Current Trends in Cataract Surgery in Thailand - 2004 Survey

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Objectives: *To survey and investigate the current trend of cataract surgery in Thai ophthalmologists in 2004.*
Material and Method: *Questionnaires were sent to 600 ophthalmologists who were the members of the Ophthalmological Society and Royal Colleges of Ophthalmologists of Thailand. Data received from 248 (41.3%) of the recipients were analyzed and compared with those from the previous survey.*
Results: *The majority of respondents were male (63.3%) while 36.7% were female. In cataract surgery, 99.2% were still doing cataract surgery, the average number of cataract surgery procedures per surgeon per month was 25.6, 89.8% preferred phacoemulsification, and 42.5% preferred acrylic lens. The posterior capsular tear was the most common complication.*
Conclusion: *There are trends toward more cataract surgical procedures performed by a surgeon, increasing preference of topical anesthesia, small incision wound and foldable acrylic lenses which reflected the popularity of phacoemulsification.*

Keywords: *Cataract, Intraocular lenses, Phacoemulsification, Extracapsular cataract extraction (ECCE), Intracapsular cataract extraction (ICCE)*

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Cataract extraction is the most successful procedure for cataract treatment and the most frequently performed operation in patients over 65 years of age[1]. With the rapid evolving surgical techniques and instrumentations, a clear understanding of the current situation and future trends in these fields has become increasingly important[2].

In 2000, the authors have conducted mail surveys of members of the Ophthalmological Society and Royal Colleges of Ophthalmologists of Thailand[3]. Because the number of both surgical procedures and surgeons are growing, this current study represents the second such survey on cataract surgical practices in Thailand.

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Material and Method

In November 2004, the authors mailed questionnaires with stamp-reply envelopes to 600 Ophthalmological Society and Royal Colleges of Ophthalmologists of Thailand members. To maintain the confidentiality of the respondents, returned envelopes and questionnaires were not marked or labeled. There was no financial reward for returning the questionnaires.

Descriptive statistical analysis was performed on the results

Results

Replies were received from 248 (41.3%) respondents prior to the cutoff date of 28 February 2005, 63.3% (157) were male and 36.7% (91) were female.

Demographics

The majority of respondents were in the 30-39 and 40-49 year age groups, accounting for 75% of all

respondents, 17.3% were between 50 and 59 years, 4.8% were in the 20-29 years age group, and 2.9% were over 60 years.

The geographic distribution of the respondents is shown in Fig. 1. Ninety-five respondents (38.3%) were practicing in Bangkok.

Surgery scoreboard

Two hundred and forty six respondents (99.2%) were doing cataract surgery while 0.8% were not. The volume profile for cataract surgery showed that 28.8% of the surgeons were doing 25-29 procedures, 27.3% doing 15-24 procedures, and 23.2% doing 5-14 procedure per month (Fig. 2). The average number of cataract surgery procedures per surgeon per month was 25.6, compared to 20.1 of the previous report in 2000[3].

Cataract extraction

Preferred techniques of cataract extraction are shown in Fig. 3. Phacoemulsification grew in popularity. Two hundred and twenty one respondents (89.8%) who do cataract surgery were doing phacoemulsification while 10.2% were not. Two hundred and eight respondents (84.6%) who do cataract surgery were doing extracapsular cataract extraction (ECCE) while 15.4% were not. Thirty-four respondents (13.8%) were still doing intracapsular cataract extraction (ICCE). An estimate of the annual cataract procedures from all respondents was derived from the monthly volume. There were 75492 cataract procedures, 55619 procedures were phacoemulsification and 19873 procedures were ECCE yearly.

Anesthesia techniques

In phacoemulsification, the topical anesthesia was used by 31.9% of respondents, the topical and subconjunctival anesthesia by 25.4%, and the retrobulbar without a facial block by 17.4% (Table 1). The percentage of surgeons using topical anesthesia has significantly increased when compared with the previous study[3].

