Clinical Practice Guideline: Glaucoma

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Coding Implications
Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

Glaucoma is a multifactorial optic neuropathy in which there is characteristic acquired loss of optic nerve fibers. Glaucoma of all types is the second most common cause of legal blindness in the United States and is the leading cause of legal blindness among African Americans. This policy describes the clinical practice guidelines for the management of glaucoma.

I. Comprehensive eye evaluations are recommended for those with risk factors for the development of glaucoma. The likelihood that these factors will contribute to the development of glaucomatous optic nerve damage should be carefully weighed against the risk of treatment when deciding if therapy is warranted. This decision should be individualized, taking into account the risks and rates at which glaucomatous optic nerve damage and visual impairment are likely to occur, the patient's expected longevity, and the patient's tolerance for effective treatment. To justify therapy in high-risk patients, the potential benefit of treatment should outweigh the negative side effects of therapy on the patient's vision, general health, and quality of life.

II. The overall risk of developing glaucoma increases with the number and strength of the following risk factors:
- **A.** Elevated intra-ocular pressure;
- **B.** Advanced age (over 50 but more so with extremes of age > 78-80 years);
- **C.** Family history of glaucoma;
- **D.** African Race or Latino / Hispanic ethnicity;
- **E.** Thinner central cornea;
- **F.** Lower ocular perfusion pressure;
- **G.** Type 2 diabetes mellitus;
- **H.** Myopia;
- **I.** Lower systolic and diastolic blood pressure;
- **J.** Disc hemorrhage;
- **K.** Larger cup-to-disc ratio;
- **L.** Higher pattern standard deviation on threshold visual field testing;
- **M.** Other factors – migraine, vasospasm, systemic arterial hypertension, cerebrospinal fluid pressure, and genetic factors.

Background

Primary Open Angle Glaucoma (POAG) is the most common type of glaucoma and is a chronic, generally bilateral, and often an asymmetrical disease. It progresses very slowly as the intraocular pressure rises due to the inability of the fluid to drain properly. There are no early warning systems and is often called the "sneaky thief" of sight.

POAG represents a spectrum of disease in adults in which the susceptibility of the optic nerve to damage varies among patients. Although many patients with POAG present with elevated

intraocular pressure (IOP), nearly 40% of those with otherwise characteristic POAG may not have elevated IOP measurements. The vast majority of patients with POAG have disc changes or disc and visual field changes, but there are rare cases where there may be early visual field changes before there are detectable changes to the optic nerve.

Low Tension Glaucoma (LTG) usually has intraocular pressure within normal range and yet the optic nerve is damaged; therefore significant optic nerve cupping suggests the diagnosis of glaucoma instead of a pressure determination.

Primary Angle Closure Glaucoma (PACG) is appositional or synechial closure of the anterior chamber angle caused by relative pupillary block in the absence of other causes of angle closure. This form of glaucoma is relatively rare and is very different from chronic glaucoma because the eye pressure rises very quickly. The symptoms of acute glaucoma are severe headache or eye pain, nausea, severely blurred vision, and halos around lights at night. These symptoms require prompt emergency medical attention because sudden high intraocular pressures can lead to serious, immediate visual damage.

Congenital Glaucoma occurs in infants. This very rare condition may be inherited and may be the result of incomplete development of the eye's drainage canals during the prenatal period.

Secondary Glaucoma can occur as the result of an eye injury, inflammation or tumor, or in advanced cases of cataracts or diabetes. This type of glaucoma may be mild or severe, and the method of treatment depends on whether the condition is acute or chronic. The primary problem that caused the glaucoma will also need to be treated.

Comprehensive Glaucoma Evaluation

The initial comprehensive glaucoma evaluation should include all the components of the comprehensive adult eye examination as defined in the AAO Preferred Practice Guidelines, with the addition of, or special attention to, those factors that particularly reflect upon the diagnosis of course of treatment of POAG. The components of the evaluation may require more than one visit.

History - The comprehensive evaluation should include a review of family, ocular, and systemic history.

Physical examination focuses on the following elements:

- Pupil - The pupils are checked for an afferent pupillary defect.
- IOP - IOP is measured preferably before gonioscopy or dilation of the pupil. The time of day should be recorded because of diurnal variation. Diurnal measurements may be indicated in patients with possible glaucomatous damage and IOPs less than 21mm Hg. The baseline assessment may also require a diurnal measurement of normal IOP when disc damage exceeds the amount expected based on a single IOP measurement.
- Slit lamp examination of the anterior segment
- Gonioscopy - Careful evaluation of the anterior chamber angle is required to rule out angle closure or secondary cause of pressure elevation.

