

**Supplemental file 6. Overview of all the investigated risk factors for the development of ocular hypertension after keratoplasty, ranged in a clinically relevant order**

Risk factor	Level of association*	Increased risk with	Number of study results		
			Univariate	Multivariate	Total
Preoperative					
Pre-existing glaucoma	4 (H)	Presence	17	7	24
Preoperative IOP	4	Higher preoperative IOP	4	3	7
Glaucoma in contralateral eye (no glaucoma in investigated eye)	3	Presence	1	1	2
History of pseudo-exfoliation syndrome	2	Presence	1	0	1
Preoperative treatment of glaucoma with medication	2	Presence	1	0	1
Preoperative treatment of glaucoma with medication and/or surgical	2	Presence	1	0	1
Preoperative treatment of glaucoma surgical	1 (H)	-	3	1	4
Preoperative treatment with medication vs. surgical	1	-	1	0	1
Preoperative treatment with one vs. two or more medications	1	-	1	0	1
Cyclosporine use before transplantation	3	Presence	0	1	1
Olopatadine 0.1% use before transplantation	3	Presence	0	1	1
Age patient (old vs. young age)	2 (H)	Younger age	12	9	21
Gender (male vs. female)	2 (H)	Male gender	9	4	13
History of ocular surgery	2	Absence	1	1	2
Preoperative presence of peripheral anterior synechiae	2	Presence	1	1	2
Age donor (older age)	1 (H)	-	2	0	2
Diabetes mellitus	1	-	1	0	1
Hypertension	1	-	1	0	1
Family history of keratoconus	1	-	1	0	1
History of steroid use (systemic + topical)	1	-	1	0	1
Indication bullous keratoplasty (yes vs. no)	3	Presence	0	2	2
Microbial keratitis with vs. without corneal perforation	2	Presence	1	0	1
Inflammatory vs. non-inflammatory indication	2	Inflammation	1	0	1
Indication (general)	1	-	3	1	4
History of vernal keratoconjunctivitis	1	-	1	0	1
Non-optical vs. optical indication	1	-	0	1	1
Keratoconus + vernal keratoconjunctivitis vs. keratoconus only	1	-	1	0	1
Indication keratoconus					
- Bullous keratoplasty vs. keratoconus	3	Bullous keratoplasty	11	0	11
- Corneal dystrophy (general) vs. keratoconus	1	-	8	0	8
- FED vs. keratoconus	1 (H)	-	3	0	3
- Scar vs. keratoconus	1	-	6	0	6
- Trauma vs. keratoconus	1	-	3	0	3
- Herpetic keratitis vs. keratoconus	1	-	3	0	3
- Infectious keratitis vs. keratoconus	1	-	8	0	8
- Others (general) vs. keratoconus	1 (H)	-	5	0	5
- Adherent leucoma vs. keratoconus	1	-	1	0	1
- Descemetocoele vs. keratoconus	1	-	1	0	1
- Band keratopathy vs. keratoconus	1	-	1	0	1
- Dysgenesis vs. keratoconus	1	-	1	0	1
- Corneal edema vs. keratoconus	1	-	1	0	1
Preoperative: Aphakic vs. phakic	1 (H)	-	6	1	7
Preoperative: Pseudophakic vs. Phakic	1 (H)	-	6	1	7

