



Use of Tacrolimus in the Treatment of Recalcitrant Vernal Keratoconjunctivitis

Mahin Choudhury MD, Robert Swan MD

Department of Ophthalmology & Visual Sciences, SUNY Upstate Medical University

Introduction

- Vernal keratoconjunctivitis (VKC) is a severe allergic response resulting in itchy/watery eyes, discharge, and photophobia
- VKC is generally a self-limiting disease that occurs most often in young boys usually resolving by puberty⁽¹⁾
- However, some cases of VKC can be severe and progress to vision loss if left untreated
- Treatment can involve conservative options such as lubrication and mast cell inhibitors, but escalation to steroids and immunosuppressive medication may be necessary

Case Presentation

- 10-year-old male recently moved from India with 3-year history of intermittent redness, itchiness and tearing, developing “white bumps” on eyes
- In India, he failed artificial tears (AT), olopatadine, steroid injection trials
- Patient was started on tacrolimus ointment for 6 months followed by bepotastine ophthalmic drops with improvement
- After moving to the US, he was started on Pataday and AT, but still had intermittent flares
- His initial exam was significant for 1+ papilla on tarsal conjunctiva, limbal Horner-Trantas dots OD>OS without infiltrates despite Pataday and artificial tears
- Due to increasing symptoms and continued injection with limbal Horner-Trantas dots, Tacrolimus ointment was initiated twice a day
- Three weeks after initiating topical Tacrolimus therapy, there was significant relief of symptoms – even though usage was sporadic at twice a week. The family was educated on strict medication adherence

