

Confocal microscopy assists Demodex management



Laser in vivo confocal microscopy monitors treatment of Demodex blepharitis by observing mites in all phases of the lifecycle and helps guide clinical decision making, according to researchers at the Association for Research in Vision and Ophthalmology meeting.

The retrospective chart review followed 11 patients from a population who were previously treated for Demodex folliculorum that received an in vivo confocal microscopy exam (IVCM) and then returned for follow-up IVCM testing.

The IVCM exams consisted of serial imaging of the eyelid margin and around the lash follicle.

Researchers selected quantified images from IVCM exams performed before and after treatment with topical 4-Terpineol (T40) wipes or a combination of T40 wipes and oral ivermectin.

There was an average of 177 days between imaging sessions.

At baseline, a mean mite density per follicle of 4.42 was found, with an egg per follicle density of 1.93.

After treatment, mite density was 2.42 mites per follicle, and egg density was 3.12 per follicle.

Compared to baseline, researchers noted a significant decrease in the density of *D. folliculorum* mites after treatment.

Researchers wrote that, surprisingly, there was a significant increase in the eggs of *D. folliculorum* after treatment.

Typically, as lash collarettes and detectable mites become less frequent, treatment is tapered, researchers wrote.

“Our findings provide alternative and potentially more effective treatment schedules,” researcher **Nicolas Pondelis** told *Primary Care Optometry News*. “The fact that eggs survive treatment may mean that topical wipes do not effectively treat the mites while still inside the egg. The lifecycle of the mite is 12 to 14 days, and, as

such, a staggered treatment with topical wipes (1 week on 1 week off, 1 week on, etc...) may be more effective than 2 weeks of treatment alone.

“Essentially, the use of tea tree oil wipes may effectively treat adult and larval mites only, and other therapeutic options (whether timing of treatment or new drug targets) should be investigated to make sure the entire population of mites is being effectively treated,” he continued.

IVCM imaging provides real-time feedback on patient response to treatment, Pondelis added. “Results from these studies have shown that topical wipes may not be effective in treating all stages of the mite life cycle,” he concluded. – *by Abigail Sutton*

Reference:

Pondelis N, et al. Detection and assessment of treatment efficacy of *Demodex* blepharitis by in vivo confocal microscopy. Presented at: Association for Research in Vision and Ophthalmology; Honolulu; April 29-May 3, 2018.

Disclosures: Pondelis reported no financial disclosures. Please see the full study for all remaining authors’ financial disclosures.