Published in final edited form as:

J Glaucoma. 2015 ; 24(5): 348–355. doi:10.1097/IJG.0b013e31829e5616.

Setting Priorities for Comparative Effectiveness Research on Management of Primary Angle Closure: A Survey of Asia-Pacific Clinicians

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Abstract

Purpose—To set priorities for new systematic reviews and randomized clinical trials (RCTs) on the management of primary angle closure (PAC) using clinical practice guidelines and a survey of Asia-Pacific clinicians.

Methods—We restated the American Academy of Ophthalmology's Preferred Practice Patterns recommendations for management of PAC into answerable clinical questions. We asked participants at the Asia-Pacific Joint Glaucoma Congress 2010 in Taipei to rate the importance of having an answer to each question for providing effective patient care, using a Likert-type scale and scoring from 0 (not important at all) to 10 (highly important). We identified relevant systematic reviews and mapped the evidence to clinical questions to identify evidence gaps.

Results—We generated 42 clinical questions. One hundred seventy five individuals agreed to participate in the survey, 132 responded (75.4% response rate) and 96 completed the questionnaire (54.9% usable response rate). Questions rated important include laser iridotomy for the prevention of angle closure in primary angle-closure suspects, further therapies in eyes with plateau iris syndrome after laser iridotomy, and evaluation of the fellow eye in acute angle-closure patients for improving prognosis. Up-to-date and conclusive systematic review evidence was not available for any of the 42 clinical questions.

Conclusion—We identified high priority clinical questions on the management of PAC, none of which had reliable systematic review evidence available. New systematic reviews and RCTs can be initiated to address these evidence gaps.

MeSH Terms

Cross-Sectional Studies; Comparative Effectiveness Research; Glaucoma; Angle-Closure; Health Priorities

Introduction

Glaucoma is a leading cause of blindness worldwide.[1] Primary angle-closure glaucoma (PACG) is responsible for a greater burden of blindness in Asian populations.[2–4] In 2001, it was estimated that 1.7 million individuals in China are bilaterally blind from glaucoma, with PACG accounting for 91% of these cases.[5] To provide effective patient care, clinical decisions should be informed by evidence based on the comparative effectiveness of available treatments.[6]

The foundation of evidence-based health care is summarized evidence from systematic reviews (SRs). To better utilize constrained resources, and to prioritize performance of SRs (for example, for the purpose of informing clinical practice guidelines or CPGs), it is important to identify where more evidence is needed and where additional evidence would change our current understanding of the intervention effectiveness.[6–8] Various approaches have been used to set priorities for health care research and SRs.[9] In 2009, in the United States, the Institute of Medicine generated a list of 100 priority topics on comparative effectiveness research (CER) using formal priority-setting criteria and a three-round voting process.[6] Others, such as groups within The Cochrane Collaboration, have used other approaches to prioritize the order in which SR topics are undertaken, for example, content analysis of policy reports to select topics relevant to stakeholders or consumers.[10] However, there remains little consensus on which approach is best in a given setting.[10,11]

Li and colleagues recently proposed a framework to prioritize CER that starts with identifying clinicians' questions about the effectiveness of the interventions available to them.[12,13] Using the management of primary open-angle glaucoma (POAG) as a test case, Li derived a list of clinical questions from the American Academy of Ophthalmology's Preferred Practice Patterns (AAO PPP) [14], and then asked members of the American Glaucoma Society to rank, in a two-stage Delphi survey, the relative importance of each question. She then identified the existing evidence for each question, and proposed a prioritized list of clinical questions needing SRs and randomized clinical trials (RCTs). Because Li's approach for prioritizing CER appears promising for other diseases, we elected to apply the framework to the management of primary angle closure (PAC) and PACG. Accordingly, the objective of our study was to set priorities for new SRs and RCTs on the management PAC using the AAO PPP CPGs and a survey of Asia-Pacific clinicians.

