



## Complete Summary

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### GUIDELINE TITLE

Primary angle closure.

### BIBLIOGRAPHIC SOURCE(S)

American Academy of Ophthalmology (AAO). Primary angle closure. San Francisco (CA): American Academy of Ophthalmology (AAO); 2000. 20 p. [53 references]

## COMPLETE SUMMARY CONTENT

SCOPE  
METHODOLOGY - including Rating Scheme and Cost Analysis  
RECOMMENDATIONS  
EVIDENCE SUPPORTING THE RECOMMENDATIONS  
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS  
QUALIFYING STATEMENTS  
IMPLEMENTATION OF THE GUIDELINE  
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT  
CATEGORIES  
IDENTIFYING INFORMATION AND AVAILABILITY

## SCOPE

### DISEASE/CONDITION(S)

Primary angle-closure glaucoma (PACG) and related entities (acute angle-closure glaucoma, intermittent angle-closure, chronic angle-closure glaucoma, residual stage of angle-closure glaucoma, plateau iris syndrome, and anatomical narrow angle)

### GUIDELINE CATEGORY

Counseling  
Diagnosis  
Evaluation  
Management  
Risk Assessment  
Screening  
Treatment

### CLINICAL SPECIALTY

Ophthalmology

## INTENDED USERS

Allied Health Personnel  
Health Plans  
Physicians

## GUIDELINE OBJECTIVE(S)

To provide useful information to practitioners for diagnosing and treating primary angle-closure glaucoma, and for managing the angle-closure glaucoma suspect.

To preserve visual function by preventing or treating primary angle-closure glaucoma by addressing the following goals of therapy:

- Identify those patients who are at risk of developing primary angle-closure glaucoma or in whom it is present.
- Manage an acute attack of angle-closure glaucoma
- Reverse or prevent angle closure by using laser iridotomy or incisional iridectomy to alleviate pupillary block of aqueous flow.
- Determine with gonioscopy if residual angle closure is present in the form of peripheral anterior synechiae.
- Determine if a mechanism other than pupillary block (e.g., plateau iris syndrome, aqueous misdirection, choroidal effusion) is present.
- Observe patients for intraocular pressure elevation, progression of synechial angle closure or optic nerve damage, and manage as indicated.
- Minimize the side effects of management and their impact on the patient's vision, general health and quality of life.
- Evaluate the fellow eye for evidence of angle closure or a narrow angle.
- Educate and engage the patient in the management of the disease.

## TARGET POPULATION

Individuals of all ages who have risk factors for pupillary block.

## INTERVENTIONS AND PRACTICES CONSIDERED

1. Comprehensive ophthalmologic evaluation with the addition of, or special attention to, those factors that particularly bear upon the diagnosis, course and treatment of primary angle closure.
2. Systemic and ocular history, and physical examination, including assessment of refractive status, measurement of intraocular pressure with a Goldmann-type applanation tonometer, slit-lamp biomicroscopic examination of the anterior segment, gonioscopy, evaluation of the optic disc and retinal nerve fiber layer, documentation of optic nerve appearance, evaluation of the fundus, and evaluation of the visual field.
3. Medical therapy [ $\alpha_2$ -adrenergic agonists, beta-adrenergic blockers, carbonic anhydrase inhibitors, miotics, prostaglandin analogs, systemic hyperosmotic agents].
4. Surgical treatment (laser iridotomy, incisional iridectomy, peripheral iridectomy, goniosynechialysis, laser iridoplasty).

5. Pre- and post-operative care for patients facing laser iridotomy or incisional iridectomy.
6. Subspecialist consultation or referral.
7. Low-vision and social services referral.

#### MAJOR OUTCOMES CONSIDERED

- Reversal of angle closure
- Relief of pupillary block
- Stable, adequate intraocular pressure

## METHODOLOGY

#### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

#### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

In the process of revising this document, a detailed literature search of MEDLINE for articles in the English language was conducted on the subject of primary angle closure glaucoma for the years 1995-1999.

#### NUMBER OF SOURCE DOCUMENTS

196

#### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

#### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Ratings of strength of evidence:

I - Level I provides strong evidence in support of the statement. The design of the study allowed the issue to be addressed, and the study was performed in the population of interest, executed in such a manner as to produce accurate and reliable data, and analyzed using appropriate statistical methods. The study produced either statistically significant power and/or narrow confidence limits on the parameters of interest.

II - Level II provides substantial evidence in support of the statement. Although the study has many of the attributes of one that provides Level I support, it lacks one or more of the components of Level I.