In ECCE cases, the retrobulbar with a facial block was used by 50.2% of respondents, the peribulbar block was by 19.6% of respondents, and the retrobulbar without a facial block by 12.5%.

In ICCE, the retrobulbar with a facial block was used by 59.2% of respondents, the retrobulbar without a facial block by 21.9%, general anesthesia was used by 10.8%.

Most of the respondents (65.3%) in all groups give the actual eye block (topical and/or needle) themselves while 23.9% of respondents by nurse anesthetists, and 10.8% of respondents by anesthesiologists.

Cataract surgery techniques

With cataract incision site, most of respondents (92.2%) in the phacoemulsification group preferred clear cornea incision. An increased percentage of clear cornea incision is demonstrated in Table 2. Most of the respondents (82.6%) in ECCE group preferred to make corneoscleral incision. while 82.1% in ICCE group preferred to make corneoscleral incision. Suturing technique used by the respondents is shown in Table 3. Most of the respondents in the ECCE and ICCE group used interrupted radial technique in 85.7% and 83.1% respectively. The no suture technique was

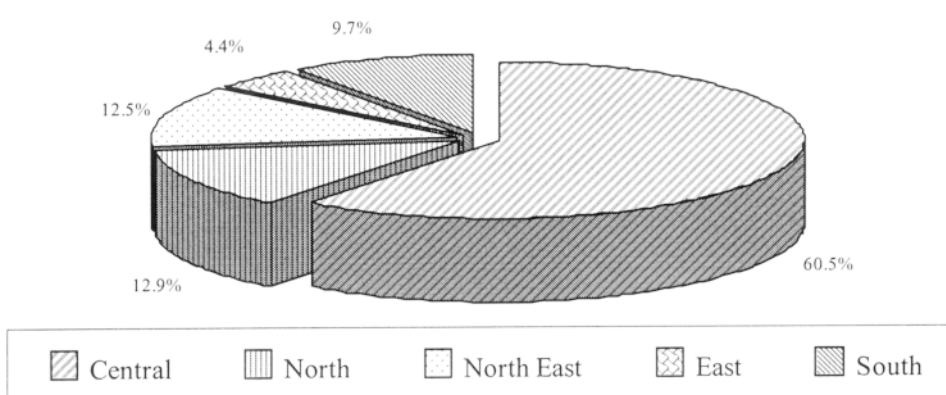

Fig. 1 Geographic distribution of the respondent ophthalmologists

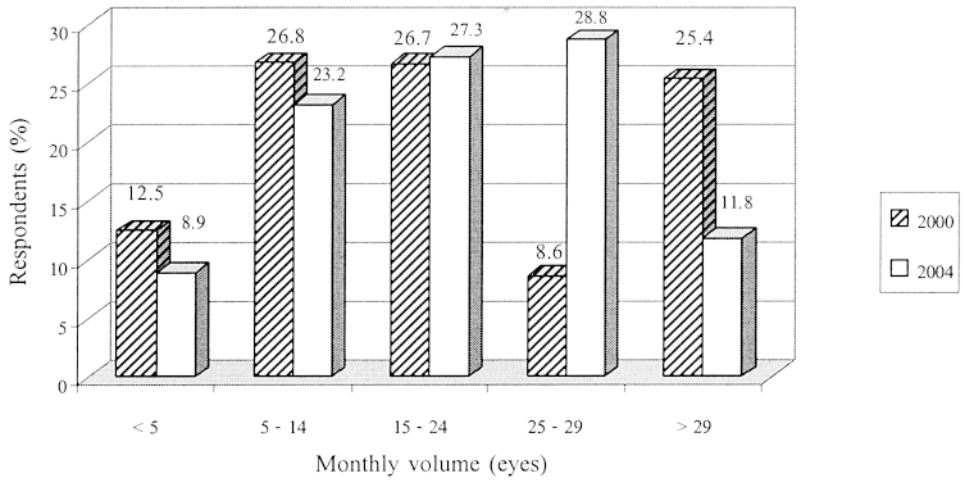

Fig. 2 Cataract surgery volume per month

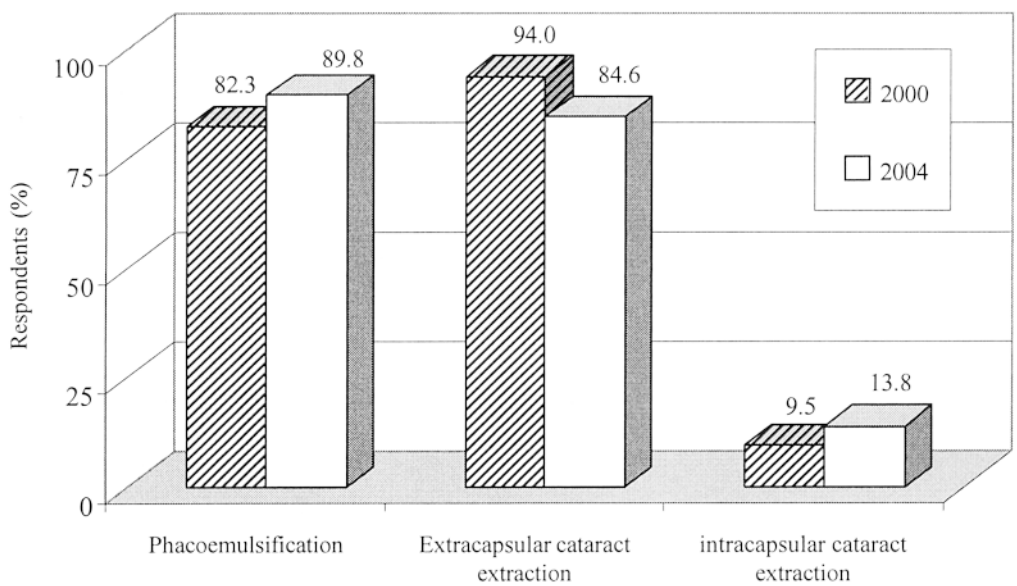

Fig. 3 Preferred cataract extraction technique

