to. The conversation was a good opportunity to put an answer to a question that had been plaguing us for a while.

When XDEMZY became available, Dr. Bloomenstein started me on treatment immediately. Using the drops was simple, and I had no side effects. In both the SATURN-1 and SATURN-2 clinical trials, ~90% of patients reported the drop as neutral to very comfortable.¹ The most common adverse event—in only 10% of patients—was stinging and burning at the instillation site.² I put the drops in as soon as I woke in the morning and then again at the end of the dinner hour, about 12 hours apart.

During the treatment course, I was doing extensive firefighter training in a hot, sweaty environment. Typically, I would experience irritation in these conditions, but after using XDEMZY I noticed less irritation. I saw Dr. Bloomenstein at about 3 to 4 weeks after treatment was initiated. At the end of my 6-week course, the collarettes were no longer against the eyelids.

1. Yeu E, Mun J, Vollmer P, et al. Treatment of *Demodex* blepharitis with lotilaner ophthalmic solution. 0.25%: combined analysis of two pivotal randomized, vehicle-controlled, multicenter trials. Saturn-1 and Saturn-2 combined data. Paper presented at: ARVO 2023; April 23-27, 2023; New Orleans, LA.

2. XDEMZY [prescribing information]. Tarsus Pharmaceuticals, Inc; 2023.

achieved collarette reduction to ≤ 2 collarettes vs. 7% (N = 204) and 12% (N = 200) taking vehicle ($P < 0.01$ for both studies).² Patients with DB were randomized to either XDEMVY (lotilaner ophthalmic solution) 0.25% or vehicle at a 1:1 ratio, dosed twice daily in each eye for 6 weeks.² Now that XDEMVY is available, we can help patients like Bobby find relief and get to the root cause of DB. It's been gratifying to see how patients can improve after the 6-week course of treatment.

1. XDEMVY (prescribing information). Tarsus Pharmaceuticals, Inc.; 2023.

2. Yeu E, Mun J, Vollmer P, et al. Treatment of Demodex blepharitis with lotilaner ophthalmic solution. 0.25%: combined analysis of two pivotal randomized, vehicle-controlled, multicenter trials. Saturn-1 and Saturn-2 combined data. Paper presented at: ARVO 2023; April 23-27, 2023; New Orleans, LA.

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BY VIN T. DANG, OD, FAAO

About 40% of my patients have *Demodex* blepharitis (DB). A few years ago, I might not have thought

to examine the eyelids and eyelashes for *Demodex* in every patient, but now I do. This is especially important when patients mention their eyes feel scratchy and irritated. They may be experiencing signs of DB, but in order to verify, we need to take the time to check.

I use a direct approach to counseling patients with DB. I tell them that they have a parasite or mite infestation on their lashes. I prefer parasite or mite to the term dandruff because I want patients to understand the condition must be taken seriously. I liken the importance of lid hygiene to oral hygiene.

CASE NO. 2: JERRY

I am a 71-year-old retired educator. I started experiencing a gritty, sandy feeling in my eyes about a decade or more ago. It was affecting my everyday activities. When Dr. Dang told me I had *Demodex* blepharitis (DB), I had no idea what it was. I was worried that having DB would affect my sight. However, Dr. Dang has a calming presence, and he helped me navigate the diagnosis. At that time, he recommended lid hygiene scrubs and, when appropriate, antibiotic ointments. These would provide some relief, but it was not lasting. Additionally, I was not disciplined enough to keep my eyelids clean regularly unless I noticed buildup.

When XDEMVY was approved, we decided to give it a try and see what happened. I figured it couldn't be any worse than what I had been accustomed to. I felt I noticed positive changes—I was on the road to being convinced that XDEMVY was a good treatment for me (Figure 1).

We've only recently (July 2023) been able to treat DB adequately with XDEMVY (Tarsus Pharmaceuticals), the first and only FDA-approved treatment for DB. Previously, my treatment management protocol was a stepwise approach starting with generic eyelid wipes and progressing to antibiotic ointment, tea tree oil-based wipes, and finally an in-office deep cleaning procedure.

