



# Herpes Simplex Virus Keratitis Recurrence Rates With Topical Corticosteroid Use

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# Background

- 20,000 new cases and 28,000 recurrences of herpes simplex occur in the US each year<sup>1</sup>
- HEDS group demonstrated that oral acyclovir reduces recurrence<sup>2</sup>
- No studies indicate whether adding a topical corticosteroid can further reduce this risk – specifically in stromal keratitis or keratouveitis



# Methods

- Total of 135 unique patients and 111 HSV keratitis recurrences were recorded
- Retrospective cohort study with patients visiting the UPMC Eye Center from 09/2002 to 09/2011
- Patients were diagnosed with herpes simplex keratitis and had not received a corneal transplant



# Results

- Mean age: 54yo at first presentation
- Gender: 55% male
- Classification of HSV keratitis:
  - 44% epithelial
  - 29% stromal
  - 4% endothelial
  - 23% were not able to be classified
- 60% of patients did not have a single recurrence
- Of those with recurrence:
  - 40% were on an oral antiviral alone
  - 5% were on a topical corticosteroid alone
  - 23% were on both
  - 32% were on neither medication



# Results

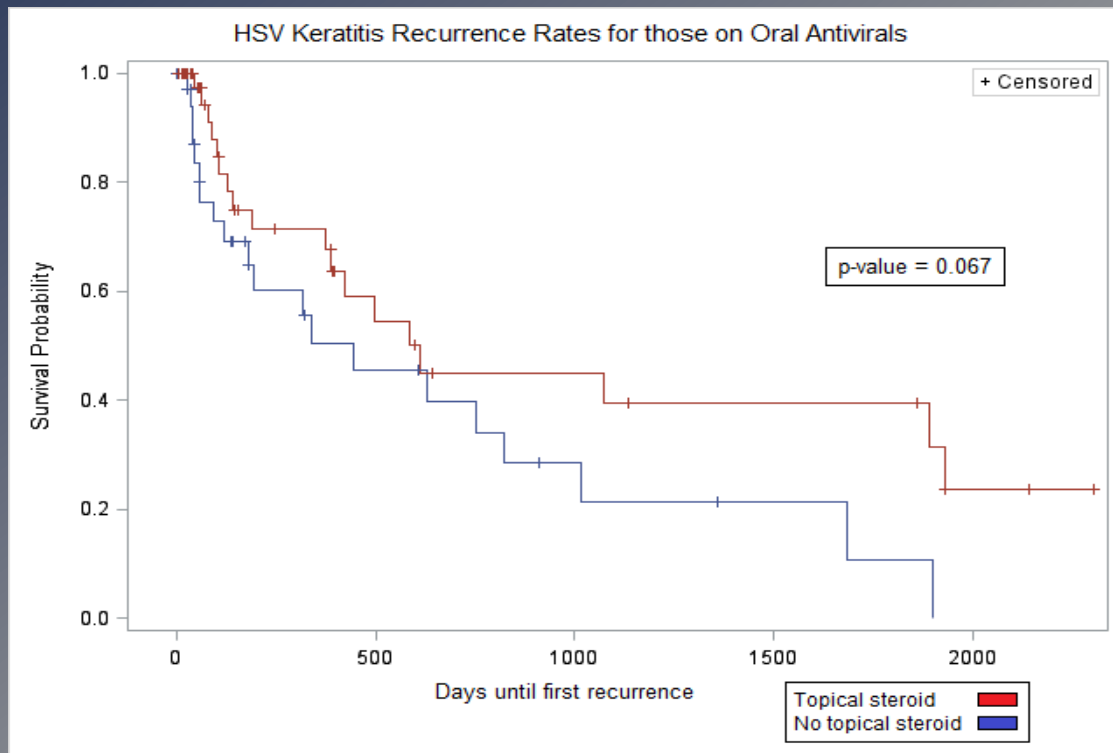
Analyzing each patient's first recurrence using a proportional hazards model, both oral antivirals and topical corticosteroids were estimated to reduce the risk of HSV keratitis recurrence; however, only oral antiviral use was statistically significant.

Medication	Hazard ratio estimate	Chi-square p-value
Oral antiviral	0.552	0.045
Topical corticosteroid	0.808	0.501



# Results

When reviewing the subset of patients already taking oral antivirals (those with a history of stromal keratitis or keratouveitis), a Kaplan-Meier survival curve shows that topical corticosteroids may have some additional benefit.





# Pros/Cons

## Pros

- First known review aimed solely at assessing efficacy of long-term topical corticosteroid use in reducing HSV stromal keratitis and keratouveitis recurrences
- Good sample size due to tertiary nature of UPMC Eye Center

## Cons

- Retrospective study
- Possible error in medications secondary to incomplete record or patient noncompliance



# Conclusion

- Oral antiviral therapy reduces the risk of HSV keratitis recurrence<sup>2</sup>
- Our belief is that long-term, low-dose topical corticosteroids have a place in the prevention of recurrent HSV stromal keratitis or keratouveitis





# References

1. Yanoff M, Duker JS, Augsburger JJ, et al. Ophthalmology, 3<sup>rd</sup> Ed., Ch. 4, pg. 279-284, New York, 2009.
2. Oral acyclovir for herpes simplex virus eye disease: effect on prevention of epithelial keratitis and stromal keratitis. Herpetic Eye Disease Study Group. Arch Ophthalmol. 2000; 118: 1030-1036.