the main wound suturing technique in phacoemulsification for 54.1% of the respondents in 2004.

Most of the respondents (59.0%) in the ECCE group used can-opener capsulotomy and capsulorhexis was used by 41.0% of respondents. Two hundred and thirty of the respondents (93.4%) in the ECCE group preferred capsulotomy by needle.

In the phacoemulsification group, capsulorhexis was preferred by 97.7% of respondents while can-opener capsulotomy by 2.3%. One hundred and seven (43.5%) in phacoemulsification group preferred capsulotomy by needle (Fig. 4, 5).

The incision locations used by the respondents are shown in Table 4. Most of respondents (79.8%) in the ECCE group incised at 12 o'clock region while most of the respondents (80.3%) in the phaco-emulsification group preferred to incise at the temporal region.

Hydrodissection was used in 69.8% of the respondents in the ECCE group and 99.5% of the res-

Table 1. Anesthesia technique used in Phaco, ECCE, ICCE (Phaco: Phacoemulsification, ECCE: Extracapsular cataract extraction, ICCE: Intracapsular cataract extraction)

Type of anesthesia	Respondents (%)					
	Phaco		ECCE		ICCE	
	2000	2004	2000	2004	2000	2004
topical	10.0	31.9	1.0	7.1	0.0	0.0
topical/subconjunctiva	14.0	25.4	1.0	9.1	0.0	0.0
retrobulbar block without facial block	24.0	17.4	18.0	12.5	9.1	21.9
retrobulbar block with facial block	30.0	12.9	58.0	50.2	54.5	59.2
peribulbar	17.0	10.7	17.0	19.6	13.6	6.1
general	0.0	0.5	0.0	0.5	4.6	10.8
others	4.0	1.2	2.0	1.0	9.1	2.0
no reported	1.0	0.0	3.0	0.0	9.1	0.0

