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Early lens extraction compared to standard treatment in acute primary angle closure

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Abstract

This is the protocol for a review and there is no abstract. The objectives are as follows:

To compare the efficacy as well as harms of early lens extraction versus standard treatment in patients with acute primary angle closure.

BACKGROUND

Description of the condition

Acute primary angle closure (APAC) is a potentially blinding condition and is treated as an ophthalmic emergency. It is characterized by obstruction to the outflow of aqueous humor (intraocular fluid) and consequent rise in the intraocular pressure (IOP). The obstruction may result from an anatomical predisposition of the eye or due to pathophysiologic processes in any part of the eye. The incidence of APAC is highest for countries in East Asia, followed by South East Asia and is lower for western countries. The reported rates range from five to 15 cases per 100,000 person-years (Erie 1997; Fujita 1996; Ivanisevic 2002; Lai 2001; Seah 1997; Teikari 1987; Wong 2000).

Presentation and diagnosis

An individual suffering from APAC typically presents to the emergency room with a red, painful eye, reduced vision and markedly elevated IOP (over 40 mmHg). However, the definition of APAC is not uniform. We have adopted the following criteria that were used in several recent articles to diagnose cases of APAC (Aung 2001).

1. Presence of at least two of the following symptoms: ocular or periocular pain (or both), nausea or vomiting (or both), or an antecedent history of intermittent blurring of vision with haloes.

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CONTRIBUTIONS OF AUTHORS

DC, EM and DF conceived the review question, designed the review and wrote the protocol.

DECLARATIONS OF INTEREST

None declared.

2. Presenting IOP of 21 mmHg or higher measured by Goldmann applanation tonometry.
3. Presence of at least three of the following signs: conjunctival injection, corneal edema (a condition where fluid accumulates in the cornea and causes the loss of transparency), mid-dilated unreactive pupil, and shallow anterior chamber depth.
4. Presence of an occluded angle in the affected eye, verified by gonioscopy.

Description of the intervention

Treatment of APAC should aim to reduce the acutely elevated IOP. As soon as IOP is controlled and sufficient corneal clarity is established (post-APAC), the next target is to attempt long-term IOP control, prevent recurrence of an acute attack and prevent progression to glaucoma. Post-APAC interventions aim to eliminate pupillary block, widen the angle and minimize residual appositional closure.

Lens extraction is a procedure in which the lens is removed by either extracapsular lens extraction or phacoemulsification with or without intraocular lens (IOL) implantation. Laser peripheral iridotomy (LPI) is the standard procedure in treating APAC during the post-acute stage. YAG or argon lasers (or both) are used to create a hole in the peripheral iris. This hole connects the anterior and posterior chambers and eliminates the differential pressure caused by pupillary block. Another alternative is to remove the lens at an early stage, which is defined as within six weeks of the acute attack. Theoretically, lens extraction will open the angle, hinder the formation of peripheral anterior synechiae (PAS) and improve long-term IOP control. Many of those will eventually require lens extraction for visually significant cataract at a later stage. The lens is removed using standard cataract surgery techniques (either extracapsular lens extraction or phacoemulsification) and replaced with a thinner intraocular lens (IOL) which substantially decreases relative pupillary block. Early lens extraction can be combined with goniosynechialysis in which an instrument is used to break mechanically the PAS that remain after surgery is completed, potentially adding even more trabecular outflow.

How the intervention might work

All patients presenting with APAC should immediately receive medical treatment to lower the IOP. Once the cornea is clear, LPI is the standard procedure at post-APAC stage to relieve pupillary block and prevent recurrence of the attack. Despite initial success, a high proportion of these patients developed an increase in IOP on long-term follow-up (Aung 2001). This may be due to extensive residual appositional closure after LPI, direct damage to the trabecular meshwork or the development of PAS as a result of the inflammatory response or prolonged angle closure during the acute attack.

The thickness of the lens also contributes to pupil block and APAC in a predisposed eye. The lens may narrow the angle by pushing the peripheral iris anteriorly; this effect may be greater when the lens is cataractous. This mechanism also may play a role in the development of long-term IOP elevation and glaucoma in eyes already treated with LPI. In patients with APAC, early lens extraction may have the advantage of deepening the anterior

chamber and widening the drainage angle. We will review the evidence systematically to assess the efficacy of early lens extraction versus standard treatment in patients with APAC.

