

Abstracts of Asian research published in the international literature

Cataract in Patients with Leprosy in Korea

Cataract is the leading cause of blindness in patients with leprosy. There is no population-based information on the cataract surgical coverage, barriers to use of surgical services, and outcome of surgery in these patients. This study aimed to determine the effectiveness of a cataract programme in a cured leprosy population in South Korea. The population consisted of residents of 6 leprosy resettlement villages in central South Korea. All residents were invited to participate in a study of eye disease and were interviewed regarding use of surgical services and reasons for not using these services.

The cataract surgical coverage in this population was 55.4% when <6/18 was used as the cut off and increased to 78.3% when the cut off was <6/60. Barriers reported by patients included being told by the doctor that the cataract was not mature and a perception by the patient that there was no need for surgery. Among patients who had aphakic surgery, 71% remained still blind in the operative eye, while among patients who had pseudophakic surgery, 14% remained blind (presenting vision). Blindness in patients with pseudophakia could be reduced to 3% with spectacle correction.

Cataract prevalence in patients with will increase as life expectancy continues to increase. Leprosy control programmes will need to develop activities aimed at reducing the burden of cataract. Recommendations include establishing collaborative agreements with ophthalmological services to provide high quality intraocular lens surgery for these patients, training of health care workers to identify and refer patients in need of surgery, monitoring the uptake of

cataract surgery among patients needing the services, and monitoring the outcome of surgery to improve refractive outcome.

Courtright P, Lewallen S, Tungpakorn N, et al. Cataract in leprosy patients: cataract surgical coverage, barriers to acceptance of surgery, and outcome of surgery in a population based survey in Korea. *Br J Ophthalmol* 2001;85:643-647.

Small Incision Trabeculectomy for Glaucoma Surgery in Indian Eyes

The purpose of this study was to evaluate the potential advantages and disadvantages, success rate, and complications of small incision trabeculectomy for glaucoma surgery, which includes the formation of a filtration fistula without any dissection of the Tenon's capsule, as an alternative to trabeculectomy with or without pharmacological wound modulation. Small incision trabeculectomy was performed in 40 glaucomatous eyes through a 2.5 mm limbal incision and intraocular pressure (IOP) was monitored for 12 months.

The mean postoperative IOP at 12 months follow-up was significantly lower than the mean preoperative IOP (Table 1). Thirty six eyes (90%) had IOPs of less than 22 mm Hg without antiglaucoma medications at the end of the 12-month follow-up period. Blebs were pale and diffusely elevated. No serious complications were encountered.

Small incision trabeculectomy is a low-cost and safe alternative to conventional trabeculectomy that effectively reduces IOP.

Table 1. Mean pre- and postoperative intraocular pressure following small incision trabeculectomy.

| | Preoperative | 12 months postoperative |
|------------------------------|---------------|-------------------------|
| Intraocular pressure (mm Hg) | 30.20 ± 10.70 | 16.60 ± 5.93 |

The use of a small 2.5 mm incision which obviates the dissection of the Tenon's capsule and subsequent subconjunctival fibrosis, the absence of requirement of any sophisticated instruments, and the absence of any major complications encountered with the use of anti-metabolites make this a suitable procedure for glaucomatous eyes needing filtration surgery.

Das JC, Sharma P, Chaudhuri Z, Bhomaj S. Small incision trabeculectomy: experiences with this new procedure for glaucoma surgery in Indian eyes. *Acta Ophthalmol Scand* 2001;79:394-398.

Retinopathy Associated with a Microsatellite at 5' End of the Aldose Reductase Gene in Diabetes

Recent experimental data suggest that a microsatellite polymorphism at 5' end of the aldose reductase gene may be associated with the development of diabetic retinopathy. In this study, the allele distribution of the polymorphism in 384 Hong Kong Chinese patients who had late-onset (age at diagnosis ≥35 years) type 2 diabetes, but no clinical evidence of cataract was examined.

Approximately 17% of patients (n = 64) had retinopathy. The patients with retinopathy were older (60 ± 9 years vs 52 ± 11 years, p < 0.01) and had higher HbA_{1c} (8.9 ± 2.2% vs 7.7 ± 2.0%, p < 0.01 with adjustment for age) than those without retinopathy. 10 microsatellite alleles were detected and allele Z-4 was overrepresented in those with retinopathy (9% vs 4%, p < 0.05). There were no significant differences in allelic distributions of the major alleles Z+2, Z, and Z-2, which accounted for more than 80% of the overall frequency, between



the 2 groups of patients. Using multiple logistic regression analysis, it was found that age ($p < 0.01$) and HbA_{1c} ($p < 0.05$) were associated with retinopathy.

In conclusion, these data suggest that the occurrence of diabetic retinopathy in the Chinese population may be influenced by clinical and metabolic factors. The aldose reductase gene may be implicated, but is not likely to play a major role.