Table 2. Cataract incision site (Phaco: Phacoemulsification, ECCE: Extracapsular cataract extraction, ICCE: Intracapsular cataract extraction)

Incision site	Respondents (%)					
	Phaco		ECCE		ICCE	
	2000	2004	2000	2004	2000	2004
scleral tunnel	24.6	4.1	0.0	0.0	0.0	0.0
clear cornea	67.0	92.2	0.0	0.0	0.0	0.0
anterior corneoscleral	0.0	0.0	6.4	9.6	4.6	8.9
corneoscleral	5.8	3.2	67.4	82.6	72.7	82.1
posterior sclera	0.0	0.0	8.7	7.8	9.1	9.0
others	2.1	0.5	1.4	0.0	0.0	0.0
no reported	0.5	0.0	16.1	0.0	13.6	0.0

Table 3. Wound suturing technique (Phaco: Phacoemulsification, ECCE: Extracapsular cataract extraction, ICCE: Intracapsular cataract extraction)

Suturing techniques	Respondents (%)					
	Phaco		ECCE		ICCE	
	2000	2004	2000	2004	2000	2004
running	1.6	0.5	10.1	9.1	9.1	13.5
interrupted radial	35.1	35.1	83.9	85.7	77.3	83.1
horizontal	3.1	4.4	0.5	0.0	0.0	0.0
no suture	46.1	54.1	0.5	0.0	0.0	0.0
others	7.3	5.9	1.8	5.2	0.0	3.4
no reported	6.8	0.0	3.2	0.0	13.6	0.0

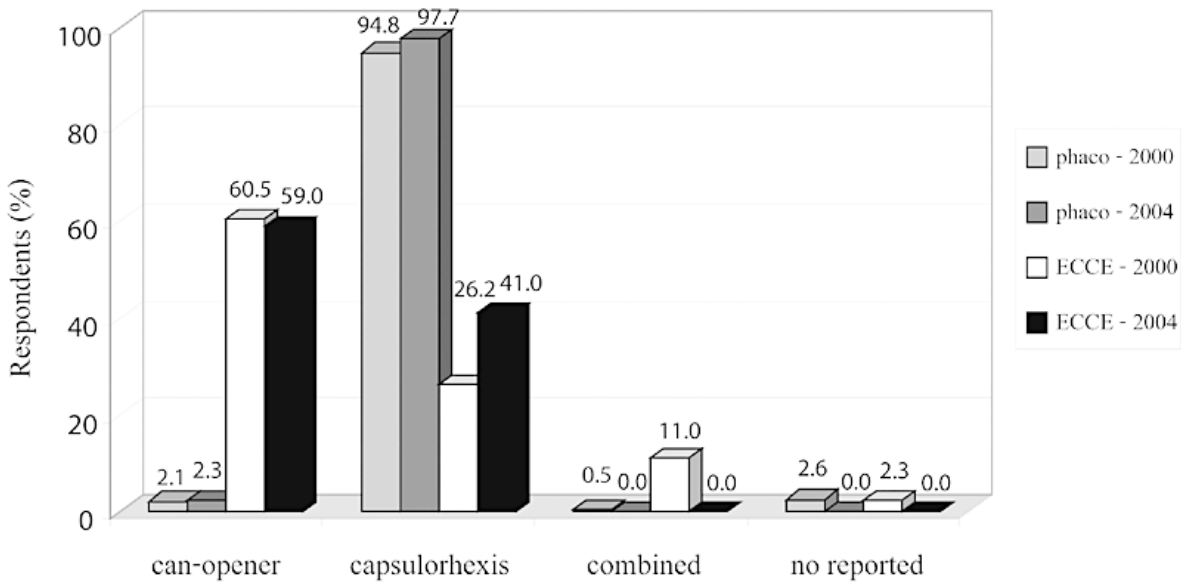

Fig. 4 Capsulotomy techniques (Phaco: Phacoemulsification, ECCE: Extracapsular cataract extraction)