Why it is important to do this review

APAC can lead to glaucoma and blindness. Acute elevation of the IOP creates great discomfort for patients and can cause significant and irreversible damage to the optic nerve in a short period of time. A high proportion of patients who have a favorable initial response after standard treatment later develop asymptomatic IOP elevation and vision loss. It is important to determine whether early lens extraction can reduce the IOP and preserve vision more effectively than standard treatment in the short- and long-term.

OBJECTIVES

To compare the efficacy as well as harms of early lens extraction versus standard treatment in patients with acute primary angle closure.

METHODS

Criteria for considering studies for this review

Types of studies—We will include all randomized controlled trials investigating interventions for APAC treatment. We will exclude observational studies, quasi-randomized controlled trials, non-randomized controlled trials and non-controlled trials.

Types of participants—We will include studies of adult patients (defined as more than 18 years of age) who were diagnosed with acute primary angle closure (APAC) in one or both eyes. Since the diagnostic criteria for APAC in the literature is not uniform (see Description of the condition), we will not exclude studies based on the APAC definition. Patients with glaucoma due to other causes, such as inflammation and prolonged use of steroids, are considered to have secondary glaucoma and will be excluded from this review. We will exclude studies that enrolled other types of glaucoma but did not report APAC patients separately.

For the purpose of this review, we will include eyes with or without cataract. We will not exclude studies of patients with a previous APAC attack but we will perform subgroup analysis on those with a first APAC attack and recurrence. There will be no restrictions with respect to gender, race or the number of participants.

Types of interventions—We will include studies comparing early lens extraction to any standard treatment for APAC eyes at the post-acute stage. The standard interventions of APAC include the individual or combined use of topical or systemic IOP-lowering agents or laser peripheral iridotomy.

Types of outcome measures

Primary outcomes: The primary outcome of this review will be IOP control defined as the proportion of participants achieving IOP lower than 22 mmHg at one year (or longer) after the acute attack.

Secondary outcomes: Secondary outcomes at one year or longer will include the proportion of participants who 1) need additional procedures, medications or both during follow-up, 2) develop visual field loss, 3) develop glaucomatous optic nerve appearance, 4) experience the recurrence of APAC, and the mean of 5) visual acuity, 6) IOP at various time points, 7) number of medications to control IOP, 8) the extent of PAS, 9) quality of life and 10) other self reported outcomes as reported in the included studies.

Adverse effects: We will report any side effects including the proportion of participants who experience posterior capsular rupture during cataract surgery, damage to the cornea from lens extraction, acute IOP rises immediately following lens extraction, and any other complications or blindness at one year or longer.

Search methods for identification of studies

Electronic searches—We will search the Cochrane Central Register of Controlled Trials (CENTRAL) (which contains the Cochrane Eyes and Vision Group Trials Register) (*The Cochrane Library*), Ovid MEDLINE, Ovid MEDLINE In-Process and Other Non-Indexed Citations, Ovid MEDLINE Daily, Ovid OLDMED-LINE, EMBASE, LILACS (Latin American and Caribbean Literature on Health Sciences), the *metaRegister* of Controlled Trials (*mRCT*) (www.controlled-trials.com), ClinicalTrials.gov (www.clinicaltrials.gov) and the WHO International Clinical Trials Registry Platform (ICTRP) (www.who.int/ictip/search/en). We will not use any date or language restrictions in the electronic searches for trials.

See: Appendices for details of search strategies for CENTRAL (Appendix 1), MEDLINE (Appendix 2), EMBASE (Appendix 3), LILACS (Appendix 4), *mRCT* (Appendix 6), ClinicalTrials.gov (Appendix 6) and the ICTRP (Appendix 7).

Searching other resources—We will scan all the bibliographies of all included articles for other relevant studies. We also will search the Science Citation Index on Web of Science to identify additional studies that may have cited trials included in this review. We will not handsearch any journals or conference proceedings for this review.

