

AN INVESTIGATION OF FACTORS INFLUENCING VISUAL ACUITY SCORE IMPROVEMENTS FOLLOWING CORNEAL GRAFTS

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A corneal graft is an eye operation in which diseased parts of the cornea are replaced with clear corneal tissue from a donor. The preferred procedure for most corneal grafts is Penetrating Keratoplasty (PKP) in which all layers of the cornea are replaced.

This study concerns patients who received a PKP for Keratoconus, an abnormal condition of the eye in which the cornea is conical rather than spherical. The graft survival rate is very good for this group of patients, with 95% of grafts still functioning two years post-transplant. However, few studies investigate improvements in visual acuity following corneal grafts and the sample size used in most of these studies is too small to aid clinical decisions.

Visual acuity scores have been recorded on the National Transplant Database held by UK Transplant, both preoperatively and at one and two years postoperatively, for corneal grafts undertaken since April 1999. There was sufficient data reported to UK Transplant to investigate improvements in the grafted eye's visual acuity at one year post-transplant. Ordinal logistic regression was used to identify prognostic factors that influenced improvements in visual acuity. A number of different models are compared and their adequacy assessed using suitable diagnostics.