USING INFLAMMADRY TO IDENTIFY INFLAMMATORY DRY EYE AND IMPROVE CLINICAL OUTCOMES

Using this point-of-care test to "rule in" or "rule out" ocular surface inflammation may help guide appropriate therapies.

Recently, we interviewed top eye care professionals about their clinical use of the RPS InflammaDry test to identify elevated levels of matrix metalloproteinase 9 (MMP-9) on the ocular surface of their patients. Videos of the full interviews are available at eyetube.net/series/inflammadry/ilope/.

PARTICIPANTS



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DRY EYE PROTOCOL

How do most eye care professionals manage dry eye patients, given the lack of correlation between signs and symptoms?

Dr. Brujic: The lack of correlation between signs and symptoms of dry eye disease (DED) makes it a slight clinical challenge. With new point-of-care diagnostics like InflammaDry, I am able to offer a more targeted approach to determining the best treatment options for these patients.

Dr. McDonald: Only 50% of patients with DED have clinically significant inflammation, and many are asymptomatic.¹ Having InflammaDry, a definitive test for identifying ocular surface inflammation, helps guide my therapeutic decision making and convince symptomless patients to stay on a regimen and attend follow-up appointments to monitor their DED status.

How has InflammaDry changed the way you manage dry eye patients?

Dr. McDonald: InflammaDry has definitely changed the way my staff and I manage patients with DED. InflammaDry detects elevated levels of the inflammatory marker MMP-9 in the tear film. Identifying inflammation of the ocular surface allows us to come up with a formula to deliver the most appropriate therapies.

Dr. Brujic: InflammaDry gives us an understanding of the level of inflammation on the ocular surface. MMP-9 levels typically increase as the severity of DED increases, and InflammaDry gives us the ability to determine whether MMP-9 levels in these patients are in the normal range versus the abnormal range. Identifying ocular surface inflammation gives me the ability to target my therapies for the best first-line results in these patients.

Can you describe how InflammaDry has improved your dry eye protocol?

Dr. McDonald: Incorporating InflammaDry into the protocol has absolutely reduced chair time in my practice. I now walk in to see patients armed with all the information that I need, saving their time as well as my own.

Dr. Brujic: I first identify DED suspects through the use of a questionnaire to uncover signs that they may not think are clinically relevant. Then, I use InflammaDry to determine the level of inflammation that is on the ocular surface. Over time, I can determine whether or not treatment is moving these patients from a high level of inflammation to a normal level, which is the ultimate goal.

SURGICAL BENEFITS

How can ocular surface inflammation affect surgical outcomes?

Dr. Donnenfeld: Over the past decade, clinicians have come to understand that strengthening the tear film is the key to improving surgical outcomes, and better tear film quality has led to a dramatic improvement in surgical results during this time.² An unstable tear film will not produce accurate preoperative measurements. In turn, poor measurements will compromise IOL selection and corneal corrections, yielding poor longterm visual results. Additionally, an unhealthy ocular surface may cause the patient discomfort during and after surgery, and he or she



InflammaDry accurately identifies elevated levels of MMP-9 in tear fluid samples taken from the palpebral conjunctiva.

Dr. Yeu: Preoperatively, it is so important that we optimize all parts of the ocular surface, because that is what will yield better postoperative results. If a surgical patient tests positive with the InflammaDry test, we need to postpone any preparations for surgery and decrease the inflammatory markers in the tear film in order to help promote a positive, consistent visual outcome postoperatively.

How easy is it to include InflammaDry in the perioperative management of surgical patients?

Dr. Donnenfeld: My team and I have seamlessly implemented InflammaDry into our preoperative routine. Our technicians are instructed to administer the test based on the results of a patient questionnaire. I review the

> InflammaDry test results before I see patients; this way, I have a good idea of their problem before they see me. This process lets me spend less time diagnosing the disease and more time talking to patients about their treatment.

Dr. Yeu: My clinical practice is largely referral based; thus my team and I perform the entire cataract surgery in a single visit, unless the InflammaDry test identifies ocular surface inflammation; that necessitates a future visit.

will not consider the procedure successful.

Dr. Yeu: For any procedure that incises the cornea's innervation, it is vital to maximize the health of the ocular surface to help promote a positive, consistent visual outcome. It is critical to identify and manage ocular inflammation to optimize surgical results. Diagnostic tests like InflammaDry help identify how much preoperative dry eye therapy a patient may need.

How has InflammaDry helped you diagnose inflammation preoperatively?

Dr. Donnenfeld: InflammaDry has been a welcome addition to my surgical evaluation regimen. This test identifies elevated MMP-9, an enzyme that is elevated in the presence of ocular surface inflammation.³ InflammaDry provides an objective measurement of the state of the ocular surface before I consider surgical intervention, thereby saving my patients and me a significant amount of time and potential frustration because of suboptimal outcomes.

What would you tell other ophthalmologists who are looking to include InflammaDry in their surgical protocol?

Dr. Donnenfeld: InflammaDry is a test that can give us better diagnostic capabilities, and patients appreciate it when we use cutting-edge technology to improve their care. Additionally, InflammaDry is CLIA-waived, has its own Medicare code, and is reimbursed by most private insurance carriers.

Dr. Yeu: InflammaDry is a quick and powerful test for identifying ocular surface inflammation. This point-of-care test is very easy to incorporate into the perioperative evaluation of both LASIK and cataract surgical patients; it equips you with valuable information that can have a impact on patient outcomes.

 Sambursky R, Davitt WF 3rd, Friedberg M, Tauber S. Prospective, multicenter, clinical evaluation of point-of-care matrix metalloproteinase-9 test for confirming dry eye disease. *Cornea.* 2014;33(8):812-818.
Sambursky R, O'Brien TP. MMP-9 and the perioperative management of LASIK surgery. *Curr Opin Ophthalmol.* 2011; 2014;00:01:021

John and K. G. Schuller J. Mining Schule periodecture management of Domain Surgery can opin opiniouning. 2017, 22(4):294–303.
Chotikavanich S, de Paiva CS, L DQ, et al. Production and activity of matrix metalloproteinase-9 on the ocular surface increase in

Choukavalinich S, de Parva CS, E DQ, et al. Production and activity of matrix metalioproteinase-9 on the ocular surface increase in dysfunctional tear syndrome. *Invest Ophthalmol Vis Sci.* 2009; 50(7):3203–3209.