Data collection and analysis

Selection of studies—Two authors will review titles and abstracts independently using our inclusion criteria. We will exclude articles that do not: 1) report original research (e.g., review article, editorial), 2) report a randomized controlled trial, 3) include APAC patients, 4) report lens extraction interventions. We will grade each report as A: definite for inclusion, B: definite for exclusion, or C: unclear. In case of disagreement or ‘unclear’ classification, the final determination of inclusion or exclusion will be determined by group consensus. Studies labeled as ‘definite for exclusion’ by both authors will be excluded. We will retrieve the full text of potentially relevant articles. Two authors will independently assess full-text articles for inclusion and document the reasons for exclusion. Any disagreement will be resolved by group consensus.

Data extraction and management—Two authors independently will abstract data from included studies using a standard form that will be designed for this review purpose.

Abstracted data will be entered into RevMan 5 (RevMan 2011) by one author and verified by another author. We will resolve disagreements by group consensus. Since studies are frequently reported in more than one publication, we will extract information from multiple reports of a single study separately and then combine this across multiple data collection forms. Abstracted data will include the following:

Methods: We will collect study design (e.g., date of conduct, sample size, total study duration) and study methodology details (e.g., eligibility criteria, methods of randomization, allocation sequence concealment and masking).

Characteristics of participants: We will abstract total number randomized, setting, age, gender, country, baseline IOP, visual field and optic disc findings of the participants.

Interventions: We will record the details of the intervention in each group (e.g., type of lens extraction technique, drug class, dose, intensity and duration of therapy).

Outcomes: We will record outcome definitions, unit of measurement (eye or person), timing of measurement, effect measure and standard deviation.

Assessment of risk of bias in included studies—Two authors will assess the quality of included studies independently according to the guidelines in Chapter 8 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2011a). We will not mask authorship or journal name. We will evaluate the studies for the following criteria: sequence generation, allocation concealment, masking, incomplete outcome data, intention-to-treat analysis, selective reporting and other sources of bias (e.g. industry funding). We will grade each of the parameters as low, high or unclear risk of bias. Disagreements between review authors will be resolved by group consensus.

Measures of treatment effect—We will calculate a summary risk ratio for dichotomous outcomes including IOP control, additional procedures, development of visual field loss, development of glaucomatous optic nerve appearance and the recurrence of APAC. We will verify normality of continuous outcomes and calculate mean differences for the visual acuity, IOP at various time points, number of medications, the extent of PAS, quality of life and other self reported outcomes. We will calculate standardized mean differences if continuous outcomes are measured using different scales.

Unit of analysis issues—The unit of analysis will be eyes. We will refer to Chapter 16 of the *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1* (Higgins 2011b) and consult the Cochrane Eyes and Vision Group Editorial Base for guidance on unit of analysis issues such as the inclusion of trials that enroll both eyes of participants with bilateral APAC in addition to trials of unilateral APAC. We will also consult Higgins 2011b for guidance on the analysis of crossover trials.

Dealing with missing data—We will analyze participants as part of the treatment group to which they were assigned. If their baseline or follow-up data are missing, we will contact

the original investigators to request the missing data. If we do not hear back from the investigators within six weeks, we will analyze the data as reported in the included studies.

Assessment of heterogeneity—We will assess clinical and methodological heterogeneity by examining potential variations in participant characteristics (e.g., comorbidity, previous management), intervention (e.g., types of surgical technique, dose of topical medications and type of laser) and definitions of primary and secondary outcomes (e.g., timing, measurements).

We also will assess statistical heterogeneity by using a χ^2 test of heterogeneity and the I^2 statistic with an I^2 statistic $\geq 50\%$ suggesting significant statistical heterogeneity. We will examine the degree of overlap in the confidence intervals of included studies. Poor overlap also may suggest the presence of high heterogeneity.

Assessment of reporting biases—We will examine a funnel plot to assess publication bias if there are at least 10 studies included in the meta-analysis. We will interpret the asymmetry of the funnel plot in conjunction with study characteristics or other factors such as small-study effects. We also will assess other reporting biases such as language bias and selective outcome reporting bias.

Data synthesis—We will pool study-level data using a random-effects model. If the level of heterogeneity is high either clinically or statistically (I^2 statistic $\geq 50\%$), we will not pool study results and will instead provide a narrative summary. For studies with multiple therapeutic groups, we will include a pair-wise comparison only of intervention groups that address the review topic.