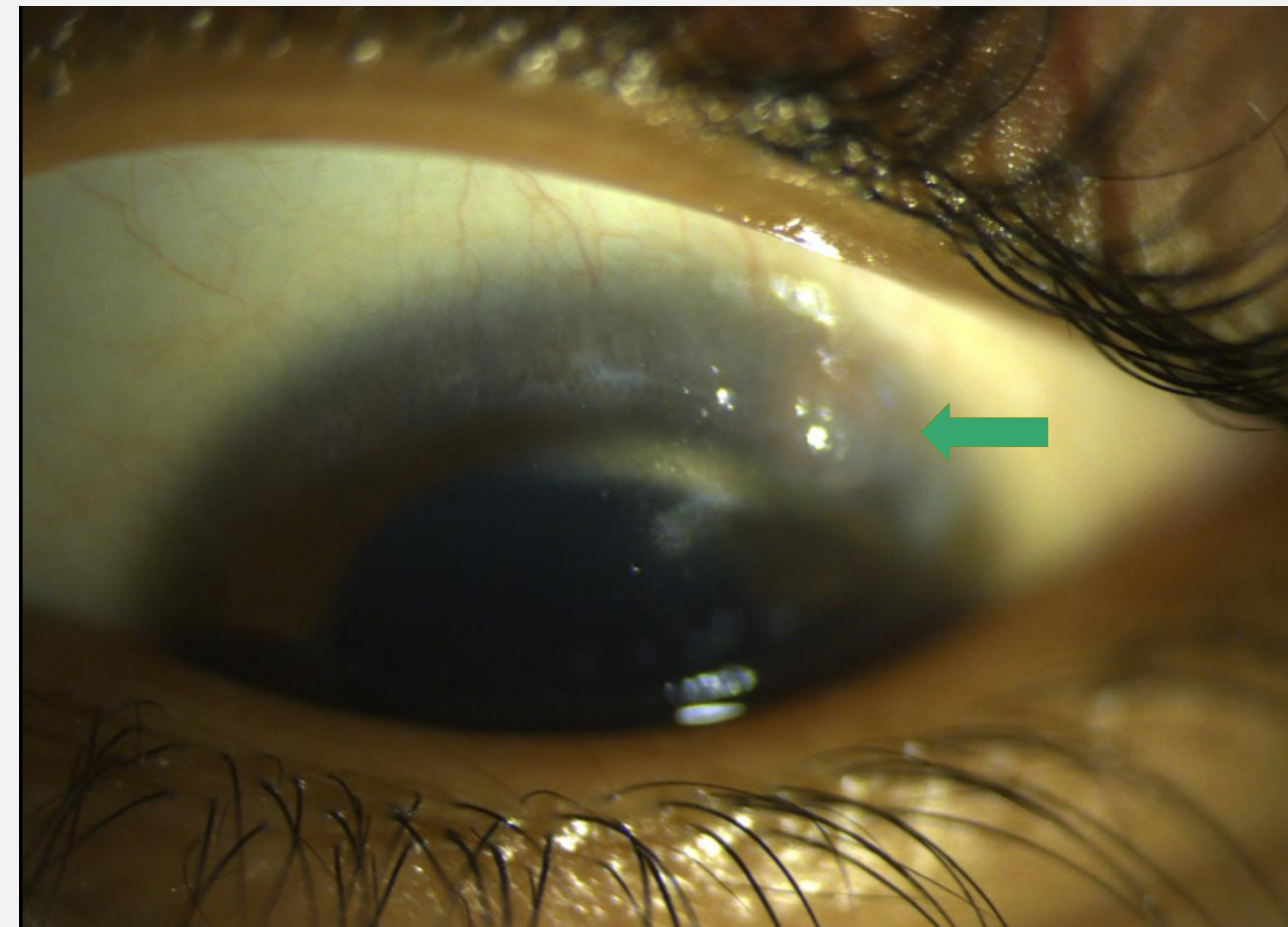


Figure 1. Arrow indicating Horner Trantas Dot along with limbal opacification

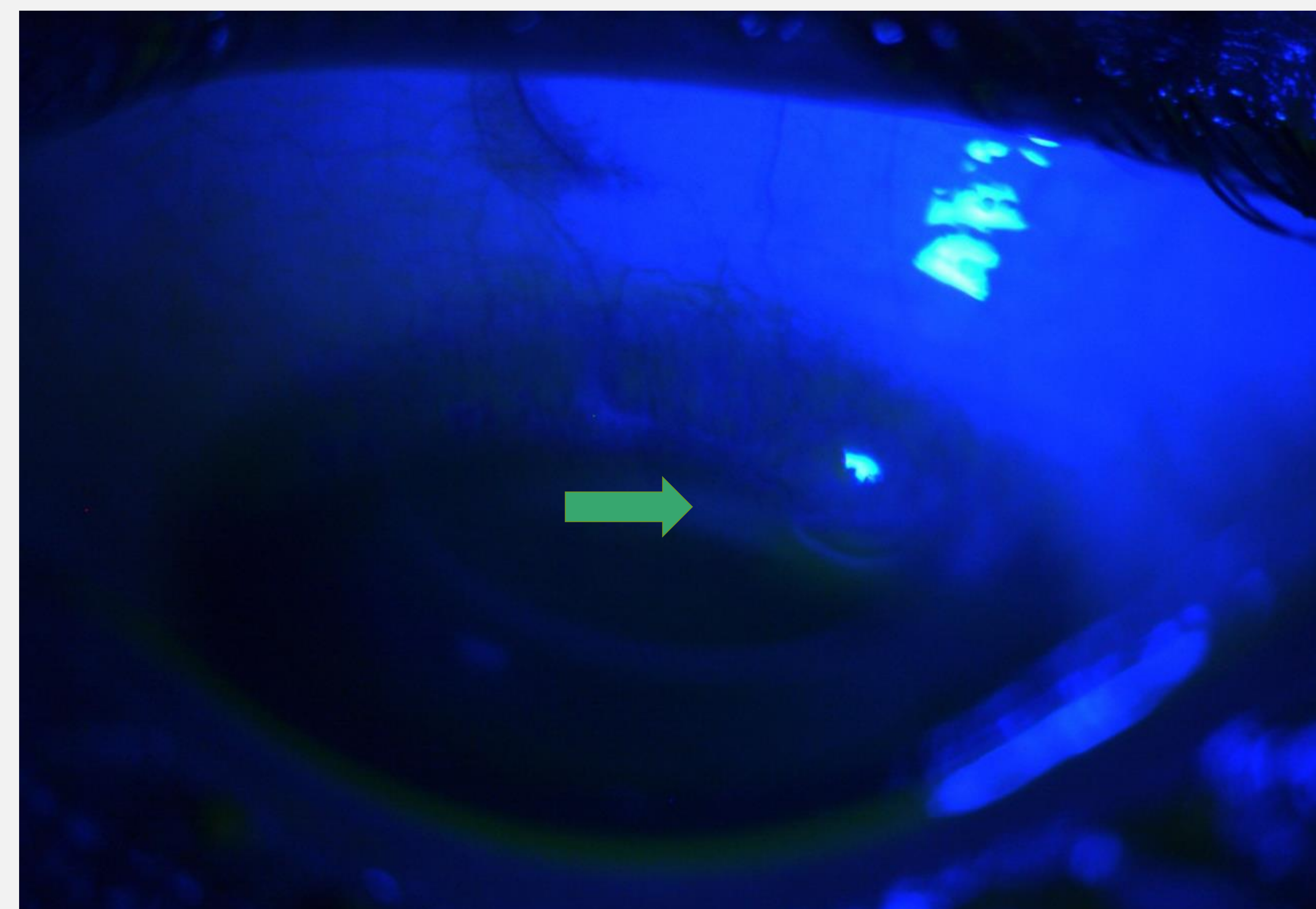


Figure 2. Fluorescein eye test with arrow indicating Trantas dot, no corneal ulceration noted

Discussion

- Severe VKC can pose a significant challenge, as flare ups occur even with proper lubrication and eye hygiene
- Topical corticosteroids can be considered as a second-line treatment option, however prolonged use is associated with significant side effects such as increased intraocular pressure, development of glaucoma, or cataract formation⁽²⁾
- Immunomodulators such as topical tacrolimus provide a reasonable, steroid-sparing alternative that can be used off-label for refractory cases
- Tacrolimus acts by blocking several inflammation pathways involving Th2 lymphocytes, histamine release from mast cells, and eosinophil recruitment to reduce VKC symptoms⁽³⁾
- Previous studies have shown the efficacy of tacrolimus, with the major side effect reported to be temporary ocular irritation on instillation⁽²⁾

Conclusion

- Tacrolimus ointment is an effective, off-label treatment option for refractory cases of VKC
- Compared to chronic corticosteroid therapy, the alternative of tacrolimus has a preferred side effect profile with comparable efficacy

References

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