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What's New in Dry Eye Disease? TFOS Dews II Report- A Summary

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Abstract

Dry Eye Disease (DED) has an increasing incidence worldwide. Although DED has widespread patient population in clinical practice, definition, diagnosis and management might be challenging. In this study, I try to summarize The Tear Film & Ocular Surface Society International Dry Eye Workshop II (TFOS DEWS II) report and go through the updated guidelines which are new.

Keywords: Ocular Surface; Dry Eye Disease; TFOS DEWS II

Introduction

Although dry eye disease (DED) has a relatively short -30 years- history in literature; ophthalmologists meet more frequently with DED patients according to rising incidence and increased level of knowledge in clinical practice. Recently, The Tear Film & Ocular Surface Society International Dry Eye Workshop II (TFOS DEWS II) which is an extensive multipart report on DED has been published [1-11]. Actually that report is the third and the latest update on this topic. Owing to increased clinical data with new publications, clinical, pharmaceutical, and industry interest in DED made that report necessary. I want to review the updated TFOS DWES II guidelines and argue the key-points which are new.

Discussion

TFOS DEWS II includes 10 subcommittee reports that focus on specific clinical areas (Definition and Classification, Sex, Gender & Hormones; Epidemiology; Tear Film, Pain & Sensation; Pathophysiology; Iatrogenic Dry Eye; Diagnostic Methodology; Management & Therapy; and Clinical Trials). Sex, Gender & Hormones [8]; Tear Film [7]; Pain & Sensation [6]; and Iatrogenic Dry Eye [10] reports are new from the previous report. The Sex, Gender & Hormones report focuses the hormones involved in DED, and that androgens are important in the regulation of the ocular surface [8]. Tear film report emphasizes that the entire tear film and its components are responsible for limiting evaporation, not just the lipid layer [7]. Pain & Sensation report argues that dry eye induces nerve damage, especially in cold receptors [6]. Surgical procedures, toxic medications, systemic medication side effects, and contact lenses are listed in Iatrogenic Dry Eye report [10]. I noticed the most remarkable update was the relatively long definition quickly. The new definition is: "Dry eye is a multifactorial disease of the ocular surface, characterized by a loss of homeostasis of the tear film and accompanied by ocular symptoms, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abnormalities play etiologic roles." The writers emphasized to multifactorial nature of the disease and also added a new word "homeostasis" (the normal state). They then list the factors affecting homeostasis of the tear film negatively. They try to make it specific for dry eye, etiological factors were included that are key to DED. Notable emphasis in the definition is ocular symptoms are in the center. The writers also updated the classification scheme. The fact that signs and symptoms does not always correlate in DED; a questionnaire helps differentiate between dry eye disease and other ocular surface diseases in the classification scheme. Also "normal" is shown in the classification scheme differentiating from the previous report. When dry eye disease is confirmed, then key clinical tests (i.e., tear breakup time, tear osmolarity, ocular surface staining) can be performed in order to further classify the type of dry eye according to new classification scheme. TFOS DEWS II presents a new diagnostic algorithm which starts with triaging questions whether to decide the patient has DED or not. The questions aim to differentiate DED from underlying allergic disease and infection. The next step is risk factor analysis after suspicion of DED. The symptomatology screening questionnaires, the Dry Eye Questionnaire 5 (DEQ-5) and the Ocular Surface Disease Index (OSDI), includes symptoms and signs as a part of the diagnostic test. The following part of the diagnostic test is homeostasis markers which are tear break up time (<10 s), osmolarity (abnormal if >308 mOsm/L or if difference is >8mOsm/L between the eyes) and ocular surface staining (>5

corneal spots or >9 conjunctival spots or lid margin >2mm length & 25% width). The next step in diagnostic algorithm is to decide the subtype of the DED: meibomian gland dysfunction (MGD) or aqueous-deficiency and further proceed to specific tests. I think continuing approach in DED starting from definition, classification scheme, diagnostic algoritm in this updated report is important to decide the precise treatment and manage DED successfully. I think another key point to underline is that the writers advise a step-wise approach in treatment according to disease severity in TFOS DEWS II. Due to individualization of the patient more severe case should start at the higher level of treatment or vice versa. There is not much improvement in treatment options in this updated report. Tear replacement (artificial tears, autologous serum), tear conservation (punctal occlusion), tear stimulation (topical/oral secretagogues), ocular lubricants, treating lid abnormalities (lid hygiene, MGD, entropium/ectropium), anti-inflammatory therapy (topical glucorticoids, immunmodulators, tetracyclines,macrolids), dietary modifications (hydration, essential fatty acids), local environmental considerations (decreased blink rate, contact lens wear etc.) are similar with the previous report.

Conclusion

To conclude, TFOS DWES II presents a gold standard DED definition and diagnostic criteria for ophthalmologists to differentiate DED from other ocular surface disorders. These criteria in definition and diagnosis help to include objective standards for future studies and clinical trials.

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Conflict of Interest

The author has no conflict of interest relevant to this article.

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