

Supplemental file 3. Overview of the characteristics of the 76 included studies

Publication	Prospective/ Retrospective	Number of patients	Time of follow-up (months)	Method of IOP measurement	Univariate/ multivariate	Type of surgery
(Sekhar et al. 1993)	Retrospective	185	14.5 months*	GAT, digital tonometer	Univariate	PKP
(Sihota et al. 1998)	Retrospective	747	23 months*	GAT, Shiotz tonometer	Univariate	PKP
(Borderie et al. 1999)	Prospective	40	12 months	Not defined	Univariate	PKP
(Redbrake and Arend 2000)	Retrospective	75	5 years	GAT	Univariate	PKP
(Franca et al. 2002)	Retrospective	228	17.14 months*	Not defined	Univariate	PKP
(Seitz et al. 2002)	Prospective	170	3.4 years*	GAT	Univariate	PKP
(Shimazaki et al. 2002)	Prospective	24	6 months [†]	Not defined	Univariate	PKP or DLEK
(Egrilmez, Sahin, and Yagci 2004)	Retrospective	76	KC + VKC 34.0; KC alone 41.0 months*	Not defined	Univariate	PKP
(Shimazaki et al. 2004)	Prospective	236	31.3 months*	Not defined	Univariate	PKP
(Al-Mohaimeed et al. 2007)	Retrospective	678	32.5 months*	Not defined	Univariate	PKP
(Bahar, Kaiserman, McAllum, et al. 2008)	Prospective	161	13.6 months*	Not defined	Univariate	PKP, DLEK, DSEK or DSAEK
(Bahar, Kaiserman, Srinivasan, et al. 2008)	Retrospective	71	12 months [†]	Not defined	Univariate	PKP
(Kaiserman et al. 2008)	Prospective	28	Stitch-assisted: 7.13; Forceps- assisted 12.8 months*	Not defined	Univariate	DSAEK
(Kaiserman, Bahar, and Rootman 2008)	Retrospective	25	5 years*	Not defined	Multivariate	PKP
(Bahar et al. 2009)	Prospective	63	6 months	Not defined	Univariate	DSAEK
(Cohen et al. 2009)	Retrospective	158	4-7 months	GAT, Tono-Pen	Univariate	PKP
(Fan et al. 2009)	Retrospective	48	12 months	GAT	Univariate	PKP
(Kaiserman et al. 2009)	Retrospective	87	At 12 months	Not defined	Univariate	PKP
(Rahman et al. 2009)	Retrospective	186	61 months*	Not defined	Univariate	PKP
(Vajaranant et al. 2009)	Retrospective	400	6 months	GAT, Tono-Pen, Pneumatonometer	Univariate	DSEK
(Wagoner and Ba-Abbad 2009)	Retrospective	464	With VKC 58.6; without VKC 57.7 months*	Not defined	Univariate	PKP
(Wagoner et al. 2009)	Retrospective	910	At least 3 months	Not defined	Univariate	PKP
(Allen et al. 2010)	Retrospective	57	11.38 months	GAT, Pneumatonometer	Both	DSAEK
(Karadag et al. 2010)	Retrospective	729	Early and late (not further)	Not defined	Univariate	PKP

			defined)			
(Price et al. 2010)	Retrospective	167	1 year	Not defined	Univariate	DSAEK
(Wandling et al. 2010)	Retrospective	80	27.1 months*	Tono-Pen	Univariate	DLEK
(Mashor et al. 2011)	Retrospective	36	DALK 17.83; IEK 11.3 months*	Not defined	Univariate	DALK, FLEK
(Yildirim et al. 2011)	Retrospective	115	38.9 months*	Tono-Pen	Univariate	PKP
(Ang, Mehta, Anshu, et al. 2012)	Retrospective	241	1 year	Not defined	Univariate	PKP, DSAEK
(Ang, Mehta, Sng, et al. 2012)	Retrospective	362	3 months	Not defined	Univariate	PKP, ALK
(Gaster, Dumitrascu, and Rabinowitz 2012)	Retrospective	116	6 months	Not defined	Univariate	PKP
(Li et al. 2012)	Retrospective	116	2 years	Not defined	Univariate	PKP
(Musa et al. 2012)	Retrospective	59	55.6 months*	GAT, Tono-Pen	Univariate	DALK
(Ozeki et al. 2012)	Retrospective	46	6 months*	GAT, noncontact tonometer	Univariate	DSEK
(Chan et al. 2013)	Retrospective	324	3 years	GAT, Tono-Pen	Both	DSAEK
(Huber et al. 2013)	Retrospective	160	6 months	GAT, digital palpation	Univariate	PKLP
(Maier et al. 2013)	Retrospective	59	437 days*	GAT	Univariate	DSEK
(Moisseiev et al. 2013)	Retrospective	53	12 months	GAT	Univariate	PKP, DSAEK
(Nguyen et al. 2013)	Retrospective	298	1.85 years*	Tono-Pen	Univariate	DSAEK
(Zhang, Wu, and Yao 2013)	Retrospective	115	DALK 46.9; PKP 60.2 months*	Not defined	Univariate	DALK, PKP
(Acar, Muftuoglu, and Acar 2014)	Prospective	44	6 months [†]	GAT	Univariate	DSAEK
(Ang, Ho, et al. 2014)	Retrospective	113	3 years	Not defined	Univariate	PKP, EK
(Ang, Li, et al. 2014)	Retrospective	132	1 year	Not defined	Univariate	DSAEK
(Blumenthal, Frucht-Pery, and Solomon 2014)	Retrospective	146	24.4 months*	GAT	Both	PKP
(Chaurasia et al. 2014)	Retrospective	451	6 months	Not defined	Univariate	DMEK
(Maier et al. 2014)	Retrospective	117	12 months	GAT, Pneumatonometer	Multivariate	DMEK
(Price et al. 2014)	Prospective	264	12 months	GAT	Univariate	DMEK
(Sharma, Sharma, et al. 2014)	Retrospective	445	32 months*	GAT	Both	PKP
(Sharma, Jain, et al. 2014)	Retrospective	506	26.7 months*	Not defined	Univariate	PKP
(Shehadeh Mashor et al. 2014)	Retrospective	33	Zig Zag 13.24; Top Hat: 14.14 months*	Not defined	Univariate	PKP
(Chen et al. 2015)	Prospective	108	Foreign 301; domestic: 326 days*	Not defined	Univariate	PKP
(Maier et al. 2015)	Retrospective	112	658 days*	GAT	Univariate	PKP, DSAEK
(Muller et al. 2015)	Retrospective	176	1 year	GAT, DCT	Univariate	DSAEK