Materials and Methods

Survey questionnaire

Two investigators independently reviewed the 2010 AAO PPP guideline for the management of PAC and translated the recommendations into 42 questions that can be addressed by RCTs or SRs. We extracted information on the two grades assigned by the AAO PPP Glaucoma Panel to each recommendation, where one denotes the question's importance to the care process and one indicates the strength of evidence that supports the statement. Four members of our team (KD, DF, TL, and MP) who have experience in RCTs, SRs, and glaucoma research verified the translated questions. In this survey, we used the terminology accepted by the World Glaucoma Association classifying angle closure disease

into primary angle-closure suspect (PACS), PAC, PACG, and acute angle-closure crisis (AACC).[15]

We used an online database SurveyMonkey® (SurveyMonkey.com, LLC; Palo Alto, California, USA) to create the questionnaire and collect responses. We asked the participants to “rate the importance of having an answer from research to each clinical question for providing effective patient care” using an 11-point Likert-type scale set from 0 (not important at all) to 10 (highly important). A free text box was provided below each question to allow respondents to make comments.

We pilot-tested the survey with 11 clinicians. Notably, some pilot testers misunderstood the survey objective as if we were asking them “how well does intervention X work.” In response, we added two “assessment of understanding” questions evaluating their understanding of the survey objective. Participants were only allowed to answer the subsequent questions once they correctly answered these two “assessment of understanding” questions.

We created two versions of the survey (Questionnaire I and II) that consisted of the same questions but each version was in a different order. Survey participants were assigned to answer Questionnaire I or II according to a random allocation sequence generated using Stata® (version 11.1, Stata Corp; College Station, TX, USA). The final questionnaire we administered consisted of 53 questions, including 2 “assessment of understanding” questions, 42 clinical questions, and 9 respondent-specific questions.

Study sample and data collection

We recruited survey participants from meeting attendees at the Asia-Pacific Joint Glaucoma Congress (APJGC) in Taipei held from December 3 to 5, 2010. This meeting was the first joint meeting of Asian-Oceanic Glaucoma Society, South East Asia Glaucoma Interest Group, and Asian Angle-Closure Glaucoma Club. Individuals registered for the meeting indicated agreement to participate by entering their names into a raffle to win an iPad™ at the meeting or online.

On December 29, 2010, we sent the survey link to those who had submitted a raffle ticket, and gave them one month to complete during which four reminder emails were sent. After the survey website was closed on February 2, 2011, we downloaded the data and imported it into Stata® for data analysis.

The Johns Hopkins Bloomberg School of Public Health Institutional Review Board (IRB) approved the initial study protocol on March 13, 2008. On November 18, 2010, the IRB approved the amendment for using an iPad™ raffle.

Data analysis

We calculated the mean, median, standard deviation, and interquartile range (25th to 75th percentile) of the ratings for each clinical question and used box plots and histograms to display the results as appropriate. To identify questions for research priorities, we defined

questions to be of greater importance if at least 75 percent of respondents gave ratings above 5 on the scale from 0 to 10 (“25th percentile above 5”).

We calculated the variance of ratings assigned by the same individual to measure within-individual rating variability. We considered a higher within-individual rating variability to be an indicator for a higher ability to discriminate the relative importance between the clinical questions. We compared the within-individual rating variability between different respondent subgroups.

Identifying evidence gaps

To determine if research priorities are aligned with clinical questions of high importance, we searched for SRs from an eyes and vision database originally developed by Li *et al* (last updated in March 2012).[13] We considered the review to be up-to-date if the literature search was done within two years of publication of the review and to be conclusive if further research is unlikely to change our current understanding of the intervention effectiveness. [13] We assessed the methodological quality of SRs and classified them as at low risk of bias if they met the criteria of comprehensive literature search, assessment of methodological quality of included studies, appropriate statistical methods of meta-analysis, and conclusions consistent with review findings, as defined by Li *et al*. [13] We mapped the SRs to the clinical questions derived from the AAO PPP guidelines. When no up-to-date and conclusive SR at low risk of bias was mapped to a clinical question, this defined an evidence gap.

Results

We collected 187 raffle tickets from the 680 individuals registered for the meeting (return rate 187/680, 27.5%), of which 175 contained a valid email address. We sent the survey link to these 175 individuals and 132 of them started the survey (response rate 132/175, 75.4%); 96 individuals completed all survey questions (usable response rate 96/175, 54.9%). The characteristics of these 96 individuals are shown in Table 1.

