A Randomized Controlled Trial Comparing Microthin Descemet Stripping Automated Endothelial Keratoplasty (MT-DSAEK) with Descemet Membrane Endothelial Keratoplasty: 2 year report

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Abstract

Purpose: To report the 2 year outcomes of a double blind randomised controlled trial comparing DMEK and Microthin DSAEK.

Methods: 56 eyes of 56 patients were randomised to DMEK or the MT-DSAEK. The primary outcome measure was Best Spectacle Corrected Visual Acuity (BSCVA) at 24 months. Secondary outcomes included complications, endothelial cell density and visual related Quality of Life (vQoL).

Results: There was no statistical significant difference in BSCVA between the DMEK and the MT-DSAEK group at 2-year time point (0.05 ± 0.15 vs 0.10 ± 0.09, p=0.065) in contrast to the 1-year results (mean $\pm$ SD; 0.04 ± 0.13 vs 0.11 ± 0.09, p=0.02) previously reported. Endothelial cell density did not show statistically significant difference at 24 months between DMEK and MT-DSAEK groups (1529 ± 297 cell/mm^2 vs 1432 ± 362 cells/mm^2, p=0.31). There were 2 additional graft rejection episodes in the MT-DSAEK group between the one and two year follow up period but this did not result in graft failure. . The mean vQoL scores between DMEK and MT-DSAEK indicated similar patient satisfaction between the groups. (97.0 ± 4.0 vs 93.8 ± 10.0, p=0.0588).

Conclusion: In summary, the trial showed no significant difference in BSCVA at 24 months between the DMEK and MT-DSAEK group. Both techniques continued to demonstrate comparable outcomes in terms of complication rate and patient reported vQoL scores.