Point-of-care tests for ocular surface disease gaining acceptance as diagnostic tools

The Doctor’s Allergy Formula (Doctor’s Allergy Formula) is a POCT for allergy testing.

“For patients with symptoms of allergic conjunctivitis, this test can be performed to identify which allergens patients are actually allergic to,” Trattler said. The test works by dipping a small applicator into a panel of 60 allergens, from dust mites to pollen, and then pressing the applicator onto the skin without puncturing the skin.

“This is different from what is done in an allergist’s office because you are not injecting intradermally the allergens,” he said. The actual test takes about 2 minutes, with 15 minutes of waiting time while test results develop.

“This is a very accurate test,” Trattler said. “If positive, we are able to come up with avoidance and medication strategies to treat a patient’s allergic conjunctivitis.”

Corneal dystrophy test

The Avellino DNA Dual Test for LASIK Safety (Avellino Lab USA) is a saliva swab test that takes seconds to perform. The sample is sent to Avellino’s lab, which looks for the genetic trait of whether the patient is at risk for Avellino corneal dystrophy or granular corneal dystrophy type 1, rare autosomal dominant diseases that may be exacerbated after some refractive surgeries.

LASIK outcomes would be impaired if performed on someone who is genetically positive for this condition, according to Jackson.

“Hence, you do not want to do an elective procedure on someone who is at risk for Avellino granular corneal dystrophy,” he said. “LASIK sometimes can accelerate the presence of the condition sooner than later. The Avellino test might eliminate some of the patient’s fear factor in the decision process.”

Time and training

In a broader sense, POCT takes extra time and training, according to Rapuano, and for many POCTs, there are upfront costs for the equipment and/or tests as well as additional administrative costs to track the supplies and billing.
The reimbursement landscape for POCT has changed over the years.

“Five or 10 years ago, insurance companies would not pay for a visit and a corneal topography on the same day,” Rapuano said. “Therefore, many doctors told their post-corneal transplant patients they would need to return another day for the topography and still another day to have their sutures removed. Today, though, insurance usually allows doctors to test, diagnose and treat the diagnosis the same day.”

Rapuano said that RPS is developing POCT that would eventually allow practitioners to assess multiple indications with a single test, and TearLab said its R&D teams are working on a panel of tests to be performed on its lab on a chip technology.

“Potentially, you could diagnose different bacteria or fungus with one test. That would be great,” Rapuano said.

“POCT will continue to grow,” Trattler said. “Companies are developing newer technologies to help us identify both the presence of different ocular conditions and track the improvement of various ocular indications. And although the tests are already very rapid, they will become even quicker.” – by Bob Kronemyer

References:

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Disclosures: Jackson has relevant financial disclosures with Avellino, Allergan, Bausch + Lomb, Tear Lab, TearScience, Nicox and Doctor's Allergy Formula. Rapuano is a paid consultant and/or lecturer for Allergan, Bausch + Lomb, Bio-Tissue, TearScience, TearLab and Nicox. He also has a small ownership stake in Rapid Pathogen Screening. Trattler is a paid consultant for Doctor's Allergy Formula, Allergan, Nicox and Bausch + Lomb. White is a consultant for Bausch + Lomb, Allergan, Nicox and Eyemaginations. He is also on the speaker board for Bausch + Lomb, Allergan and TearLab.