Figure 1 shows the distribution of ratings across the 42 clinical questions (derived from the AAO PPP guideline for PAC, see Table 2, Supplemental Digital Content 1). The rating distribution was skewed to the left with a mean equal to 6.92 and a median equal to 8 (standard deviation = 2.64, interquartile range = 4). Figure 2 shows the box plots of rating responses (see Table 3, Supplemental Digital Content 2, for rating statistics of each question by Questionnaires I and II numbering). In 15 clinical questions, at least 75 percent of respondents gave ratings above 5 on the scale from 0 to 10 (“25th percentile above 5”) (Table 4). Eight of these 15 questions (53.3%) were graded “most important” (Level A grading of importance to the care process) in the AAO PPP guideline. Among the other 27 questions, deemed to be of lower priority, 10 (37.0%) were graded as Level A in the guideline. The correlation of the mean ratings between Questionnaires I and II (Pearson correlation coefficient = 0.86, p-value <0.001) were strong.

Of the top 5 important clinical questions (i.e., with the highest 25th percentile), 3 were related to laser iridotomy for the prevention of angle closure in PACS patients (Questions 1,

3, and 5 on Questionnaire I), 1 related to further therapies in patients with plateau iris syndrome after laser iridotomy (Question 9 on Questionnaire I), and 1 related to evaluation of the fellow eye in patients with AACC to lower the risk of poor outcomes in future events (Question 37 on Questionnaire I). In the AAO PPP guideline, Questions 1 and 9 were graded as Level A importance to the care process with Level III grading of strength of evidence (“evidence from descriptive studies, case reports or reports of expert committees/organizations”).[14] Questions 3, 5, and 37 were not graded in the guideline.

Figure 3 shows the mean of within-individual rating variability and its 95% confidence interval in each subgroup categorized by characteristics of respondents. The difference in the mean of within-individual rating variability was statistically significant in neither of the categories except that the mean within-individual rating variability was significantly higher in glaucoma specialists than in non-glaucoma specialists (p-value = 0.036). Only 29/96 respondents (30.2%) correctly answered the “assessment of understanding” questions on the first attempt. Some respondents provided their opinions on whether the intervention works rather than indicating the importance of the question in the comments section. (Table 5, Supplemental Digital Content 3)

Five SRs[16–20] on the management of PAC corresponding to 12 clinical questions (12/42, 28.6%) were identified and 2 of the reviews (corresponding to 5 clinical questions) were classified as at low risk of bias and up-to-date.[18,20] For the 5 clinical questions associated with SRs at low risk of bias and up-to-date (Questions 8, 23, 24, 30, and 32 on Questionnaire I), the SR conclusions all suggested that no direct or strong evidence from RCTs was available. Thus, all 42 clinical questions were associated with evidence gaps, even with existing SRs.

Discussion

This survey of meeting attendees in the Asia-Pacific region provides a prioritized list of clinical questions on the management of PAC for future research. Clinicians ranked questions related to prophylactic laser iridotomy in PACS patients (Questions 1, 3, and 5 on Questionnaire I), post-operative therapies in patients with plateau iris syndrome (Question 9 on Questionnaire I), and evaluation of the fellow eye in AACC patients as having the greatest importance (Question 37 on Questionnaire I). Questions considered to be less important were related to those treatments which might not be effective or where safety concerns exist, for example, miotic therapies (Questions 25 and 40 on Questionnaire I).[21]

As noted above, questions related to laser iridotomy for the prevention of angle closure in PACS patients were considered highly important by respondents. There is evidence that laser iridotomy is effective for prophylaxis against AACC in fellow eyes.[14,19] However, clinical trial data supporting its use in other conditions is limited.[14,19] Two RCTs are currently being conducted in Singapore and southern China aiming to determine whether laser iridotomy is safe and effective in managing PACS.[22, 23] Another research question receiving a high priority rating is whether further therapies in treating plateau iris syndrome are effective. A Cochrane review on this topic found no good evidence supporting iridoplasty for this condition.[18] For fellow eyes of AACC patients, although prophylactic

laser iridotomy has been recommended as an effective and safe intervention, [14,19] the surveyed clinicians were still interested in knowing whether evaluation (e.g., assessment of biomarkers) will lower the risk of poor outcomes in future acute attacks, should they occur in the fellow eye. These clinical questions are examples of where we should search for existing evidence to learn more about evidence gaps.