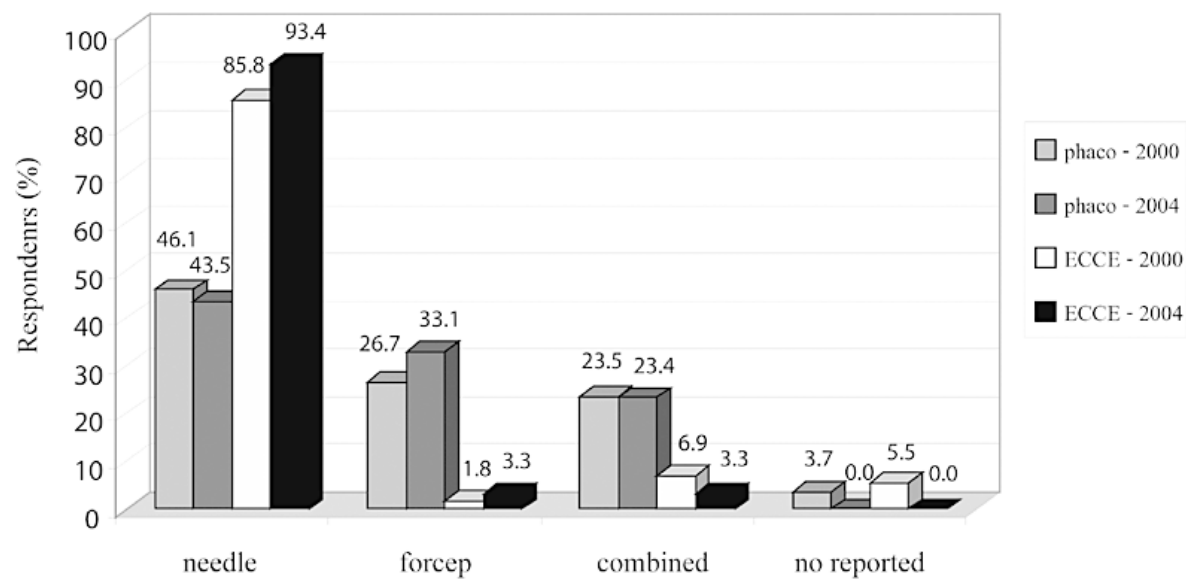

Fig. 5 Capsulotomy instruments (Phaco: Phacoemulsification, ECCE: Extracapsular cataract extraction)

pondents in the phacoemulsification group (Table 5).

Among the nucleofracture technique in the phacoemulsification group, the stop and chop is the most preferred technique (39.5%) followed with two section divide and conquer, four quadrants split, and sculpt and nibble till gone techniques 33.3%, 15.5%, and 2.3% respectively. However, 9.4% used other procedures not mentioned above.

Intraocular lenses

The percentage of surgeons using the acrylic lens has increased (69.8%) whereas the percentage of surgeons using polymethyl methacrylate (PMMA) 5.5 mm has decreased from the previous report[3] (Fig. 6).

Most respondents (85.9%) calculated intraocular lenses by A-scan, immersion technique by 13.7%, and estimated method by 0.4%.

Table 4. Placement of cataract incision (Phaco: Phacoemulsification, ECCE: Extracapsular cataract extraction)

Placement of cataract incision	Respondents (%)			
	Phaco		ECCE	
	2000	2004	2000	2004
12 o'clock	14.0	8.2	89.4	79.8
temporal	65.5	80.3	4.1	6.9
steepest K	12.6	9.9	0.5	1.2
oblique	3.7	1.6	2.3	12.1
others	2.6	0.0	0.5	0.0
no reported	1.6	0.0	3.2	0.0

Table 5. Hydrodissection (Phaco: Phacoemulsification, ECCE: Extracapsular cataract extraction)