Now, XDEMVY is my first-line treatment. In the beginning, I brought patients back at the halfway mark to track their progress. Now that I have seen the efficacy of the treatment, I bring them back at 6 weeks. I haven't

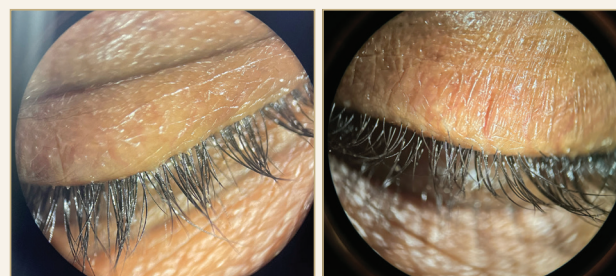


Figure 1. Jerry's DB pre-treatment (left) and 6 weeks post-treatment (right).

My compliance with the twice-daily dosing was manageable; I put the drops in right after I washed my face in the morning. Twelve hours later, I would repeat the routine. I was told the drops could sting upon instillation, but I had zero side effects. In the SATURN-1 and SATURN-2 clinical trials, the most common adverse event—in only 10% of patients—was stinging and burning at the instillation site.¹ Less than 2% of patients experienced chalazion/hordeolum and punctate keratitis.¹ What I would share with other patients with *Demodex* blepharitis and my being treated with XDEMVY

is that I was a little bit apprehensive when it first came, when I was first introduced, because I think I had used three different types of treatments to try to treat my blepharitis. Everything went exactly how I was told it was going to go. Being able to use it, as I've already stated, it's easy. Get up in the morning, 12 hours later, drop it, and you're done with it. You don't have to do a lot with it. So I would tell them to give it a try because it worked for me. I'm extremely pleased with it.

1. XDEMVY (prescribing information). Tarsus Pharmaceuticals, Inc.; 2023.

had a single patient discontinue the medication.

Overall, the availability of XDEMVY is beneficial to our patients because we can offer an FDA-approved treatment that gets to the root cause of their condition. As much as I like seeing Jerry in the office, I'm glad we were able to treat his DB. ■

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INDICATIONS AND USAGE

XDEMVY is indicated for the treatment of *Demodex* blepharitis.

Important Safety Information:

WARNINGS AND PRECAUTIONS

Risk of Contamination: Do not allow the tip of the dispensing container to contact the eye, surrounding structures, fingers, or any other surface in order to minimize contamination of the solution. Serious damage to the eye and subsequent loss of vision may result from using contaminated solutions.

Use with Contact Lenses: XDEMVY contains potassium sorbate, which may discolor soft contact lenses. Contact lenses should be removed prior to instillation of XDEMVY and may be reinserted 15 minutes following its administration.

ADVERSE REACTIONS: The most common adverse reaction with XDEMVY was instillation site stinging and burning which was reported in 10% of patients. Other ocular adverse reactions reported in less than 2% of patients were chalazion/hordeolum and punctate keratitis.

Please see Brief Summary of Prescribing Information on page 3.

**XDEMVY™ (lotilaner ophthalmic solution) 0.25%,
for topical ophthalmic use**

BRIEF SUMMARY OF PRESCRIBING INFORMATION
**Please see the XDEMVY™ package insert for full
Prescribing Information.**

INDICATIONS AND USAGE

XDEMVY is indicated for the treatment of *Demodex* blepharitis.

CONTRAINDICATIONS

None.

WARNINGS AND PRECAUTIONS

Risk of Contamination Do not allow the tip of the dispensing container to contact the eye, surrounding structures, fingers, or any other surface in order to minimize contamination of the solution. Serious damage to the eye and subsequent loss of vision may result from using contaminated solutions.

Use with Contact Lenses Contact lenses should be removed prior to instillation of XDEMVY and may be reinserted 15 minutes following its administration.

ADVERSE REACTIONS

Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

XDEMVY was evaluated in 833 patients with *Demodex* blepharitis in two randomized, double-masked, vehicle-controlled studies (Saturn-1 and Saturn-2) with 42 days of treatment. The most common ocular adverse reaction observed in controlled clinical studies with XDEMVY was instillation site stinging and burning which was reported in 10% of patients. Other ocular adverse reactions reported in less than 2% of patients were chalazion/hordeolum and punctate keratitis.

USE IN SPECIFIC POPULATIONS

Pregnancy: Risk Summary There are no available data on XDEMVY use in pregnant women to inform any drug associated risk; however, systemic exposure to lotilaner from ocular administration is low. In animal reproduction studies, lotilaner did not produce malformations at clinically relevant doses.

