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Editorial

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Ocular Surface Disorders: Pathophysiology, Clinical Features and Management

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Introduction

Ocular surface disorders (OSDs) encompass a broad spectrum of conditions affecting the cornea, conjunctiva, tear film, and eyelids. These disorders can significantly impact vision, comfort, and quality of life. The ocular surface serves as a protective barrier, maintaining a stable tear film and supporting corneal transparency. Disruption of this delicate system due to environmental factors, autoimmune diseases, infections, or trauma can lead to ocular surface pathology. Early recognition and appropriate management are critical to prevent complications such as corneal ulceration, scarring, and visual impairment [1,2].

Discussion

OSDs include both acute and chronic conditions, often classified by etiology. **Dry eye disease (DED)** is one of the most prevalent disorders, resulting from insufficient tear production or increased evaporation. It manifests as irritation, burning, photophobia, and fluctuating vision. Chronic inflammation in DED can lead to epithelial damage, punctate keratopathy, and even corneal ulceration if untreated. Management includes artificial tears, anti-inflammatory agents, and environmental modifications [3,4].

Inflammatory ocular surface disorders, such as Stevens-Johnson syndrome and ocular cicatricial pemphigoid, involve immune-mediated damage to the conjunctiva and cornea. These conditions often lead to conjunctival scarring, symblepharon formation, and chronic epithelial defects. Early intervention with systemic immunosuppressive therapy and ocular surface lubrication is essential to preserve vision [5].

Infectious ocular surface disorders include bacterial, viral, and fungal keratoconjunctivitis. Bacterial infections can result in corneal ulcers, while viral infections such as herpes simplex keratitis can cause recurrent epithelial defects and stromal scarring. Prompt diagnosis and pathogen-specific therapy are necessary to prevent permanent visual loss.

Degenerative and traumatic ocular surface disorders also play a significant role. Pterygium, a fibrovascular growth of the conjunctiva onto the cornea, can cause visual distortion and astigmatism. Traumatic injuries to the ocular surface can disrupt the corneal epithelium and tear film, predisposing the eye to infection and delayed healing.

Diagnosis of OSDs relies on clinical evaluation, slit-lamp examination, tear film assessment, and imaging techniques like confocal microscopy or ocular surface topography. Treatment strategies are tailored to the underlying etiology, ranging from lubricants and anti-inflammatory therapy to surgical interventions such as amniotic membrane transplantation or pterygium excision.

Conclusion

Ocular surface disorders are multifactorial conditions that can profoundly affect vision and ocular comfort. Timely diagnosis, targeted treatment, and ongoing monitoring are essential to prevent complications and preserve visual function. Advances in diagnostic imaging, pharmacotherapy, and surgical techniques continue to improve outcomes and quality of life for patients with ocular surface disorders.

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