Lee SC, Wang Y, Ko GT, et al. Association of retinopathy with a microsatellite at 5' end of the aldose reductase gene in Chinese patients with late-onset Type 2 diabetes. *Ophthalmic Genet* 2001;**22**:63-67.

Acute Primary Angle Closure Glaucoma in Hong Kong

Patients with acute primary angle closure glaucoma (PACG) presenting between 1 March 1998 and 29 February 2000 were enrolled in a prospective study to determine the incidence of acute PACG in the Hong Kong Chinese population, and to identify risk factors for this condition. Demographic data, presenting symptoms and signs, temporal details of the presentation, and precipitating factors were recorded. The crude regional incidence was calculated according to the Hong Kong population census of 1991 and the age-specific incidence was calculated.

Seventy-two patients (72 eyes) with acute PACG were recruited. The crude incidence was 10.4/100,000/year in the population aged 30 years and older. Patients at higher risk of acute PACG were those aged 70 years or older (age-specific incidence, 58.7 per 100,000 per year) and females, who had a relative risk of 3.8 compared with males (95% confidence interval, 1.7-8.4). Only 4 patients (5.6%) had a positive family history of acute PACG. Seventeen patients (23.6%) were noted to have an upper respiratory tract infection before the attack, and 25 patients (34.7%) had taken antitussive agents. There was a statistically significant

inverse correlation between the monthly attack rate and the monthly rate of influenza (Spearman's rank correlation coefficient = -0.388; $p = 0.031$).

There is a high incidence of acute PACG among Chinese residents of Hong Kong, with elderly females at highest risk. A significant proportion of patients reported upper respiratory tract infection or the use of antitussive medication prior to the episode of PACG.

Lai JS, Liu DT, Tham CC, et al. Epidemiology of acute primary angle-closure glaucoma in the Hong Kong Chinese population: prospective study. *Hong Kong Med J* 2001; **7**:118-123.

Dropped Nucleus During Phacoemulsification

A retrospective analysis was performed to study the risk factors and management of posteriorly dislocated crystalline lenses during phacoemulsification at a teaching institution. The study included all patients undergoing phacoemulsification procedures performed by experienced and inexperienced surgeons during a 7-year period. The incidence, risk factors, role of surgical experience, mode of management, and the final outcome of posteriorly dislocated lens nuclei were evaluated.

Of a total 11,343 phacoemulsification procedures performed between 1993 and 1999, the nucleus was dropped in 38 eyes (0.3%). Two patients with a dropped nucleus were referred from an outside practice. The incidence of dropped nucleus for experienced surgeons (22/8671; 0.2%) was significantly lower than that for inexperienced surgeons (16/2672; 0.6%, $p = 0.007$). Sixteen of the 22 patients with dropped nucleus (72.7%) in the experienced surgeon group and 1 of 16 (6.3%) in the inexperienced surgeon group had risk factors ($p = 0.0005$). Nucleus removal was performed using vitreoretinal procedures in 39 eyes; 1 eye with a dropped epinucleus was managed conservatively. The final best corrected

visual acuity was 20/40 or better in 21 eyes (53.8%).

The incidence of dropped nucleus was more frequent with inexperienced surgeons, even though experienced surgeons operated on more patients with predisposing risk factors. Modern vitreoretinal procedures reduce morbidity and improve the visual outcome.

Aasuri MK, Kompella VB, Majji AB. Risk factors for and management of dropped nucleus during phacoemulsification. *J Cataract Refract Surg* 2001;**27**:1428-1432.

Age-related Cataract: Characterisation of a Novel Galactokinase Variant

Galactokinase (GALK) deficiency is an autosomal recessive disorder characterised by hypergalactosaemia and cataract formation. Through mass screening of new-born infants, a novel and prevalent GALK variant (designated here as the 'Osaka' variant) associated with an A198V mutation in 3 infants with mild GALK deficiency has been found. GALK activity and the amount of immunoreactive protein in the mutant were both 20% of normal construct in expression analysis. The K(m) values for galactose and ATP-Mg(2+) in erythrocytes with homozygous A198V were similar to those of the healthy adult control subjects.

A population study for A198V revealed prevalences of 4.1% in Japanese people and 2.8% in Koreans, a lower incidence in Taiwanese and Chinese populations, no incidence in blacks and Caucasians from the USA, and a significantly high frequency (7.8%; $p < 0.023$) in Japanese individuals with bilateral cataract. This variant probably originated in Japan and Korea and is one of the genetic factors that causes cataract in elderly individuals.

Okano Y, Asada M, Fujimoto A, et al. A genetic factor for age-related cataract: identification and characterization of a novel galactokinase variant, "Osaka," in Asians. *Am J Hum Genet* 2001;**68**:1036-1042.