Within-individual variability in assigned ratings to questions was higher among glaucoma specialists than among non-glaucoma specialists. This implies that glaucoma specialists did better in differentiating question importance when setting research priorities. Although it is suggested that research priority-setting exercises should involve appropriate representation across different levels of expertise,[24] our findings indicate that the opinions from individuals with more specialized knowledge and experience may be important contributions to the process.

Since the AAO PPP guidelines were developed to be “clinically relevant and specific enough to provide information to practitioners”,[14] we are confident that our list of questions is informative and useful to clinical practice. However, this also means that the survey response distribution is quite skewed to a high importance rating because most recommendations in the guideline are important to clinicians. One could argue that the recommendations developed by the AAO Glaucoma Panel do not necessarily apply to Asian patients and practitioners. However, when we compared the AAO guidelines with the South East Asia Glaucoma Interest Group (SEAGIG) guidelines, we did not find major variations in the recommendations on the management of angle closure.[14,25] Ou *et al.* compared the POAG guidelines published by the AAO, the European Glaucoma Society, and SEAGIG and noted that although the level of detail varied across these three CPGs, the recommendations on the diagnosis and management of POAG were similar.[26] We believe it is reasonable to assume that most questions derived from the AAO PPP guidelines for PAC were appropriate for our survey.

We held an iPad™ raffle aiming at increasing survey participation. However, the return rate of raffle tickets (27.5%), indicating clinicians’ consent to join the survey, was low. In addition, among those who had access to the survey website, 24.6% never started and 20.6% of them started the survey but failed to complete it. Not completing the survey may indicate that the respondents felt the survey was taking too long, and these respondents may be different in some way from those who completed the survey. However, previous research shows that response rate is generally lower in surveys conducted among clinicians compared to non-clinicians,[27] and some studies also found that bias introduced by a lower response rate may be of less concern for surveys among clinicians.[28]

Most of the participants were from countries where English is not the official/primary language. We added “assessment of understanding” questions at the start of the survey since we were concerned that many clinicians would answer clinical questions as if their clinical knowledge was being tested. The low proportion (30.2%) who correctly answered the questions assessing their understanding of our purpose on the first attempt confirms our decision to have such assessment questions.

Using clinical practice guidelines and a survey of clinicians, our approach appears to be a useful way of prioritizing CER. After mapping existing SRs with clinical questions, we identified meaningful evidence gaps, including all clinical care topics of most importance as determined by our survey respondents. The next step should be to embark on SRs and primary research (i.e., RCTs) where evidence gaps exist. The specific clinical questions on the prevention and care of PAC identified in this survey should be important to funding agencies and investigators in setting priorities for conducting new SRs and RCTs.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Funding:

Supported by Grant U01-EY020522-01, National Eye Institute, National Institutes of Health, USA. The sponsor or funding organization had no role in the design or conduct of this research.

The authors acknowledge Drs. Sharon Ann Haymes, Phenpan Hirunyachote, Sanny Jiang, Thansook Kasemsup, Rohit Khanna, Han-Chin Kuo, Yang Li, Yuanbo Liang, Eugenio Maul, Elizabeth Ssemenda and Julia Whiteside for developing or pilot testing the questionnaire. We are especially indebted to President of APJGC, Dr. Catherine Jui-ling Liu from National Yang-Ming University, Taipei, Taiwan, and Dr. Dolly Chang from Johns Hopkins Bloomberg School of Public Health.

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Figure 1. Overall ratings assigned to the 42 clinical questions by respondents (n=96, 4032 responses).

Figure 2. Ratings assigned to each of the 42 clinical questions. Box plots with medians and interquartile ranges summarize ratings assigned to each clinical question by the respondents. Question number corresponds to Questionnaire I numbering.