(Price et al. 2015)	Prospective	167	36 months	GAT	Univariate	DMEK
(Tannan et al. 2015)	Retrospective	41	18.3 months*	Not defined	Univariate	DSAEK
(Borderie et al. 2016)	Retrospective	1657	10 years	GAT	Both	PKP, ALK, DSAEK
(Huang et al. 2016)	Retrospective	116	5 years	Pneumatonometer, GAT, Tono-Pen	Multivariate	DALK
(Nakatani and Murakami 2016)	Retrospective	90	2 years	Not defined	Univariate	DSAEK
(Sandhu et al. 2016)	Retrospective	61	12 months	GAT, Tono-Pen	Univariate	DSEK
(Schaub et al. 2016)	Retrospective	529	12 months	Not defined	Univariate	DMEK
(Sharma et al. 2016)	Retrospective	71	24 weeks	GAT, Pneumatonometer	Univariate	DSEK
(Soh et al. 2016)	Retrospective	828	5 years	Not defined	Univariate	DSAEK, PKP
(Kaleem et al. 2017)	Retrospective	379	1 year	GAT, Tono-Pen	Both	DSAEK
(Khattak et al. 2017)	Retrospective	183	DALK 28.06; PKP 29.29 months*	Not defined	Univariate	PKP, DALK
(Kocluk, Sukgen, and Burcu 2017)	Retrospective	54	PKP 14; DALK 14.8 months*	GAT	Univariate	PKP converted from DALK, PKP
(Phillips et al. 2017)	Retrospective	132	6 months [†]	Not defined	Univariate	DMEK
(Schaub et al. 2017)	Retrospective	854	6 months [†]	Icare	Univariate	DMEK
(Treder, Alnawaiseh, and Eter 2017)	Retrospective	59	3 months [†]	GAT	Univariate	DALK
(Yuksel et al. 2017)	Prospective	71	1 year	GAT, Tono-Pen	Univariate	DALK
(Infantes Molina et al. 2018)	Retrospective	98	2 years [†]	GAT	Univariate	PKP, DALK
(Khairallah 2018)	Retrospective	45	6 months [†]	Tono-Pen	Univariate	RE-PKP, DSEAK
(Raj, Dhasmana, and Bahadur 2018)	Retrospective	155	6 months	Applanation tonometer or Tono-Pen	Both	PKP
(Singar-Ozdemir et al. 2018)	Retrospective	200	6 months	Not defined	Univariate	PKP
(Srujana et al. 2018)	Prospective	32	18,4 months*	Not defined	Univariate	RE-PKP
(Zheng et al. 2018)	Retrospective	3098	1 year	Not defined	Univariate	PKP, EK, ALK
(Huang et al. 2019)	Retrospective	540	1 year	Not defined	Univariate	DALK

[†] IOP or glaucoma was measured at the indicated point of time, * IOP or glaucoma was measured at any point during the indicated *mean* time of follow-up, in all other cases IOP or glaucoma was measured at any point within the indicated time of follow-up.

Abbreviations: (D)ALK = (deep) anterior lamellar keratoplasty; DCT = dynamic contour tonometer; DLEK = deep lamellar endothelial keratoplasty; DLKP = deep lamellar keratoplasty; DMEK = descemet membrane endothelial keratoplasty; DS(A)EK = descemet stripping (automated) endothelial keratoplasty; EK = endothelial keratoplasty; GAT = goldmann applanation tonometer; FLEK = femtosecond laser enabled keratoplasty; KC = keratoconus; PKP = penetrating keratoplasty; VKC = vernal keratoconjunctivitis