

Abstract, NOK 2024

Title: UT-DSAEK or DMEK for Fuchs' endothelial dystrophy – a prospective randomized study

**Aims:**

The study aimed to compare visual acuity, contrast sensitivity and endothelial cell density (ECD) in patients treated with ultrathin Descemet's stripping automated endothelial keratoplasty (UT-DSAEK) or Descemet's membrane endothelial keratoplasty (DMEK) combined with phacoemulsification and lens implantation.

**Methods:**

The study used a randomized, single-blinded design. Seventy-two patients with Fuchs' endothelial dystrophy and cataract underwent either UT-DSAEK or DMEK combined with phacoemulsification and lens implantation. In addition, a control group consisting of 37 patients with cataract underwent phacoemulsification and lens implantation.

**Results:**

Compared with UT-DSAEK, DMEK showed a significantly better visual acuity 12 months after surgery with a mean difference of 5.7 ETDRS ( $p < 0.001$ ). The control group showed a significantly better visual acuity 12 months after surgery compared with the DMEK group with a mean difference of 5.2 ETDRS ( $p < 0.001$ ). No significant difference in contrast sensitivity was found 12 months after UT-DSAEK and DMEK ( $p = 0.08$ ). The control group had a significantly better contrast sensitivity than the DMEK group 12 months after surgery ( $p = 0.01$ ). The ECD was significantly lower 12 months after UT-DSAEK compared with DMEK with a mean difference of 227 cells/mm<sup>2</sup> ( $p = 0.03$ ).

**Conclusions:**

Compared with UT-DSAEK, DMEK resulted in better visual acuity 12 months after surgery; however, no difference in contrast sensitivity was found. The control group obtained better visual acuity and contrast sensitivity than the DMEK group 12 months after surgery. UT-DSAEK showed a lower ECD than DMEK 12 months after surgery.

**Keywords:**

UT-DSAEK, DMEK, Cataract surgery, visual function

**Invited speaker:**

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