¹ We classified the countries by their mean TOEFL iBT™ (Test of English as a Foreign Language Internet-based Test) score available at <http://www.ets.org/Media/Research/pdf/TOEFL-SUM-2010.pdf>. We defined the countries with mean scores greater than 81 (mean score of all test-takers) to have high English proficiency and others to have moderate or low English proficiency.

Figure 3.

Mean of within-individual rating variability and its 95% confidence interval in each subgroup categorized by characteristics of respondents. We calculated the variance of ratings assigned to the 42 clinical questions by each respondent to measure within-individual rating variability. We then graphed the mean of this variability and its 95% confidence interval within each subgroup. Higher mean indicates greater variability in ratings assigned by individuals in the group examined.

Table 1

Characteristics of the respondents who completed all questions (N = 96)

Characteristics	Respondents (N=96)	
	n	%
Primary professional affiliation		
Ophthalmologist	94	97.9
Other	2	2.1
Vision specialty area		
Glaucoma	67	69.8
Not glaucoma	29	30.2
Primary place of employment		
Hospital	48	50.0
Academic center/university	22	22.9
Self-employed/private practice	15	15.6
Government	9	9.4
Other	2	2.1
Experience in clinical trials as an investigator		
0 (Not experienced at all)	14	14.6
1	20	20.8
2 (Moderately experienced)	43	44.8
3	10	10.4
4 (Very experienced)	9	9.4
Ever (co)-authored on a systematic review		
Yes	22	22.9
No	69	71.9
Not sure	5	5.2
Correctly answered the two assessment questions at first attempt		
Yes	29	30.2
No	67	69.8

Characteristics	Respondents (N=96)	
	n	%
Responded to the survey on first request		
Yes	53	55.2
No	43	44.8
Country/Region		
Moderate or low English proficiency^I	62	64.6
Taiwan	34	35.4
China	8	8.3
Thailand	7	7.3
Japan	4	4.2
Indonesia	3	3.1
Hong Kong	2	2.1
South Korea	2	2.1
Vietnam	2	2.1
High English proficiency^I	34	35.4
Malaysia	8	8.3
Philippines	8	8.3
India	6	6.3
Singapore	6	6.3
Australia	4	4.2
Other (US and Austria)	2	2.1

^I We classified the countries by their mean TOEFL iBT™ (Test of English as a Foreign Language Internet-based Test) score available at <http://www.ets.org/Media/Research/pdf/TOEFL-SUM-2010.pdf>. We defined the countries with mean scores greater than 81 (mean score of all test-takers) to have high English proficiency and others to have moderate or low English proficiency

Table 4

Importance of clinical questions considered by the survey respondents (n = 96)