III - Level III provides a consensus of expert opinion in the absence of evidence that meets Levels I and II.

## METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The results of a literature search on the subject of primary angle closure were reviewed by the Glaucoma Panel and used to prepare the recommendations, which they rated in two ways. The panel first rated each recommendation according to its importance to the care process. This "importance to the care process" rating represents care that the panel thought would improve the quality of the patient's care in a meaningful way. The panel also rated each recommendation on the strength of the evidence in the available literature to support the recommendation made.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Ratings of importance to care process

Level A, most important

Level B, moderately important

Level C, relevant, but not critical

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

External Peer Review

Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Guideline drafts are sent for review to national medical organizations such as the American Medical Association and the American Academy of Family Physicians, to ophthalmic organizations, and to other groups depending on the subject. Comments made by these reviewers were considered by the guideline authors.

These guidelines were reviewed by Council and approved by the Board of Trustees of the American Academy of Ophthalmology (February 2000).

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

Ratings of importance (A-C), ratings of strength of evidence (I-III) and ratings of feasibility (a-c), are defined at the end of the Major Recommendations field.

#### Diagnosis

The initial evaluation of a patient with primary angle-closure glaucoma or primary angle-closure suspect includes all features of the comprehensive adult eye evaluation (A:III)(a) with particular attention to those aspects relevant to angle closure.

#### History

- Systemic and ocular history (e.g., blurred vision, colored halos around lights, aching eye or brow pain, eye redness) (A:III)(a).
- Family history of acute angle closure glaucoma (A:II)(b).

#### Physical Examination

- Assessment of refractive status (A:II)(a).
- Slit-lamp biomicroscopy (A:III)(b).
- Measurement of intraocular pressure (A:III)(a).
- Gonioscopy of both eyes (A:III)(a).
- Evaluation of the optic nerve head and retinal nerve fiber layer (A:III)(a).
- Documentation of optic nerve head appearance (A:II)(a).

#### Management Plan

Upon completion of the comprehensive initial evaluation and testing, a diagnosis of one of the six forms of primary angle-closure listed in the Background section of the original guideline should be established, excluding secondary forms of angle-closure glaucoma (e.g., uveitic glaucoma, neovascular glaucoma) (A:III)(b). Management recommendations are described in the main body of the guideline document.

#### Surgery and Postoperative Care

The ophthalmologist who performs laser iridotomy or incisional iridectomy must ensure that the patient receives adequate postoperative care (A:III)(c). The plan for care prior to and after iridotomy and iridectomy should contain the following elements:

- Informed consent prior to surgery (A:III)(a). This should include the risk of increased intraocular pressure and the possible development of a ghost image.
- At least one preoperative evaluation by the surgeon (A:III)(a).
- At least one intraocular pressure check within 60 to 120 minutes of surgery (A:II)(a).
- Follow-up within 1 week of surgery (A:III)(a).
- Examination 4 to 8 weeks postoperatively after laser surgery (A:III)(a).
- Use of topical anti-inflammatory agents in the postoperative period, unless contraindicated (A:III)(a).
- Pupillary dilation, with postdilation intraocular pressure check and gonioscopy, within 8 weeks to document the angle opening and presence of posterior synechiae (A:III)(a).

Preoperative miotics facilitate laser iridotomy or iridectomy. Medications should be used perioperatively to avert sudden intraocular pressure elevation, particularly in patients with severe disease (A:II)(a).

#### Follow-up Evaluation

Following iridotomy, patients with glaucomatous optic neuropathy should be followed as specified in the Primary Open-Angle Glaucoma, Preferred Practice Pattern (A:III)(b). All other patients should be followed as specified in the Primary Open-Angle Glaucoma Suspect, Preferred Practice Pattern (A:III)(b). All patients should have gonioscopy yearly (A:III)(a).

#### Counseling/Referral

Patients with significant visual impairment or blindness should be referred to, and encouraged to use, appropriate low-vision rehabilitation and social services (A:III)(c). Patients at risk for angle closure should be warned of the danger of taking medicine that could cause pupil dilation and induce an angle-closure attack (A:III)(b). The patient should also be informed about the symptoms of acute angle-closure attacks and instructed to notify their ophthalmologist immediately if symptoms occur (A:III)(b).

#### Definitions:

The panel rated the importance to the care process for each recommendation, the strength of evidence in the available literature to support the recommendations, and the feasibility or the likelihood that the indicator in question can be abstracted from a review of the patient's medical record or the administrative (billing and enrollment) data.