Subgroup analysis and investigation of heterogeneity—We will investigate heterogeneity in several ways. We will assess the included studies for clinical diversity (i.e., variation in patient population, inclusion criteria, dose or timing of intervention, etc.) and methodological diversity (i.e., differences in outcome definition or measurement, risk of bias) that may explain the findings. For clinical diversity we will consider several subgroup analyses including prior intervention (post LPI), types of lens extraction and history of prior APAC attack. We plan to perform a random-effects meta-analysis or no meta-analysis at all depending on the degree of heterogeneity.

Sensitivity analysis—We will perform sensitivity analyses to determine the impact of excluding studies with lower methodological quality, or industry funding.

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* Indicates the major publication for the study

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APPENDICES

Appendix 1. CENTRAL search strategy

- #1 MeSH descriptor Glaucoma, Angle-Closure explode all trees
- #2 MeSH descriptor Glaucoma explode all trees
- #3 (#2), from 1966 to 1989
- #4 (angle* near/3 closure*)
- #5 (angle* near/3 close*)

- #6 (Uncompensat* near/2 glaucoma*)
- #7 (Narrow* near/2 angle*)
- #8 (occlude* near/3 angle*)
- #9 Acute glaucoma*
- #10 (APAC or AACG or PACG or PACS)
- #11 pupillary block glaucoma*
- #12 (#1 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11)
- #13 MeSH descriptor Cataract Extraction explode all trees
- #14 (cataract* near/3 (extract* or aspirat* or operat* or remov* or surg* or excis* or implant*))
- #15 (lens* near/3 (extract* or aspirat* or operat* or remov* or surg* or excis* or implant* or emulsif*))
- #16 MeSH descriptor Phacoemulsification explode all trees
- #17 (Phakectom* or Zonulolys* or catarectom*)
- #18 (pha?oemulsif* or pha?o) or Capsulor?hexis or lensectom*
- #19 MeSH descriptor Capsulorhexis explode all trees
- #20 MeSH descriptor Trabeculectomy explode all trees
- #21 (Trabeculectom* or Trabeculoplast* or Trabeculotom* or Goniotom*)
- #22 surgery
- #23 (#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22)
- #24 MeSH descriptor Laser Therapy explode all trees
- #25 MeSH descriptor Lasers explode all trees
- #26 Laser*
- #27 (iridotom* or iridoplast* OR LPI)
- #28 MeSH descriptor Iridectomy explode all trees
- #29 (Iridectom* or Corectom* or Coretom*)
- #30 (#24 OR #25 OR #26 OR #27 OR #28 OR #29)
- #31 (#12 AND (#23 OR #30))

Appendix 2. MEDLINE(OvidSP) search strategy

1. randomized controlled trial.pt.
2. (randomized or randomised).ab,ti.

3. placebo.ab,ti.
4. dt.fs.
5. randomly.ab,ti.
6. trial.ab,ti.
7. groups.ab,ti.
8. or/1-7
9. exp animals/
10. exp humans/
11. 9 not (9 and 10)
12. 8 not 11
13. exp Glaucoma, Angle-Closure/
14. exp Glaucoma/
15. limit 14 to yr="1966 – 1989"
16. (angle* adj3 closure*).tw.
17. (angle* adj3 close*).tw.
18. (Uncompensat* adj2 glaucoma*).tw.
19. (Narrow* adj2 angle*).tw.
20. (occlude* adj3 angle*).tw.
21. Acute glaucoma*.tw.
22. (APAC or AACG or PACG or PACS).tw.
23. pupillary block glaucoma.tw.
24. 13 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23
25. exp cataract extraction/
26. (cataract* adj3 (extract* or aspirat* or operat* or remov* or surg* or excis* or implant*).tw.
27. (lens* adj3 (extract* or aspirat* or operat* or remov* or surg* or excis* or implant* or emulsif*).tw.
28. (Phakectom* or Zonulolys* or catartectom*).tw.
29. exp Phacoemulsification/
30. (pha?oemulsif* or pha#o or Capsulor?hexis or lensectom*).tw.
31. exp Capsulorhexis/
32. surgery.fs.