Question number ¹	Clinical questions	Median of the ratings assigned by the survey respondents	Importance grading in the guideline ²	Strength of evidence grading in the guideline ³
25th percentile of the importance ratings greater than 6				
1.	Is laser iridotomy effective in preventing acute angle-closure crisis and primary angle-closure glaucoma in patients with iridotrabecular contact, and normal intraocular pressure without peripheral anterior synechiae?	9	Level A	Level III
3.	Is prophylactic laser iridotomy more effective than routine monitoring in preventing acute angle-closure crisis and primary angle-closure glaucoma in patients who are primary angle-closure suspects when medication required may provoke pupillary block?	8	*	*
5.	Is prophylactic laser iridotomy more effective than routine monitoring in preventing acute angle-closure crisis and primary angle-closure glaucoma in patients who are primary angle-closure suspects and have limited access to immediate ophthalmic care (e.g., the patient resides in a nursing facility, travels frequently to developing parts of the world, works on a merchant vessel)?	8.5	*	*
9.	Is further therapy (iridoplasty, chronic miotic therapy, or other surgical procedures) effective in preventing primary angle-closure glaucoma and acute angle-closure crisis in eyes with recurrent high intraocular pressure after laser iridotomy when the pupil is dilated (plateau iris syndrome)?	8	Level A	Level III
37.	Is evaluation of the fellow eye of a patient with acute angle-closure crisis effective in lowering the risk of poor outcomes in future acute attacks in the fellow eye?	9	*	*
25th percentile of the importance ratings greater than 5 AND less than or equal to 6				
2.	Does routine monitoring of people with iridotrabecular contact improve the identification of primary angle closure?	8	Level A	Level III
4.	Is prophylactic laser iridotomy more effective than routine monitoring in preventing acute angle-closure crisis and primary angle-closure glaucoma in patients who are primary angle-closure suspects when symptoms present suggest prior acute angle-closure?	9	*	*
10.	Is laser iridotomy effective in treating eyes with primary angle closure?	8	Level A	Level III
11.	Is laser iridotomy effective in treating eyes with primary angle-closure glaucoma?	8	Level A	Level III
15.	Do follow-up evaluations (e.g., evaluation of the patency of iridotomy, IOP measurement, Gonioscopy, pupil dilation, and fundus examination) result in better outcomes in patients who undergo laser iridotomy or incisional iridectomy?	8	Level A	Level III
16.	Is topical antihypertensive therapy effective in lowering intraocular pressure and preventing optic nerve damage after laser iridotomy in patients with primary angle closure or primary angle-closure glaucoma?	8	*	*
19.	How much of the trabecular meshwork needs to be open in order that chronic topical ocular hypotensive agents can be effective in managing elevated intraocular pressure and preventing optic nerve damage after laser iridotomy to expect a reasonable IOP reduction?	8	*	*

Question number ¹	Clinical questions	Median of the ratings assigned by the survey respondents	Importance grading in the guideline ²	Strength of evidence grading in the guideline ³
21.	Is incisional surgery (trabeculectomy, tube shunt, or other procedures) effective in managing elevated intraocular pressure and preventing optic nerve damage after laser iridotomy?	8	*	*
23.	Is medical therapy (e.g. topical beta-adrenergic antagonists, topical alpha2-adrenergic agonists, topical or systemic carbonic anhydrase inhibitors, topical miotics, or systemic hyperosmotic agents) an effective initial treatment in lowering intraocular pressure to reduce pain and clear corneal edema in acute angle-closure crisis?	8	Level A	Level III
38.	Is immediate laser peripheral iridotomy in the fellow eye effective in preventing acute attacks in patients with acute angle-closure crisis?	8	Level A	Level II
25th percentile of the importance ratings greater than 4 AND less than or equal to 5				
6.	Is informing primary angle-closure suspects patients who have not had a laser iridotomy about the danger of taking pupil dilation medicines (e.g., over-the-counter decongestants, motion-sickness medication, anticholinergic agents) effective in preventing acute angle-closure crisis?	8	Level A	Level III
7.	Does informing primary angle-closure suspects patients who have not had a laser iridotomy about the symptoms of acute angle-closure crisis reduce the time to notify their ophthalmologist about symptoms and receive eye care services?	8	Level A	Level III
8.	Is prophylactic peripheral laser iridoplasty after laser iridotomy effective in preventing primary angle-closure glaucoma and acute angle-closure crisis in eyes with plateau iris?	8	*	*
12.	Does pre- and post-operative care (e.g., performing at least one IOP check within 30 minutes to 2 hours of surgery, and prescribing topical corticosteroids in the postoperative period) result in better outcomes in patients scheduled to undergo laser iridotomy or incisional iridectomy?	7	Level A	Level III
13.	Are preoperative miotics effective in facilitating laser iridotomy or incisional iridectomy?	8	Level A	Level III
14.	Are perioperative medications effective in averting sudden intraocular pressure elevation after laser iridotomy or incisional iridectomy for patients who have severe disease?	7	Level A	Level III
17.	Is laser iridoplasty effective in opening the drainage angle and lowering the intraocular pressure when performed especially within 6 to 12 months of an acute attack?	6	*	*
18.	Is surgical lysis of synechiae (goniosynechialysis) effective in opening the drainage angle and lowering the intraocular pressure when performed especially within 6 to 12 months of an acute attack?	7	*	*
20.	Is laser trabeculoplasty effective in managing elevated intraocular pressure and preventing optic nerve damage if sufficient open trabecular meshwork exists after laser iridotomy?	7	*	*
22.	Is cataract extraction alone effective in lowering intraocular pressure in primary angle-closure glaucoma patients?	8	*	*
24.	Is laser iridotomy soon after medical therapy effective in treating acute angle-closure crisis?	8	Level A	Level III
26.	Are systemic hyperosmotic agents with miotic therapy effective in decreasing IOP and opening the angle in acute angle-closure crisis?	7.5	*	*