- Evaluation of the optic disc and retinal nerve fiber layer - Examination provides valuable structural information about glaucomatous nerve fiber damage. The preferred method of exam includes magnified stereoscopic visualization through a dilated pupil.
- Documentation of the optic appearance - Photography and stereo-photography provides a reproducible image for future comparison. A detailed description or drawing may be used if photography is not available.
- Evaluation of the fundus - Examination includes a search for other abnormalities that might account for visual field defects.
- Evaluation of the visual field - Visual field should be measured with automated static threshold techniques or with careful (manual) combined kinetic and static threshold testing. Other secondary causes of glaucoma that would eliminate the diagnosis of POAG should be sought and carefully ruled out by the history and physical examination.

Target Pressure

In managing glaucoma, the physician should strive to achieve a stable range of pressure that would be unlikely to cause further optic nerve damage. The upper limit of that range is defined as the target pressure, which will vary among patients and at time with the same patient. The pretreatment pressure range is that which damaged the optic nerve and would cause additional damage in the future. Thus the initial target pressure should be at least 20% lower.

The adjustment factors for additional lowering beyond the 20% are the severity of existing optic nerve damage, the height of the IOP, and the rapidity with which the damage occurred (if known), the distance from the target IOP, and other risk factors (family medical history and race). In general, the more severe the damage, the lower the target pressure should be. Failure to meet and maintain the target pressure should trigger a reassessment of the treatment plan. Severity of glaucoma damage may be graded using the following:

- Mild: definite optic disc or RNFL abnormalities consistent with glaucoma as detailed above and a normal visual field as tested with standard automated perimetry (SAP)
- Moderate: definite optic disc or RNFL abnormalities consistent with glaucoma as detailed above, and visual field abnormalities in one hemifield that are not within 5 degrees of fixation as tested with SAP
- Severe: definite optic disc or RNFL abnormalities consistent with glaucoma as detailed above, and visual field abnormalities in both hemifields and/or loss within 5 degrees of fixation in at least one hemifield as tested with SAP
- Indeterminate: definite optic disc or RNFL abnormalities consistent with glaucoma as detailed above, inability of patient to perform visual field testing, unreliable/uninterpretable visual field test results, or visual fields not performed yet

Damage defined based upon Visual Field:

1. "Mild Damage"
   a. No detectable VF defect
   b. "mild" generalized reduction in retinal sensitivity
   c. "mild" constriction of isotopes
   d. nasal step peripheral to 20 degrees
   e. small relative defects of the Bjerrum area, peripheral to 9 degrees
2. "Moderate Damage"

a. "Moderate" generalized reduction in retinal sensitivity
b. "Moderate" constriction of isotopes absolute effects to within 9 degrees of fixation
c. temporal wedge

3. "Severe Damage"
   a. "Severe" generalized reduction in retinal sensitivity
   b. "Severe" constriction of isotopes (i.e.<10 degrees)
   c. absolute defects to within 3 degrees of fixation
   d. Loss of central acuity; temporal island remains

Management

Establishing an effective regimen requires attention to the potential impact of the disease and the degree to which this is reduced by noncompliance due to visual, physical, social, economic, and psychological factors. The physician must take all of these into consideration when establishing a management plan.

Screening is most effective, efficient, and cost effective when targeted toward the populations at high risk for the disease (African American and the elderly). Screening is most effective when intraocular pressure measurements are combined with the assessment of optic nerve status.

Eye care providers can lower IOP with medications, laser therapy, or incisional glaucoma surgery. Results from randomized controlled trials and other studies provide evidence that these treatments reduce IOP and decrease the rate and incidence of progressive of POAG

Follow-Up Glaucoma Evaluation

Follow-up glaucoma evaluation for routine care is defined below:

Target IOP Achieved	Progression of damage	Duration of control (months)	Follow-up intervals (months) [1]
Yes	No	≤6	6*
Yes	No	>6	12
Yes	Yes	N/A	1 – 2*
No	Yes	N/A	1 – 2*
No	No	N/A	3- 6*

[1] Patients with more advanced damage or greater lifetime risk from POAG may require more frequent evaluations. These intervals are the maximum recommended time between evaluations.

