

Signs and Symptoms Do Not Match in Dry Eye Disease

Nichols KK, Nichols JJ, Mitchell G: **The lack of association between signs and symptoms in patients with dry eye disease.** *Cornea* 2004, 23:762–770.

Rating: •Of importance.

Introduction: The diagnosis and classification of dry eye is controversial. Patient reports of dry eye symptoms tend to be more reliable and accurate than many dry eye clinical test results, and, in addition, results of dry eye clinical tests tend to agree poorly with patient-reported symptoms. This leads to a dilemma in both clinical practice and research, making clinical decisions difficult regarding tests to be used and the interpretation of those tests.

Aims: The purpose of this study was to examine the relationship between a number of clinical tests and dry eye symptoms in patients with dry eye disease.

Methods: Seventy-five clinic patients with dry eye disease were included in the study. The dry eye diagnosis was the specific entry criterion. An interview was conducted to assess dryness, grittiness, soreness, redness, and ocular fatigue. It was followed by a clinical dry eye examination conducted in the following sequence: meibomian assessment, tear meniscus height, tear break-up time tests, fluorescein staining, phenol red thread tests, Schirmer's test, and rose Bengal staining.

Partial Spearman correlation coefficients, the Wilcoxon rank sum test, chi-squared test, and multivariate logistic regression were used to evaluate the relationship between dry eye tests and symptoms.

Results: Symptoms were generally not associated with clinical signs in patients with dry eye disease. There were no significant correlations between signs and symptoms

after adjustment for age and artificial tear use. No clinical test significantly predicted frequently reported symptoms after adjustment for age and artificial tear use.

Editor's comments

Two population-based studies [1,2] have previously addressed the issue of the relationship between dry eye symptoms and the results of clinical tests. The first, a sample of 2240 elderly patients, showed no association between Schirmer's test and symptom frequency nor any statistical relation between rose Bengal staining and symptom frequency. Another population-based study by Hay *et al.* [2] of 341 individuals found no association between Schirmer's test and dry eye symptoms measured in terms of frequency. The study by Nichols *et al.* extended the list of clinical tests performed. The conclusion is that in this clinic-based sample of dry eye patients, symptoms were not associated with diagnostic tests for dry eye. Unfortunately for the clinician and researcher, dry eye clinical tests generally are not associated with patient-reported symptoms. In addition, reduction in patients' symptoms with treatment is not consistent with improvement in clinical tests. Therefore, new clinical methods, perhaps specific to the various dry eye disease mechanisms, are needed to ensure appropriate disease classification in epidemiologic research clinical trials and patient care.

References

1. Schein OD, Tielsch JM, Munoz B, et al.: **Relation between signs and symptoms of dry eye in the elderly: a population-based perspective.** *Ophthalmology* 1997, 104:1395–1401.
2. Hay EM, Thomas E, Pal B, et al.: **Weak association between subjective symptoms and objective testing for dry eyes and dry mouth: results from a population-based study.** *Ann Rheum Dis* 1998, 57:20–24.