

Understanding Symptoms and Quality of Life in Patients With Dry Eye Syndrome



STEFANO BARABINO, MD, PhD,¹ MARC LABETOULLE, MD,² MAURIZIO ROLANDO, MD,¹ AND ELISABETH M. MESSMER, MD³

ABSTRACT Dry eye disease (DED) is one of the most common reasons for patients (particularly those over the age of 50) to seek ophthalmic care. There is a wide array of causes for DED that can induce an alteration of the ocular surface system and determine the chronicity of the disease, including low blink rates (eg, computer use), systemic and topical drugs, autoimmune diseases, contact lens wear, and cataract and refractive surgery. Patients with dry eye experience numerous symptoms that can reduce their productivity and overall quality of life. This article presents the results of a roundtable focused on patients' symptoms. The goal was to better understand the symptoms reported by patients, the possible effects on visual function, the consequences on the quality of life, and the methodologies that can be used to measure and monitor symptoms in clinical practice and in clinical studies. The discrepancies between clinical signs and symptoms reported in some cases are considered in the context of the ocular surface system.

KEY WORDS dry eye disease, inflammation, ocular surface, quality of life, questionnaires, symptoms, therapy, visual function

I. INTRODUCTION

Dry eye disease (DED) is one of the most common ocular complaints and reasons for patients to seek eye care.¹ Schaumberg and colleagues conducted two large population studies to measure the prevalence of dry eye in men and women.^{1,2} They found that the prevalence of DED in women increases with age from 5.7% among those <50 years of age to 9.8% in those ≥75 years of age.² Similarly, the prevalence of DED in men increased from 3.9% in those 50-54 years of age to 7.7% in men ≥80 years of age.¹

There are numerous causes of dry eye, which are generally subdivided into the categories of *aqueous-deficiency* and *evaporative*.³ Several causative factors can contribute to DED, such as topical and systemic drugs, lacrimal duct obstruction, and lacrimal deficiency. Cataract and refractive surgery can also induce dry eye syndrome or, at least, dry eye-like symptoms.

Symptoms comprise the main problem that drives patients to seek eye care. The importance of symptoms has been highlighted by its inclusion in the definition of dry eye given in 1995 by the National Eye Institute and industry workshop,⁴ by the Japanese study group in 2006,⁵ and by the International Dry Eye Workshop (DEWS)³ panel, which defined DED as “a multifactorial disease of the tears and ocular surface that results in symptoms of discomfort, visual disturbance, and tear instability with potential damage to the ocular surface. It is accompanied by increased osmolarity of the tear film and inflammation of the ocular surface.”

Despite the importance of symptoms in dry eye, there are currently no gold standard tests to classify them. Moreover, it is not uncommon for patients to have moderate-to-severe symptoms in the absence of abnormal ocular surface signs, or for patients with severe clinical signs to have relatively mild symptoms, due to the loss of sensitive receptors into

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From ¹Clinica Oculistica, DiNOGMI, Università di Genova, Genoa, Italy, ²Service d'Ophthalmologie, CHU Bicêtre, Université Paris Sud, Kremlin-Bicêtre, France, and ³Augenlinik der Ludwig-Maximilians-Universität, Munich, Germany.

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Single-copy reprint requests to Stefano Barabino, MD, PhD (address below).

Corresponding author: Stefano Barabino, MD, PhD, Clinica Oculistica, DiNOGMI, Università di Genova, viale Benedetto XV, 5, 16135 Genoa, Italy. Tel.: +39-339-5480804; fax: +39-010-3538494. E-mail address: sbarabi@tin.it

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the cornea. These discrepancies underscore the need to better understand symptoms analysis and ocular surface signs.

In April 2015, a group comprised of four dry eye specialists met in Milan, Italy, for a 2-day roundtable meeting whose purpose was to consider the scale of the problem of symptoms of dry eye, including changes in visual function, the tests currently available to measure these changes, and the relationship between symptoms reported by patients and ocular surface changes. The meeting was sponsored and funded by Farmigea, Italy.

II. SYMPTOMS OF DRY EYE DISEASE

When a patient presents with any of the complaints reported in Table 1, DED should be suspected.^{3,6,7} It is important to discover the frequency, duration, and triggering factors for the dry eye symptoms. A full medical history should be obtained.⁸ The behavior of ocular surface symptoms during the day is different in DED, allergy, and blepharitis, and this can be of help in diagnosis (Figure 1).⁹ The history may uncover contributing factors, such as medications, smoking, menopause, or some underlying systemic disease (Table 2). Although open dialogue with the patient is important, the information obtained from patient perceptions is generally qualitative. Moreover, there may be considerable variation between visits, patients, and physicians' perceptions. Patient questionnaires and objective tests can provide additional information to help manage these diagnostic challenges.

Table 1. Common Dry Eye Symptoms

- Itching
- Burning
- Stinging
- Pain
- Soreness, sticky eyes
- Sensitivity to bright light / sunlight
- Feeling akin to having a grain of sand in the eye (foreign body sensation)
- Ocular irritation
- Blurred vision, poor vision
- Intolerance to windy conditions & air conditioned
- Intolerance to contact lenses
- Ocular redness

Questionnaires provide consistent information and are excellent tools for both clinical research in DED and clinical practice. These instruments can explore many aspects of the disease, including the burden of DED and its effect on a patient's quality of life (QoL). A number of questionnaires have been developed to identify dry eye symptoms and to assess levels of severity. The steps for building and validating a questionnaire are summarized in Table 3.^{10,11} In some cases questionnaires for DED have not been developed specifically for DED. The SF-36¹² and the National Eye Institute Visual Functioning Questionnaire (NEI-VFQ)¹³⁻¹⁵ are examples of questionnaires used in other disease states and applied to DED. Questionnaires used to assess DED symptoms are discussed in Section IV.A.

III. VISION CHANGES IN DRY EYE DISEASE

In 1995, the definition of DED focused simply on symptoms, interpalpebral surface damage, and tear instability.⁴ Symptoms were related to a generic "ocular discomfort." The definition formulated by the 2007 DEWS panel includes symptoms of discomfort but has added visual disturbances as an additional factor.⁹ Patients with DED often complain

Ocular Surface Symptoms Behavior During the Day

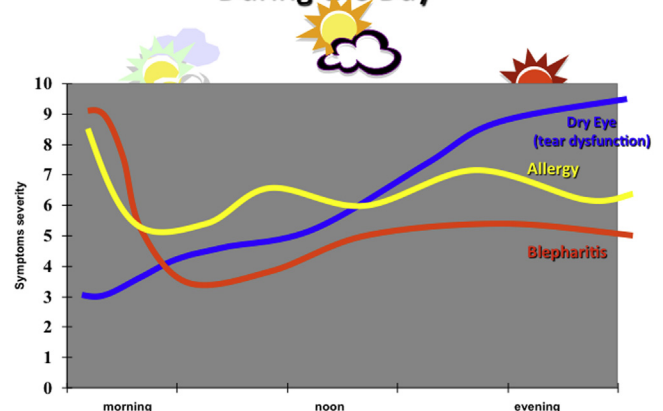


Figure 1. Symptoms behavior during the day is different in dry eye disease, allergy and blepharitis.⁹

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