Outcomes of Therapeutic Penetrating Keratoplasty Using Glycerol-preserved Donor Cornea in Infectious Keratitis

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**Background and objective**: Complicated infectious keratitis can be successfully treated with penetrating keratoplasty using optisol-preserved cornea. A common problem in developing countries, including Thailand, was corneal donor shortage. For this reason, some ophthalmologists had used glycerol-preserved cornea instead of standard optisol-preserved cornea. We conducted this study in order to report the surgical outcomes and complications of therapeutic penetrating keratoplasty using glycerol-preserved cornea in severe infectious keratitis.

**Methods**: This is a hospital-based retrospective review of patients with infectious keratitis treated with penetrating keratoplasty using glycerol-preserved cornea at KKU Eye Center, Srinagarind Hospital from 1993-2013.A total of 22 patients were included. The medical records were reviewed for baseline characteristics, recurrent rate, visual outcome, wound integrity, secondary glaucoma and storage time of corneal donors.

**Results**: Twenty-two eyes from 22 patients were included. Age ranged from 28 – 85 years and the donor size ranged from 7.5 to 9.5 millimeters. The most common causative agents were fungus (17/22, 77.3%). Ten patients (45.5%) developed secondary glaucoma and 8 patients (36.4%) had wound leakage. Recurrence of infection was observed in 15 patients (68.2%) and 9 patients (40.9%) received enucleation or evisceration. Thirteen globes (59.1%) were saved and final visual acuity ranged from 1/60 to light perception. The storage time of donors varied between 2 days to 5 years.

**Conclusion**: Therapeutic penetrating keratoplasty using glycerol-preserved cornea has a high rate of secondary glaucoma and recurrence of infection with unsatisfied visual results. It may be effective substitutes for evisceration or enucleation in countries where donor tissue is deficient.

**Keywords**: Glycerol-preserved cornea, penetrating keratoplasty, infectious keratitis