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## Effect of Oral Acyclovir After Penetrating Keratoplasty for Herpetic Keratitis

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Recurrent herpetic infection of the eye can lead to stromal keratitis with corneal scarring and eventually loss of vision. In corneal transplantation for Herpes Simplex Keratitis, the postoperative course is not uncommonly complicated by recurrence of herpetic disease which compromises the grafts and results in a significant increase in failure rate. Herpetic Epithelial Defect recurrences and graft rejections threaten the survival of corneal grafts- both are probably related to HSV reactivation before or during the rejection episodes, and graft survival are improved when antivirals are added to the steroid therapy. Herpetic Eye Disease Study group reported that oral acyclovir effectively prevents relapses in patients with recurrent HED. After Penetrating Keratoplasty in rabbits with latent HED, systemic acyclovir had significant effect on parameters related to viral recurrences. We report a pilot study in Indian race suggesting oral acyclovir significantly improve graft outcomes in Herpetic leucomas.

### Materials and Methods

11 consecutive patients examined at Aso Palav Eye Hospital, Ahmedabad, having a clear and recurrent clinical history of herpetic epithelial or stromal keratouveitis requiring corneal grafts for significant visual loss resulting from leucomas were recruited for the study. All patients were thoroughly examined for signs of immunosuppression or acyclovir hypersensitivity.

The data collected at baseline included BCVA, the interval of last episode of HED, quadrants of vascularization, corneal sensation, vital staining, and any previous surgery. All patients were thoroughly explained the possibility of recurrence of disease and risk benefit of long term acyclovir therapy. Post operatively all were put on topical antibiotic steroid combination along with cycloplegic and a preservative free tear substitute. Along with routine regimen all were prescribed systemic acyclovir 400 mg thrice daily. All were followed up every week for first month every 15 days for next 3 months, every month for 6 months and then every 3 months. An event was defined as any clinically suspicious rejection, HED recurrence, or a combination of two.

### Results

Patients were significantly younger mean age 48.8 (SD 12.92) years and were of the male sex (100%), both of which results accord with the findings of previous epidemiological surveys. Mean duration of disease as documented by history and previous medical reports were 9.98(SD 5.4) yrs. Mean duration of last recurrence was 15.54(SD 9.64) months. All patients have altered corneal sensation with 72.7% having almost absent and 27.3% have decreased corneal sensation, with a higher incidence of pre-existing corneal surface problems (20.2%). There were fewer eyes without

corneal neovascularisation with 36.4% having less than 2 quadrants, and 27.3% having greater than 3 quadrants Vascularization. These patients also have visually significant nuclear sclerosis in 36.4% with 9.1% cases had aphakia. The more advanced central corneal scarring observed in individuals with HSK was also evidenced by their poorer preoperative corrected visual acuities 0.02 (0.16). Individuals required larger graft diameters ranging from 7.2 – 7.70 mm.

Consistent with the preoperative situation, postoperative data revealed a higher incidence of Persistent Epithelial Defects in immediate post operative period (63.6%). All except one responded to topical lubricants and patching. One case had dendrogeographic ulcer requiring topical antivirals and tarsorrhaphy. One case had necrotizing stromal keratitis not responding to treatment and eventual loss of the graft. One eye had active keratouveitis clinically appearing to have both recurrence and rejection happening on 2 post op month. Same patient had dendrite breakdown in other eye at same time. The graft finally got edematous and failed.

These patients are still followed up, with post operative duration ranging from 6 to 15 months. Overall survival of grafts on long term acyclovir appears to be good with 72.7% grafts remaining clear and with no further activation of HED. Post operative visual acuity 0.23 (0.16), which is statically significant ( $p < .004$ ). Patients with 1 year of follow up were advised to taper acyclovir.

### Discussion

A significant reduction of HSV related events were detected when oral acyclovir 400mg thrice daily was administered. This has been proved previously by many western literatures all studied retrospectively. Though commonly believed to be a lesser menace we are actually encountering quite a few HSK related stromal keratitis eventually requiring grafts. Postoperative period is usually difficult to predict in such cases and mostly bilaterality makes condition tricky to treat. We have found are patients on systemic long-term acyclovir behaving in a more predictable manner.

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