

Abstracts of Asian Research Published in the International Literature

Is the Current Eye Care Policy Adequate in India?

India's National Programme for Control of Blindness focuses almost exclusively on cataracts, based on a national survey from the 1980s that reported that cataracts caused 80% of the blindness in India. No recent population-based data on the causes of blindness in India are available. These authors assessed the rate and causes of blindness among 2,954 people in an urban population in southern India. Eligible participants were interviewed and given a detailed ocular assessment, including visual acuity, refraction, slit lamp biomicroscopy, applanation intraocular pressure, gonioscopy, dilatation, grading of cataract, stereoscopic fundus assessment, and automated-threshold visual fields.

2,522 participants were assessed. 49 participants (all aged ≥30 years) were blind (presenting distance visual acuity <6/60 or central visual field <200 in the better eye). The rate of blindness among those aged ≥30 years or more, adjusted for age and sex, was 3.08% (95% CI 1.95-4.21). The causes are shown in table 1.

Much of the blindness in this Indian population was due to non-cataract causes. The previous national survey did not include detailed dilated-fundus assessment

and visual-field examination which could have led to overestimation of cataract as a cause of blindness in India. Policy makers in India should encourage well- designed population-based epidemiological studies on which a comprehensive long-term policy on blindness can be developed.

Dandona L, Dandona R, Naduvilath TJ. Is current eye-care-policy focus almost exclusively on cataract adequate to deal with blindness in India? *Lancet* 1998;**351**:1312-1316.

Central Corneal Thickness and Intraocular Pressure in a Mongolian Population

The purpose of this study was to quantify the variation of central corneal thickness (CCT) in an East Asian population and to examine its relationship to estimates of intraocular pressure (IOP) made with an applanation tonometer. The CCT of 1,242 residents of Hovsgol Province, Mongolia, aged 10 to 87 years, was measured using an optical pachymeter. IOP was measured using a Goldmann-type applanation tonometer in subjects ≥40 years old.

There was a highly significant decrease in CCT with age; 5 µm/decade in men and 6 µm/decade in women (both p < 0.0001). A highly significant positive correlation was identified between IOP and CCT. Linear regression analysis suggests that between the ages of 40 and 80 years, an increase in CCT of 10 µm is associated with an increase in IOP measurements of 0.18 mm Hg in right eyes and 0.24 mm Hg in left eyes. The authors calculate that interindividual differences in CCT may produce a difference in measured IOP of between 2.3 and 3.1 mm Hg.

Variation in CCT is a significant source of variation in IOP measurements between individuals. The authors suggest that measurement of corneal thickness should be considered when assessing IOP as a risk factor for glaucoma in East Asians.

Foster PJ, Baasanhu J, Alsbirk PH, et al. Central corneal thickness and intraocular pressure in a Mongolian population. *Ophthalmology* 1998;**105**:969-973.

Mitomycin-C and Postoperative Corneal Astigmatism

This study aimed to determine the effect of mitomycin-C (MMC) on postoperative corneal astigmatism in patients who underwent trabeculectomy or trabeculectomy, extracapsular cataract extraction, and intraocular lens implantation.

Using the vector analysis method, postoperative-induced astigmatism was measured in 76 eyes in 59 patients who underwent trabeculectomy or the triple procedure with or without the application of MMC. Postoperative-induced astigmatism corresponding to the 180° axis was compared between the 2 groups.

The patients who underwent trabeculectomy with or without MMC showed a mean induced astigmatism of -1.01 D and -2.63 D, respectively, after 1 month (p < 0.05), and 0.34 D and -1.42 D after 12 months (p < 0.05). Those patients who had the triple procedure with or without MMC showed a mean induced astigmatism of -1.81 D and -4.50 D, respectively, after 7 days (p < .05), and 1.73 D and -0.13 D, respectively, after 12 months (p < 0.05). The entire amount of postoperative against-the-rule astigmatic shift was similar between the group receiving MMC and those not receiving MMC, which reached a plateau after 3 months in the group not given MMC.

Table 1. Causes of blindness among urban Indian patients aged ≥30 years

Cause	%
Cataract	29.7
Retinal disease	17.1
Corneal disease	15.4
Refractive error	12.5
Glaucoma	12.1
Optic atrophy	11.0



However, the group receiving MMC showed continuous against-the-rule astigmatic shift until 12 months.

