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

Wathanee Sripawadkul[1], Onsiri Thanathanee[2], Orapin Enkvetchakul[2], Olan Suwan-apichon[2], Pattanaree Luanratanakorn[2]

[1] KKU eye center, [2]Cornea and Refractive Surgery Service, Department of Ophthalmology, Srinagarind Hospital , Khon Kaen University, Khon Kaen, Thailand

Email : wathanee.sri@gmail.com, onsirit@yahoo.com

Oral

Background and objective : Complicated infectious keratitis can be successfully treated with penetrating keratoplasty using optisol-preserved cornea. A common problem in developing country, 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 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