Data Animal Data In an oral embryofetal developmental study in pregnant rats dosed during organogenesis from gestation days 6–19, increased post-implantation loss, reduced fetal pup weight, and incomplete skeletal ossification were observed at 50 mg/kg/day (approximately 1390 times the recommended human ophthalmic dose (RHOD) on a body surface area basis) in the presence of maternal toxicity (i.e., decreased body weight and food consumption). A rare malformation of situs inversus of the thoracic and abdominal viscera occurred in 1 fetus from a pregnant rat receiving 50 mg/kg/day; whether this finding was treatment-related could not be excluded. No maternal or embryofetal toxicity was observed at 18 mg/kg/day (approximately 501 times the RHOD on a body surface area basis). In an oral embryofetal development study in pregnant rabbits dosed during organogenesis from gestation days 7–19, no embryofetal toxicity or teratogenic findings were observed at 20 mg/kg/day (approximately 580-times the RHOD on an AUC basis), even in the presence of maternal toxicity (i.e., decreased food consumption and body weight).

In an oral two-generation reproductive toxicity study, F0 male and female rats were administered lotilaner at doses up to 40 mg/kg/day for 10 weeks before pairing and during the 2-week pairing period (3 weeks for males). Dosing for F0 females continued through lactation day 22. F1 male and female rats were administered lotilaner at 1 and 5 mg/kg/day post-weaning from day 23 for 10 weeks before pairing and during the 2-week pairing period (3 weeks for males). Dosing for F1 parenteral females continued through lactation day 22. There were no clear adverse effects on the F1 generation, and a slightly lower mean body weight during lactation was noted for F2 pups at 5 mg/kg/day. The no observed adverse effect level (NOAEL) was determined to be 5 mg/kg/day (approximately 139 times the RHOD on a body surface area basis).

Lactation: Risk Summary There are no data on the presence of XDEMVY in human milk, the effects on the breastfed infant, or the effects on milk production. However, systemic exposure to lotilaner following 6 weeks of topical ocular administration is low and is >99% plasma protein bound, thus it is not known whether measurable levels of lotilaner would be present in maternal milk following topical ocular administration. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for XDEMVY and any potential adverse effects on the breast-fed child from XDEMVY.

Pediatric Use: Safety and effectiveness in pediatric patients below the age of 18 years have not been established.

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

NONCLINICAL TOXICOLOGY

Carcinogenesis, Mutagenesis, Impairment of Fertility

Carcinogenesis Long-term studies in animals have not been performed to evaluate the carcinogenic potential of lotilaner.

Mutagenesis Lotilaner was not genotoxic in the following assays: Ames assay for bacterial gene mutation, *in vitro* chromosomal aberration assay in cultured human peripheral blood lymphocytes, and *in vivo* rat micronucleus test.

Impairment of fertility In a two-generation study of reproductive performance in rats, F0 male and female rats were administered lotilaner at oral doses of 40 mg/kg/day for 80 days reduced to 20 mg/kg/day for 47–50 supplementary days. Reduced pregnancy rates and decreased implantation rates were observed in F0 females at doses 20 mg/kg/day (approximately 556 times the RHOD on a body surface area basis), which were also associated with maternal toxicity (i.e., decreased body weight and food consumption). No effects on fertility were observed in F0 females at the dose of 5 mg/kg/day (approximately 139 times the MRHOD on a body surface area basis). No effects on fertility were observed in F0 males at the oral dose of 20 mg/kg/day (approximately 556 times the RHOD on a body surface area basis), and no effects on fertility were observed in F1 males and females at the oral dose of 5 mg/kg/day (approximately 139 times the RHOD on a body surface area basis).

PATIENT COUNSELING INFORMATION

Handling the Container Instruct patients to avoid allowing the tip of the dispensing container to contact the eye, surrounding structures, fingers, or any other surface in order to minimize contamination of the solution. Serious damage to the eye and subsequent loss of vision may result from using contaminated solutions.

When to Seek Physician Advice Advise patients that if they develop an intercurrent ocular condition (e.g., trauma or infection), have ocular surgery, or develop any ocular reactions, particularly conjunctivitis and eyelid reactions, they should immediately seek their physician's advice concerning the continued use of XDEMVY.

Use with Contact Lenses Advise patients that XDEMVY contains potassium sorbate, which may discolor soft contact lenses. Contact lenses should be removed prior to instillation of XDEMVY and may be reinserted 15 minutes following its administration.

Use with Other Ophthalmic Drugs Advise patients that if more than one topical ophthalmic drug is being used, the drugs should be administered at least 5 minutes between applications.

Missed Dose Advise patients that if one dose is missed, treatment should continue with the next dose.

RX only

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