33. exp Trabeculectomy/
34. (Trabeculectom* or Trabeculoplast* or Trabeculotom* or Goniotom*).tw.
35. 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34
36. exp Laser Therapy/
37. exp Lasers/
38. Laser*.tw.
39. (iridotom* or iridoplast* or LPI).tw.
40. exp Iridectomy/
41. (Iridectom* or Corectom* or Coretom*).tw.
42. 36 or 37 or 38 or 39 or 40 or 41
43. 35 or 42
44. 12 and 24 and 43

The search filter for trials at the beginning of the MEDLINE strategy is from the published paper by Glanville et al (Glanville 2006).

Appendix 3. EMBASE.com search strategy

1. 'randomized controlled trial'/exp
2. 'randomization'/exp
3. 'double blind procedure'/exp
4. 'single blind procedure'/exp
5. random*:ab,ti
6. #1 OR #2 OR #3 OR #4 OR #5
7. 'animal'/exp OR 'animal experiment'/exp
8. 'human'/exp
9. #7 AND #8
10. #7 NOT #9
11. #6 NOT #10
12. 'clinical trial'/exp
13. (clin* NEAR/3 trial*):ab,ti
14. ((singl* OR doubl* OR trebl* OR tripl*) NEAR/3 (blind* OR mask*)):ab,ti
15. 'placebo'/exp
16. placebo*:ab,ti

17. random*:ab,ti
18. 'experimental design'/exp
19. 'crossover procedure'/exp
20. 'control group'/exp
21. 'latin square design'/exp
22. #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21
23. #22 NOT #10
24. #23 NOT #11
25. 'comparative study'/exp
26. 'evaluation'/exp
27. 'prospective study'/exp
28. control*:ab,ti OR prospectiv*:ab,ti OR volunteer*:ab,ti
29. #25 OR #26 OR #27 OR #28
30. #29 NOT #10
31. #30 NOT (#11 OR #23)
32. #11 OR #24 OR #31
33. 'closed angle glaucoma'/exp
34. (angle* NEAR/3 closure*):ab,ti
35. (angle* NEAR/3 close*):ab,ti
36. (uncompensat* NEAR/2 glaucoma*):ab,ti
37. (narrow* NEAR/2 angle*):ab,ti
38. (occlude* NEAR/3 angle*):ab,ti
39. (acute NEAR/1 glaucoma*):ab,ti
40. apac:ab,ti OR aacg:ab,ti OR pacg:ab,ti OR pacs:ab,ti
41. ('pupillary block' NEAR/2 glaucoma):ab,ti
42. #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41
43. 'cataract extraction'/exp
44. (cataract* NEAR/3 (extract* OR aspirat* OR operat* OR remov* OR surg* OR excis* OR implant*)):ab,ti
45. (lens* NEAR/3 (extract* OR aspirat* OR operat* OR remov* OR surg* OR excis* OR implant* OR emulsif*)):ab,ti
46. phakectom*:ab,ti OR zonulolys*:ab,ti OR catarectom*:ab,ti

47. 'phacoemulsification'/exp
48. pha?oemulsif*:ab,ti OR pha?o:ab,ti OR capsulor?hexis:ab,ti OR lensectom*:ab,ti
49. 'capsulorhexis'/exp
50. 'surgery':lnk
51. 'trabeculectomy'/exp
52. trabeculectom*:ab,ti OR trabeculoplast*:ab,ti OR trabeculotom*:ab,ti OR goniotom*:ab,ti
53. #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52
54. 'low level laser therapy'/exp
55. 'laser'/exp
56. laser*:ab,ti
57. 'iridotomy'/exp
58. iridotom*:ab,ti OR iridoplast*:ab,ti OR lpi:ab,ti
59. 'iridectomy'/exp
60. iridectom*:ab,ti OR corectom*:ab,ti OR coretom*:ab,ti
61. #54 OR #55 OR #56 OR #57 OR #58 OR #59 OR #60
62. #53 OR #61
63. #32 AND #42 AND #62

Appendix 4. LILACS search strategy

(angle\$ AND (closure\$ OR close\$ OR narrow\$ OR occlude\$)) OR Uncompensat\$
glaucoma\$ OR Acute glaucoma\$ OR pupillary block glaucoma\$ OR APAC OR AACG OR
PACG OR PACS