Preoperative: Aphakic or pseudophakic vs. Phakic	1	-	1	0	1
Preoperative: Lens status in general	1	-	0	1	1
Preoperative: Placement of IOL: sulcus vs. bag	1	-	1	0	1
Preoperative: Placement of IOL: scleral fixated vs. Bag	1	-	1	0	1
Ethnicity: Caucasian vs. African-American descent	3	African-American descent	1	1	2
Ethnicity: Maori or Pacific (new Zealand Europeans, Samoan, other Pacific people) ethnicity vs. others (Indian, other European en Middle Eastern)	2	Others	1	0	1
Ethnicity: Non-Chinese vs. Chinese	1 (H)	-	1	1	2
Ethnicity: Region of the United States (East, West, Midwest, South)	1	-	1	0	1
<b>Intraoperative</b>					
Type of surgery: PKP vs. DS(A)EK	2 (H)	Higher in PKP	9	1	10
Type of surgery: DSEK	2	Presence	1	0	1
Type of surgery: Re-graft (due to failed or rejected graft)	2 (H)	Presence	11	3	14
Type of surgery: Re-PKP vs. DSAEK after failed PKP	2	DSAEK	1	0	1
Type of surgery: PKP vs. DALK	1 (H)	-	7	1	8
Type of surgery: Re-PKP vs. EK after failed PKP	1	-	1	0	1
Type of surgery: ALK vs. DSAEK	1	-	1	1	2
Type of surgery: DALK converted to PKP vs. DALK	1	-	2	0	2
Type of surgery (general)	1	-	2	0	2
Type of surgery: DMEK	1	-	1	0	1
Type of surgery: DALK	1	-	1	0	1
Combined surgery: Keratoplasty + IOL removal or exchange	4	Presence	5	2	7
Combined surgery (general)	3	Presence	7	3	10
Combined surgery: Keratoplasty + vitrectomy	2	Presence	3	1	4
Combined surgery: Keratoplasty + retaining anterior chamber IOL vs. Keratoplasty posterior chamber lens left in place	2	Presence	1	0	1
Combined surgery: Triple procedure (yes vs. no)	1 (H)	-	6	2	8
Combined surgery: Keratoplasty + ECCE	1 (H)	-	2	1	3
Combined surgery: Keratoplasty + anterior segment reconstruction	1	-	2	1	3
Combined surgery: Keratoplasty + secondary IOL	1	-	1	0	1
Combined surgery: Keratoplasty + cataract extraction with IOL in ciliary sulcus vs. IOL in bag	1	-	1	0	1
Half top-hat vs. regular PKP	2	Half top hat	1	0	1
Zig Zag vs. top-hat in PKP	1	-	1	0	1
Zig Zag with femtosecond vs. mechanical trephine in PKP	1	-	1	0	1
Manual top-hat vs. regular PKP	1	-	1	0	1
Manual half top-hat vs. top-hat PKP	1	-	1	0	1
Width of the incision (large vs. small) in DSAEK or DLEK	1	-	2	0	2
Trephination with excimer vs. motor	1	-	1	0	1
Busin Guide-assisted vs. forceps-assisted DSAEK	1	-	1	0	1
Stitch-assisted vs. forceps-assisted DSAEK	1	-	1	0	1
Interrupted vs. interrupted + single continuous	1	-	2	0	2
Foreign vs. domestic donor grafts	1 (H)	-	3	0	3
Laterality: Left vs. right	1	-	1	0	1
Graft diameter in PKP (large vs. small)	2 (H)	Larger diameter	6	2	8
Graft diameter in DSAEK (per mm increase)	1	-	1	0	1
Graft diameter in DALK (per mm increase)	1	-	0	1	1
Graft oversize in PKP (large vs. small)	1 (H)	-	3	2	5
Size of malapposition	1	-	0	1	1

ANWAR big bubble technique	1	-	0	1	1
Sulfar hexafluoride SF <sub>6</sub> 20% vs. 100% air (bubble technique)	1 (H)	-	2	0	2
Rebubbling	1	-	1	1	2
Intraoperative perforation of the Descemet membrane during DALK	1	-	1	1	2
<b>Postoperative</b>					
Type of steroid use: Prednisolone acetate 1% vs. dexamethasone 0.1%	3	Prednisolone	0	1	1
Type of steroid use: Prednisolone acetate 1% vs. loteprednol etabonate 0.5%	2	Prednisolone	1	0	1
Type of steroid use: Prednisolone acetate 1% vs. fluorometholone 0.1%	2	Prednisolone	1	0	1
Type of steroid use: Prednisolone acetate 0.12% vs. dexamethasone 0.1%	1	-	0	1	1
Duration of steroid use (longer use)	1	-	1	2	3
Ocular surgery after keratoplasty	1	-	0	1	1
Cataract surgery after keratoplasty	1	-	1	0	1
Postoperative procedures or complications	2	Presence	1	2	3
Postoperative corneal scar vs. corneal oedema	2	Corneal scar	2	0	2
Postoperative graft failure/rejection	1 (H)	-	1	1	2
Postoperative graft status: Clear graft vs. graft with BK	1	-	1	0	1
Postoperative presence of peripheral anterior synechiae	1	-	1	0	1
Graft clarity (high to low clarity)	1	-	1	0	1
<b>Pre- and postoperative</b>					
Pre- and postoperative: Presence of peripheral anterior synechiae	1	-	1	0	1
<b>Pre- or intraoperative not defined</b>					
Aphakic vs. phakic: Status pre- or intraoperative not defined	4	Aphakic	2	1	3
Pseudophakic with IOL in <b>anterior</b> chamber vs. Phakic: Status pre- or intraoperative not defined	4	Anterior chamber	1	1	2
Pseudophakic with IOL in <b>posterior</b> chamber vs. Phakic: Status pre- or intraoperative not defined	4	Posterior chamber	1	1	2
Pseudophakic vs. phakic: Status pre- or intraoperative not defined	2	Pseudophakic	1	0	1
Aphakic or pseudophakic vs. phakic: Status pre- or intraoperative not defined	2	Aphakic or pseudophakic	2	0	2

\* Level of association: 4 = definitely associated, 3 = probably associated, 2 = possibly associated, 1 = not associated. (H) = heterogeneity

Abbreviations: (D)ALK = (deep) anterior lamellar keratoplasty, DLEK = deep lamellar endothelial keratoplasty, DMEK = descemet membrane endothelial keratoplasty, DS(A)EK = descemet stripping (automated) endothelial keratoplasty, ECCE = extracapsular cataract extraction, EK = endothelial keratoplasty, FED = Fuchs endothelial dystrophy, IOL = intraocular lens, IOP = intraocular pressure, PKP = penetrating keratoplasty