The following should be reviewed with every routine follow-up visit:

- Interval ocular history
- Interval systemic medical history if applicable
- Local or systemic problems with medication
- Frequency and time of last glaucoma medication
- Verification of appropriate use of glaucoma medications

The following component should also be performed at every follow-up visit:

- Visual acuity
- IOP in both eyes
- Slit lamp exam

Optic nerve evaluation and visual field evaluation do not need to be performed at every follow-up visit. Evaluations outside of these guidelines as recommended by AAO require prior authorization for medical necessity.

Glaucoma Suspect

Glaucoma suspect is a person with one or more risk factors for glaucoma. These risk factors may include elevated intraocular pressure, family history, ethnic background, older age, optic nerve appearance, visual field loss, and other factors.

- Untreated glaucoma suspect with stable optic nerve and IOP status:
  Once stability of the IOP and optic nerve has been demonstrated, follow-up evaluation with visual fields should be performed every 12 months, depending on the level and duration of elevated IOP, appearance of the optic nerve, presence and degree of associated risk factors.
- Untreated high risk glaucoma suspect with stable optic nerve and IOP status:
  Visual field evaluations should initially be performed every six to 12 months*, depending on the level and duration of elevated IOP, appearance of optic nerve, presence and degree of associated risk factors.
- Treated high risk glaucoma suspect with newly established control of IOP:
  Once an acceptable IOP is achieved, the patient will be monitored for stability of IOP and optic nerve status (maintenance of normal visual field and unchanged appearance of the optic nerve). Depending on the level of IOP and presence of other risk factors, the patient may need to be seen as often as every three to 12* months. Follow-up evaluations will always include measurements of IOP, periodically; the appearance of the optic nerve and visual field will need to be recorded.

Primary Angle Closure Glaucoma

- As in the cases of glaucoma, IOP should be measured and diagnosis established. Components of the full examination may need to be deferred in some cases until after an acute attack is adequately treated. Once the attack is broken and the patient has recovered, visual fields should be monitored for progression regardless of IOP, especially if the glaucomatous damage is severe. For visual field frequencies, see Primary Open Angle Glaucoma.
- The extent to which an optometrist can provide treatment for angle closure glaucoma may vary depending on the scope of the practice laws and regulations as governed by the state and the individual optometrist's certification. Care of the patient with primary angle closure glaucoma requires referral for treatment to an ophthalmologist.

Primary Open Angle Glaucoma

Visual fields should be tested under standardized conditions, applying a reproducible technique of acceptable sensitivity and specificity for identifying glaucomatous visual field defects (threshold perimetry or kinetic perimetry combined with a threshold-related supra threshold static technique). The purpose of follow-up evaluation is to access the response to therapy as a basis for altering or adjusting treatment as necessary and for reconfirming the continuing validity of the diagnosis. Visual field should be monitored at appropriate intervals (moderate or advanced glaucoma in good control once a year; mild, moderate or advanced glaucoma and borderline control two times per year; or uncontrolled glaucoma may be necessary up to four times per year. Frequency and composition of the follow-up evaluation will depend on the severity of existing optic nerve damage, height of the IOP, and stability of the clinical course. Consistent with the Preferred Practice Patterns of the AAO, a target intra-ocular pressure should be documented.

Reviews, Revisions, and Approvals	Date	Approval Date
Original approval date	12/2019	12/2019
Converted to new template	07/2020	10/2020
Annual Review	12/2020	01/2021

References

1. American Academy of Ophthalmology, Preferred Practice Pattern® Guidelines, Primary Angle Closure, San Francisco, CA, American Academy of Ophthalmology, 2015, https://www.aao.org/preferred-practice-pattern/primary-angle-closure-ppp-2015
2. American Academy of Ophthalmology, Preferred Practice Pattern® Guidelines, Primary Open-Angle Glaucoma, San Francisco, CA, American Academy of Ophthalmology, 2015, https://www.aao.org/preferred-practice-pattern/primary-open-angle-glaucoma-ppp-2015
3. American Academy of Ophthalmology, Preferred Practice Pattern® Guidelines, Primary Open-Angle Glaucoma Suspect, San Francisco, CA, American Academy of Ophthalmology, 2015, https://www.aao.org/preferred-practice-pattern/primary-open-angle-glaucoma-suspect-ppp-2015

Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. "Health Plan" means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan's affiliates, as applicable. The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering

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Note: For Medicaid members, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

Note: For Medicare members, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at http://www.cms.gov for additional information.