This study suggests that MMC induces less with-the-rule astigmatism in the early postoperative period and continuous against-the-rule shift after 3 months following a trabeculectomy or a triple procedure.

Hong YJ, Choe CM, Lee YG, *et al.* The effect of mitomycin-C on postoperative corneal astigmatism in trabeculectomy and a triple procedure. *Ophthalmic Surg Lasers* 1998;**29**:484-489.

Retinal Detachment After Transscleral Fixation of Posterior Chamber IOLs

To determine the incidence of and factors related to retinal detachment (RD) after transscleral suture fixation of posterior chamber intraocular lenses (PC IOLs), transscleral fixation of a PC IOL was performed in 122 eyes from January 1990 to December 1992. The occurrence of RD was noted and its association with preoperative, intraoperative, and postoperative factors evaluated. The type and location of retinal tears, extent of detachment, and need for reattachment surgery were recorded.

Six eyes (4.9%) developed RD, 5 in the primary implantation group (n = 62) and 1 in the secondary implantation group (n = 60); the difference between the groups was not statistically significant. The factors predisposing to RD were myopia greater than -1.0 D (p = 0.03) and postoperative vitreous haemorrhage (p = 0.001). There was no significant difference in the incidence of RD in eyes having transscleral fixation in either a primary or secondary procedure and those having secondary lens implantation using a different IOL type or surgery with no lens implanted.

These authors concluded that the incidence of RD in patients having transscleral PC IOL fixation after vitreous loss was not significantly different from that in other studies not using transscleral PC IOL fixation with vitreous loss.

Lee JG, Lee JH, Chung H. Factors contributing to retinal detachment after transscleral fixation of posterior chamber intraocular lenses. *J Cataract Refract Surg* 1998;**24**:697-702.

Surgically-induced Astigmatism

To compare the corneal astigmatic changes induced by clear corneal incisions with those induced by scleral tunnel frown incisions, both from a temporal approach, in sutureless cataract surgery, 120 eyes were divided into 2 groups of 60 eyes based on incision type. All patients had examinations with an autokeratometer preoperatively and at 1 week, and 1, 3 and 6 months postoperatively.

Simple subtraction of the scalar analysis in each group showed minimal astigmatic changes, although the standard deviation of astigmatic change was greater in the clear corneal incision group. The mean vector analysis of surgically-induced astigmatism in the scleral frown incision group was 0.69, 0.75, 0.72 and 0.61 D at 1 week and 1, 3 and 6 months, respectively. In the clear corneal incision group, this was 1.55, 1.12, 0.93 and 0.92 D at the same intervals. In the scleral frown incision group, Naeser's polar value also showed minimal changes in polar astigmatism throughout the study, while in the clear corneal incision group, it showed a mean with-the-rule (WTR) astigmatic shift of +0.73, +0.22, +0.13 and +0.08 D at 1 week and 1, 3 and 6 months, respectively.

Corneal stability was achieved with minimal astigmatic change 1 week after scleral frown incisions, while clear corneal

incisions induced greater WTR astigmatism with delayed stabilisation 1 to 3 months postoperatively.

Huang FC, Tseng SH. Comparison of surgically induced astigmatism after sutureless temporal clear corneal and scleral frown incisions. *J Cataract Refract Surg* 1998;**24**:477-481.

Registration of New Blindness in Singapore

Data on causes of blindness in Singapore have been gathered yearly since 1950. The blind register is maintained by the Singapore Association of the Visually Handicapped (SAVH), based on reports from practising ophthalmologists in government institutions. During the past 4 decades (from 1950 to 1990), analyses of the causes of blindness have been published by various local authors, quoting data from the blind register. These reports show that the pattern of blindness reflects the trend already observed in developed countries, with a shift from infections to congenital and age-related causes. This trend is in keeping with the impact of affluence on the economic and social environment, resulting in better health services and the prevention of avoidable diseases. Updated but hitherto unpublished blind registrations for 1985 to 1995 confirm this trend. The primary causes of blindness in 1995 are shown in table 2.

Lim KH. Registration of new blindness in Singapore for 1985-1995. *Singapore Med J* 1998;**39**:104-106.

Table 2. The primary causes of blindness in Singapore in 1995

Cause	%
Retinal disease	57.6
Congenital and developmental disorders	14.7
Optic atrophy	9.3
Glaucoma	8.6
Minor causes	1