Hydrodissection	Respondents (%)			
	Phaco		ECCE	
	2000	2004	2000	2004
not used	0.0	0.5	33.9	30.2
used	99.5	99.5	65.2	69.8
(subcapsular hydrodissection)	(38.4)	(48.9)	(31.7)	(54.0)
(intercortical hydrodissection)	(2.1)	(2.2)	(3.5)	(9.2)
(combined)	(44.8)	(47.8)	(33.1)	(27.6)
(not mentioned)	(14.7)	(1.1)	(31.7)	(9.2)
no reported	0.5	0.0	0.9	0.0

Two hundred and forty-five respondents (99.6%) used viscoelastics during surgery. One (0.4%) did surgery without viscoelastics. When asked what viscoelastic materials were used for cataract surgery, 60.9% chose sodium hyaluronate, 37.9% combination of sodium hyaluronate and chondroitin sulfate, and 1.2% methylcellulose.

One hundred and five respondents (42.7%) used miotics during surgery. One hundred and forty one (57.3%) did not. When asked what miotics were used for cataract surgery, 63.6% chose pilocarpine, 35.5% carbachol, and 0.9% acetylcholine chloride.

Preoperative care

Six respondents (2.4%) did not routinely use topical antibiotics but 97.6% used them prior to cataract surgery.

One hundred and eighty-six respondents (75.6%) did not used oral antibiotics prior to cataract surgery while 24.4% did.

One hundred and thirty-six respondents (55.3%) did not use topical nonsteroidal anti-inflammatory drugs (NSAID) before surgery, 44.7% used them prior to cataract surgery.

Postoperative care

Thirty-six respondents (14.6%) did not routinely use topical antibiotics but 85.4% used them after cataract surgery.

One hundred and fifty-nine respondents (64.7%) did not use oral antibiotics after cataract surgery while 35.3% did.

Two hundred and eight respondents (84.6%) did not use topical NSAID after surgery, but 15.4% used them.

Two hundred and thirty-nine respondents (97.2%) used topical steroid after surgery, 2.8% did not.

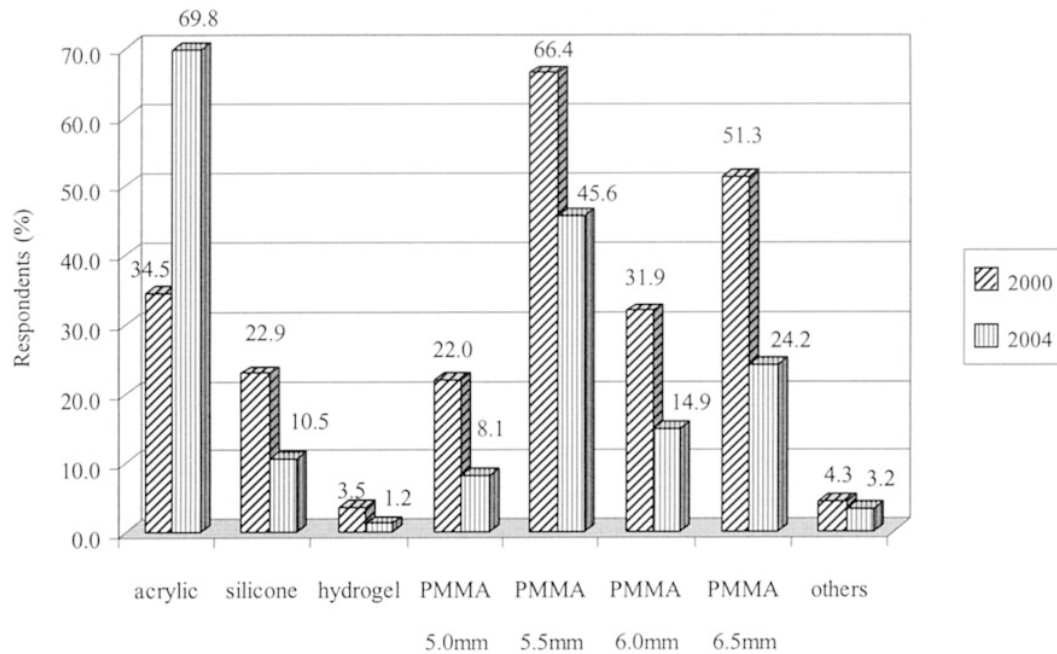

Fig. 6 Preferred intraocular lenses (PMMA: Polymethyl methacrylate)