Question number ¹	Clinical questions	Median of the ratings assigned by the survey respondents	Importance grading in the guideline ²	Strength of evidence grading in the guideline ³
29.	Is anterior chamber paracentesis effective in clearing cornea edema such that a laser iridotomy can be performed in patients with acute angle-closure crisis?	7	*	*
30.	Is laser peripheral iridoplasty (even with a cloudy cornea) effective in treating acute angle-closure crisis if a laser iridotomy cannot be successfully performed or the acute angle-closure crisis cannot be medically broken?	7	Level A	Level III
31.	Is paracentesis effective in treating acute angle-closure crisis if a laser iridotomy cannot be successfully performed or the acute angle-closure crisis cannot be medically broken?	7	Level A	Level III
32.	Is incisional iridectomy effective in treating acute angle-closure crisis if a laser iridotomy cannot be successfully performed or the acute angle-closure crisis cannot be medically broken?	7	Level A	Level III
33.	Is simultaneous primary filtering surgery effective in treating acute angle-closure crisis when incisional iridectomy is required and extensive synechial closure is recognized or suspected?	7.5	*	*
34.	Is cataract surgery more effective compared with surgical iridectomy in lowering postoperative medication requirements and decreasing complications in patients with angle-closure glaucoma or acute angle-closure crisis?	7	*	*
35.	Is cataract surgery more effective compared with trabeculectomy in lowering postoperative medication requirements and decreasing complications in patients with angle-closure glaucoma or acute angle-closure crisis?	7	*	*
36.	Is cataract surgery soon after acute angle-closure crisis is broken more effective in lowering intraocular pressure compared with routine follow-up after laser iridotomy in patients with high risk of developing uncontrollable IOP after acute angle-closure crisis?	7.5	*	*
39.	Is laser iridotomy in the fellow eye at the initial visit effective in preventing acute attacks if the eye in acute angle-closure crisis cannot have successful laser iridotomy because of poor visualization of the iris due to corneal edema?	7	*	*
41.	What is the relative effectiveness of laser iridotomy vs. chronic miotic therapy in preventing acute angle-closure crisis in the fellow eye?	8	*	*
42.	What is the optimal interval of examinations to assess the response to laser iridotomy?	7	Level A	Level III
25th percentile of the importance ratings less than or equal to 4				
25.	What is the effectiveness of miotics alone in opening the angle in acute angle-closure crisis?	5	*	*
27.	Is corneal indentation (performed with a four-mirror gonioscopic lens, cotton-tipped applicator, or tip of a muscle hook) effective in breaking pupil block in acute angle-closure crisis?	5	*	*
28.	Are topical hyperosmotic agents effective in clearing cornea edema such that a laser iridotomy can be performed in patients with acute angle-closure crisis?	5	*	*
40.	Is chronic miotic therapy in the fellow eye effective in preventing acute angle-closure crisis in the fellow eye?	5	*	*

* No grading provided by the guideline

¹ Question number corresponds to Questionnaire I numbering

²The grading of importance is divided into three levels:

Level A, most important

Level B, moderately important

Level C, relevant but not critical

³The grading of strength of evidence is divided into three levels:

Level I, evidence obtained from at least one properly conducted, well-designed randomized controlled trial, or meta-analyses of randomized controlled trials

Level II, evidence obtained from well-designed controlled trials without randomization, well-designed cohort or case-control analytic studies, preferably from more than one center, or multiple-time series with or without the intervention

Level III, evidence obtained from descriptive studies, case reports, or reports of expert committees/organizations (e.g., PPP panel consensus with peer review)