AND

((lens\$ OR cataract\$) AND (Extract\$ OR aspirat\$ OR operat\$ OR operat\$ OR remov\$ OR
surg\$ OR excis\$ OR implant\$)) OR Phakectom\$ OR Zonulolys\$ OR catarectom\$ OR
phacoemulsification\$ OR phakoemulsification\$ OR Phaco-emulsification\$ OR Phako-
emulsification\$ OR phaco OR phako OR Capsulorhexis OR Capsulorrhesis OR lensectom\$
OR Trabeculectom\$ OR Trabeculoplast\$ OR Trabeculotom\$ OR Goniotom\$ OR Laser\$ OR
iridotom\$ OR iridoplast\$ OR LPI OR Iridectom\$ OR Corectom\$ OR Coretom\$

Appendix 5. metaRegister of Controlled Trials search strategy

(Acute Glaucoma OR angle closure OR angle-closure OR closed angle OR narrow angle OR
occluded angle OR APAC OR AACG OR PACG OR PACS OR uncompensated glaucoma

OR pupillary block glaucoma) AND (extract* OR Phakectomy OR Zonulolyses OR Zonulolysis)

(Acute Glaucoma OR angle closure OR angle-closure OR closed angle OR narrow angle OR occluded angle OR APAC OR AACG OR PACG OR PACS OR uncompensated glaucoma OR pupillary block glaucoma) AND (cataractomy OR phacoemulsification OR phakoemulsification)

(Acute Glaucoma OR angle closure OR angle-closure OR closed angle OR narrow angle OR occluded angle OR APAC OR AACG OR PACG OR PACS OR uncompensated glaucoma pupillary block glaucoma) AND (Trabeculectomy OR Trabeculoplasty OR Trabeculotomy OR Goniotomy)

(Acute Glaucoma OR angle closure OR angle-closure OR closed angle OR narrow angle OR occluded angle OR APAC OR AACG OR PACG OR PACS OR uncompensated glaucoma pupillary block glaucoma) AND (Laser OR lasers OR iridotomy OR iridoplasty OR LPI OR Iridectomy)

Appendix 6. ClinicalTrials.gov search strategy

(Condition) Acute Glaucoma OR angle closure OR angle-closure OR closed angle OR narrow angle OR occluded angle OR APAC OR AACG OR PACG OR PACS OR uncompensated glaucoma

(Intervention) Extract OR extraction OR extracted OR aspirate OR aspiration OR aspirated OR operate OR operated OR operation OR remove OR removed OR removal OR surgery OR surgeries OR surgical OR excise OR excised OR excision OR implant OR implanted OR implantation

(Intervention) Phakectomy OR Zonulolyses OR Zonulolysis OR cataractomy OR phacoemulsification OR phakoemulsification OR Phaco-emulsification OR Phako-emulsification OR phaco OR phako OR Capsulorhexis OR Capsulorrhesis OR lensectomy

(Intervention) Trabeculectomy OR Trabeculoplasty OR Trabeculotomy OR Goniotomy OR Laser OR lasers OR iridotomy OR iridoplasty OR LPI OR Iridectomy OR Corectomy OR Corectomy

Appendix 7. ICTRP search strategy

(Condition) Acute Glaucoma OR angle closure OR angle-closure OR closed angle OR narrow angle OR occluded angle OR APAC OR AACG OR PACG OR PACS OR uncompensated glaucoma OR pupillary block glaucoma

(Intervention) Extract OR extraction OR extracted OR aspirate OR aspiration OR aspirated OR operate OR operated OR operation OR remove OR removed OR removal OR surgery OR surgeries OR surgical OR excise OR excised OR excision OR implant OR implanted OR implantation

(Intervention) Phakectomy OR Zonulolyses OR Zonulolysis OR catarectomy OR phacoemulsification OR phakoemulsification OR Phaco-emulsification OR Phako-emulsification OR phaco OR phako OR Capsulorhexis OR Capsulorrhesis OR lensectomy

(Intervention) Trabeculectomy OR Trabeculoplasty OR Trabeculotomy OR Goniotomy OR Laser OR lasers OR iridotomy OR iridoplasty OR LPI OR Iridectomy OR Corectomy OR Corectomy