

INFLUENCE OF ADVANCED RECIPIENT AGE ON CORNEAL GRAFTS AND FACTORS AFFECTING GRAFT SURVIVAL

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Background: There has been a significant increase ($p < 0.0001$) in the proportion of corneal transplants performed on elderly recipients (aged ≥ 80 years at surgery) since the start of the Corneal Transplant Service in 1983. The proportion of elderly cornea recipients has risen from 7% in 1983-85 to 18% in 2004-05. The aim of this study was to compare graft survival rates and investigate factors affecting corneal graft survival in this subset of recipients.

Methods: This study only considers elderly patients receiving a first penetrating keratoplasty (PKP), in the UK between April 1999 and March 2004. There were 6200 first PKP reported to UK Transplant in this time period, of which 1142 (18%) were aged 80 years or over at transplant. Follow-up of the graft has been reported in 1043 instances (91%). Kaplan-Meier survival curves were used to illustrate differences in three-year transplant outcome for different age groups. A Cox regression model was fitted, to investigate the effect that pre-operative factors had on transplant survival in recipients over 80 years of age.

Results: Three-year corneal transplant survival for elderly recipients was 79% (95% CI: 75-83), which was only slightly lower ($p = 0.14$) than the survival rate for recipients aged less than 80 years (81%, 95% CI: 79-82). By excluding transplants performed for keratoconus (a condition mainly affecting younger recipients) however, the survival rate for elderly recipients was slightly higher than younger recipients (75%, 95% CI: 73-77).

Of the pre-operative factors considered in the analysis, indication for PKP ($p = 0.001$), suturing method ($p = 0.001$), whether or not cataract surgery was performed at the time of the transplant ($p = 0.02$), donor gender ($p = 0.002$), HLA matching ($p = 0.02$), perforation of the cornea ($p = 0.03$) and whether the patient had chronic glaucoma ($p = 0.02$) were all found to affect graft survival among elderly recipients.

Conclusions: The difference in survival rates between elderly recipients and those aged less than 80 years was not statistically significant. The CTS Eye Banks attempt to match recipients with corneas from similarly aged donors and as a result neither recipient age nor donor age were found to affect graft survival. Indication for transplant, suturing method and donor gender were the main explanatory factors that affected graft survival in elderly recipients.