Complications

One hundred and forty-nine (60.6%) surgeons reported that posterior capsular tear was the most common complication. While twenty surgeons (8.1%) reported corneal edema was the second most common complication. Other complications such as vitreous loss, zonulysis, iris prolapse, and conjunctival ballooning were also reported by respondents

Discussion

Because only two hundred and forty eight respondents in this survey had returned the questionnaires to us, results may not exactly reflect the opinions of all Thai ophthalmologists. The sampling population might have represented a group of ophthalmologists who are more active in the field of cataract surgery. This sample size with a response rate of approximately 41.3% was slightly lower than that our previous survey (45.7%)[3] and was higher than that in the ophthalmology manpower studies done by Worthen et al. in 1981[4] and practice styles and preferences of ASCRS member survey done by Leaming in 2000 (26%)[5]. However, the present survey covered a nearly similar group of surgeons[3] and newly graduated ophthalmologists, and thus,the authors believe that the present information describes the trend and direction of cataract surgery in Thailand. A longer term, continuing study would further define the direction of the medical profession.

The present survey has some weaknesses. Most of the questions which were presented in the questionnaires required the percentage from the responders. Moreover, some questions are in multiple choice form rather than open-ended form.

Acknowledgment

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การผ่าตัดต้อกระจกในประเทศไทย-สำรวจในปี พ.ศ. 2547

วินัย ชัยดรุณ, ณรงค์ ตั้งภากรณ์, ปิยะธิดา ปูรานิธี

วัตถุประสงค์: *เพื่อสำรวจและศึกษาแนวโน้มการผ่าตัดต้อกระจกในประเทศไทยปี พ.ศ. 2547*

วัสดุและวิธีการ: *ส่งแบบสอบถามจำนวน 600 ฉบับ ไปถึงจักษุแพทย์ซึ่งเป็นสมาชิกสมาคมจักษุแพทย์และราชวิทยาลัยจักษุแพทย์แห่งประเทศไทย ได้นำแบบสอบถามที่ตอบคืนมาจำนวน 248 ฉบับ (41.3%) มาวิเคราะห์และเปรียบเทียบกับการศึกษาที่ผ่านมา*

ผลการศึกษา: *ส่วนใหญ่ของผู้ตอบแบบสอบถามเป็นเพศชายร้อยละ 63.3 และเพศหญิงร้อยละ 36.7 จักษุแพทย์ที่ยังผ่าตัดต้อกระจกร้อยละ 99.2 จำนวนเฉลี่ยของการผ่าตัดต่อจักษุแพทย์ 1 ท่านต่อ 1 เดือนคือร้อยละ 25.6 โดยชอบวิธีการสลายต้อกระจกร้อยละ 89.8 ชอบเลนส์แก้วตาเทียมชนิดอาคริลิกร้อยละ 42.5 ผลแทรกซ้อนจากการผ่าตัดที่พบบ่อยที่สุดคือถุงหุ้มเลนส์ด้านหลังฉีกขาด*

สรุป: *มีแนวโน้มว่าจักษุแพทย์ทำการผ่าตัดต้อกระจกมากขึ้น และชอบใช้วิธีการหยอดยาชา การเปิดแผลที่เล็กและใช้เลนส์พับได้ชนิดอาคริลิก ซึ่งสะท้อนให้เห็นว่ามีความนิยมการผ่าตัดด้วยวิธีการสลายต้อกระจกมากขึ้น*