Intense pulsed light for improving dry eye disease in rosacea

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THERAPEUTIC CHALLENGE

Rosacea is an inflammatory dermatosis that may present with dry eye symptoms. Ocular treatments include tetracycline derivatives combined with good lid hygiene and artificial tears. However, prolonged use of antibiotics may cause unwanted adverse effects.

THE SOLUTION

Pulsed dye lasers and intense pulsed light devices filtered to emit green-yellow light pulses are highly effective treatments for erythematotelangiectatic rosacea. There is typically significant improvement in the dry eye symptoms after treatment of periocular facial skin.

The ophthalmology literature reports improvement of dry eye symptoms in clinical trials after intense pulsed light is used to treat facial erythema. Dry eye disease associated with rosacea is commonly due to meibomian gland dysfunction.[1,2] Meibomian glands are specialized sebaceous glands in eyelids responsible for producing oily components of the tear layer. Although the pathophysiology is unknown, it is clear that rosacea includes sebaceous gland and meibomian gland dysfunction.

Treatment of the periocular skin is thought to inhibit propagation of inflammatory mediators to the meibomian glands.[1] Treatment is applied horizontally from tragus to tragus and from the maxillary process of the zygomatic bone to the inferior orbital rim.[2] Eye shields are necessary for proper eye protection.

Intense pulsed light device settings depend on skin type and vessel caliber and are not generalizable between different platforms. The clinical end point is transient purpura or vessel clearance. Fluences of 25 to 40 J/cm^2 and pulse durations of 10 to 20 milliseconds are used with proper epidermal cooling. In our experience, most patients experience substantial dry eye improvement, which is sustained for 2 to 3 months after each treatment.

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