The ratings of importance to the care process are divided into three levels, designated "A," "B" and "C," with A defined as "most important," B defined as "moderately important" and C defined as "relevant, but not critical."

The ratings of strength of evidence are also divided into three levels. Level I provides strong evidence in support of the statement. The design of the study allowed the issue to be addressed, and the study was performed in the population

of interest, executed in such a manner as to produce accurate and reliable data, and analyzed using appropriate statistical methods. The study produced either statistically significant power and/or narrow confidence limits on the parameters of interest. Level II provides substantial evidence in support of the statement. Although the study has many of the attributes of one that provides Level I support, it lacks one or more of the components of Level I. Level III provides a consensus of expert opinion in the absence of evidence that meets Level I and II.

The ratings of feasibility indicate the likelihood that the indicator in question can be abstracted from a review of the patient's medical record or the administrative (billing and enrollment) data. A rating of (a) is defined as high feasibility, (b) defined as moderate feasibility, and (c) defined as low feasibility.

#### CLINICAL ALGORITHM(S)

An algorithm for the management of patients with primary angle closure is provided in the guideline document.

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see Major Recommendations)

### BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

#### POTENTIAL BENEFITS

Overall:

- Prevention of vision impairment in patients with or at risk for developing angle-closure glaucoma.

Specific:

- Iridotomy reverses appositional angle closure, and it prevents or retards formation of anterior synechiae. Timely treatment also may prevent damage to the trabecular meshwork, iris, lens, and cornea.
- Peripheral iridectomy may halt the progression of synechial closure and progressive intraocular pressure elevation.

Subgroups Most Likely to Benefit:

- Patients with a family history of acute angle-closure glaucoma
- Patients with intermittent symptoms of angle-closure attack
- Patients with narrow anterior chamber angles who may be at high risk for subsequent angle-closure glaucoma
- Patients at risk secondary to age, gender, or hyperopia

## POTENTIAL HARMS

- Laser iridotomy may precipitate a temporary rise in intraocular pressure and the possible development of a ghost image.
- Miotics may aggravate pupillary block and, when used chronically, may increase the risk of synechial angle closure, especially if cataract formation increases lens-iris contact.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

Preferred Practice Patterns provide guidance for the pattern of practice, not for the care of a particular individual. While they should generally meet the needs of most patients, they cannot possibly best meet the needs of all patients. Depending on a host of medical and social variables, it is anticipated that it will be necessary to approach some patients' needs in different ways. The ultimate judgment regarding the propriety of the care of a particular patient must be made by the physician in light of all the circumstances presented by the patient. Adherence to these Preferred Practice Patterns will certainly not ensure a successful outcome in every situation. These guidelines should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonable directed at obtaining the best results.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness  
Patient-centeredness  
Safety

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

American Academy of Ophthalmology (AAO). Primary angle closure. San Francisco (CA): American Academy of Ophthalmology (AAO); 2000. 20 p. [53 references]

#### ADAPTATION

Not applicable: The guideline was not adapted from another source.

#### DATE RELEASED

2000 Sep

#### GUIDELINE DEVELOPER(S)

American Academy of Ophthalmology - Medical Specialty Society

#### SOURCE(S) OF FUNDING

American Academy of Ophthalmology (AAO)

#### GUIDELINE COMMITTEE

Glaucoma Panel; Preferred Practice Patterns Committee

#### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Names of Committee Members: Glaucoma Panel: Joseph Caprioli, MD, Chair; Douglas E. Gaasterland, MD; Ronald L. Gross, MD; Henry D. Jampel, MD; Allan E. Kolker, MD; Kathleen A. Lamping, MD; Carl V. Migliazzo, MD; Paul P. Lee, MD, Methodologist; Michael Alcantar, Patient Representative.

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#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

#### GUIDELINE STATUS

This is the current release of the guideline. It updates the previous guideline first issued in 1992 and updated in 1996 (San Francisco [CA]: American Academy of Ophthalmology; 1996. 15 p.).

This document is valid for 5 years from the date released unless superseded by a revision. All Preferred Practice Patterns are reviewed by their parent panel annually or earlier if developments warrant.

#### GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Academy of Ophthalmology \(AAO\) Web site](#).

Print copies: Available from American Academy of Ophthalmology, P.O. Box 7424, San Francisco, CA 94120-7424; telephone, (415) 561-8540.

#### AVAILABILITY OF COMPANION DOCUMENTS

None available

#### PATIENT RESOURCES

None available

#### NGC STATUS

This summary was completed by ECRI on November 20, 2000. The information was verified by the guideline developer on December 20, 2000.

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