Evaluation of Novel Therapeutic Agents for the Treatment of Chronic Dry Eyes

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INTRODUCTION

- Dry eye disease (DED) is a multifactorial ocular condition, where disrupted tear film stability and ocular surface inflammation affected between 5% to 34% of the worldwide population in 2015 and posed a challenge to conventional ophthalmic treatments.[1]
- Recent advances have led to potential novel therapeutics aiming to alleviate symptoms and improve patient outcomes.

OBJECTIVE

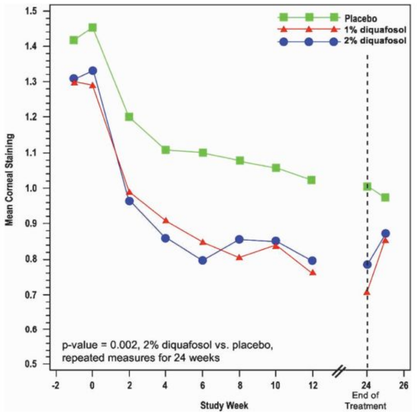
- Compare current pharmacological (rebamipide, diquafosol, lifitegrast, and cyclosporine A) and non-pharmacological (intense pulse light) treatments and their treatment efficacies.

METHODS

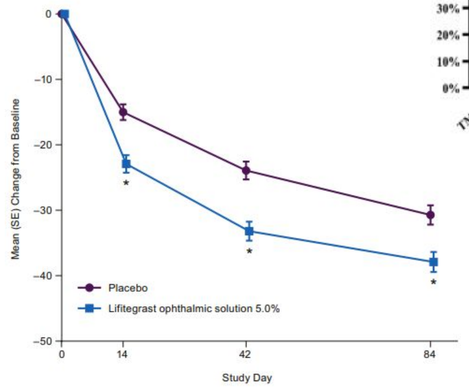
- A database search using PubMed was performed using keywords to target dry eyes from conventional to novel, and pharmacologic to nonpharmacologic treatment types.
- A total of six journal articles from 2000 to 2023 encompass various mechanisms involved in the novel therapeutics of DED pathophysiology, including tear film stability, inflammation, and neurosensory abnormalities.
- The efficacies of each treatment were generally reviewed based on corneal staining, tear breakup times (TBUT), Schirmer's scores, and symptom improvements.

RESULTS

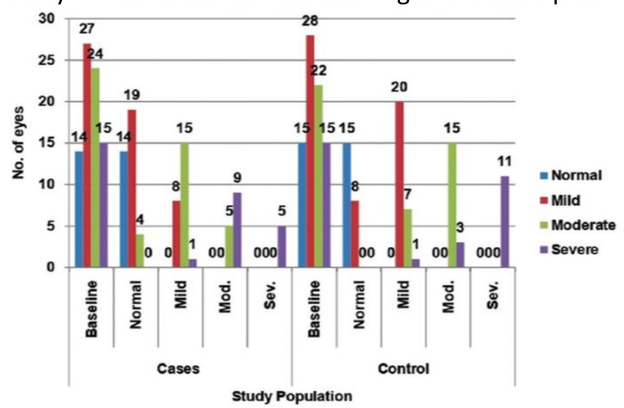
Mean corneal staining with diquafosol



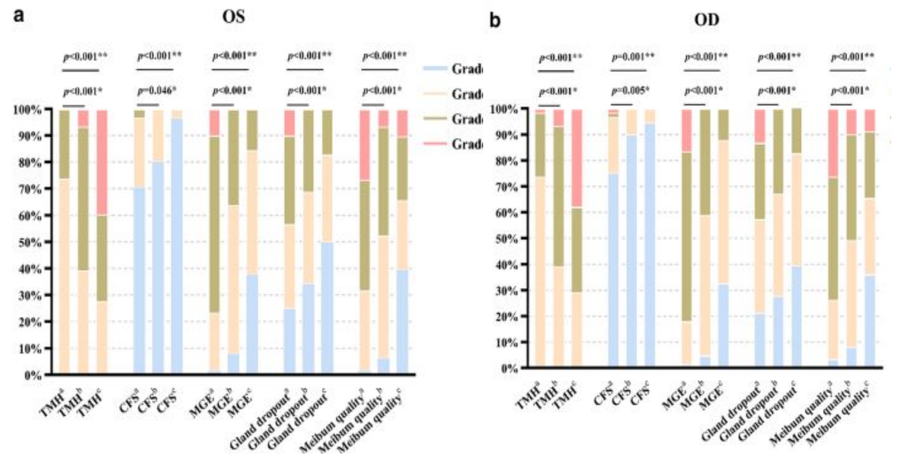
Eye dryness score with lifitegrast



Efficacy in fluorescein corneal staining with rebamipide



Intragroup comparisons of intense pulsed light therapy



CONCLUSION

- Recent pharmacological advancements in understanding the complexity of DED have emphasized the potential of novel therapeutic interventions.
- DED is the result of an underlying cytokine and receptor-mediated inflammatory process affecting both the lacrimal gland and the ocular surface.
- Corneal staining is the hallmark sign of DED and is believed to warrant treatment in dry eye disease to prevent the complications of infection and corneal scarring.[3]
- Emerging strategies targeting tear film stability, inflammation, and the neurosensory components of DED offer improvement in patient care and quality of life.

References

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