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MACEP News

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Newsletter of the Massachusetts College of Emergency Physicians
860 Winter Street
Waltham, MA 02451-1414
Telephone (781) 890-4407
Fax (781) 890-4109
www.macep.org

SAVE THE DATE!

MACEP Annual Meeting
Wednesday, May 7, 2014
MMS Conference Center
Waltham, MA

www.macep.org

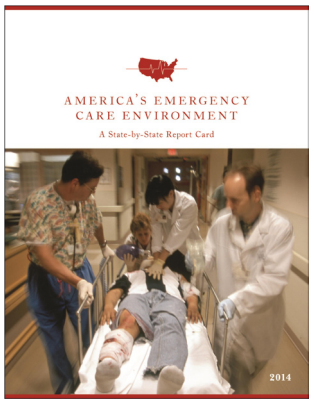
Affiliated with the
American College of Emergency Physicians

President's Corner

Nathan MacDonald, MD, FACEP

On January 16, 2014 the American College of Emergency Physicians released their state-by-state Report Card on America's Emergency Care Environment. This report does not measure the quality of emergency care but instead looks at the policies and setting in which we practice emergency medicine nationwide. For Massachusetts there is both good news and bad in the report. We earned a B- overall placing us second overall in the nation for our emergency care environment, which gives us a lot to be proud of here at home. Despite the overall high grade, Massachusetts scored low on several key indicators and the nation overall received a D+; not the kind of grade you would want to hang on the refrigerator!

On the positive side Massachusetts received an A grade for Public Health and Injury Prevention. This reflects our overall low rates of accidental death from all causes, and good helmet and seatbelt laws. It is also indicative of strong programs to protect children and the elderly and high immunization rates. As emergency physicians in Massachusetts we have always been among the front line for public health and we should be proud of these public health accomplishments.



Our state also received a B+ for Quality and Patient Safety. Massachusetts has well developed EMS triage and destination policies that allow pre-hospital personnel to get patients to hospitals with specialized capabilities for trauma, ST elevation MI, and stroke. Additionally our statewide trauma registry and widespread use of EMRs both contributed positively to this score.

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MACEP Legislative Update

Ronna Wallace, Legislative Consultant

REPORT CARD SPELLS OUT NEED FOR BETTER DISASTER PLANNING

The American College of Emergency Physicians' (ACEP's) recently released "Report Card" on America's emergency care environment points directly to the need for passage of MACEP's "Disaster" bill. While scoring very well on public health, injury prevention, quality and patient safety, the Commonwealth was graded "C" for Disaster Preparedness and "D" for Liability Environment, despite the excellent response to the Boston Marathon bombings and recent improvements in medical liability included in the 2013 health reform law.

How can MACEP improve its national ranking, protect health care workers in disaster response and ensure that high-quality emergency care, like that shown in response to the Marathon bombings, can be delivered whenever and wherever needed? By passing S.1012/H.1485, "An Act Relative to Emergency and Disaster Planning for Health Care Providers (Eldridge, D-Action;Malia, D-Jamaica Plain)." This bill would grant qualified civil immunity to physicians, nurses, and other healthcare professionals who provide emergency medical services, except in the case of willful or wanton misconduct or reckless disregard. The bill would also require that, in the situation of a governor declared emergency, or during other locally declared emergency situations, there would be a general waiver of liability of court or regulatory agency administrative sanctions against health care providers to ensure that providers are able to care for patients quickly without worry about liability concerns. By setting a higher standard for pursuing a lawsuit against EMTALA providers, S.1012/H.1485 would benefit the public, emergency physicians, hospitals and Massachusetts emergency care system.

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PRESIDENT continued from cover

In Access to Emergency Care Massachusetts earned a B. We have high rates of insured citizens, and currently we have relatively high per capita numbers of emergency physicians, specialists, and nurses. Primary care access is better than in many states, although not without room for improvement. In contrast we have a high proportion of patients with unmet needs for substance abuse and dual diagnosis and the overall reduction in the number of psychiatric beds is troubling.

Massachusetts received a C grade for Disaster preparedness. At first, this may seem unfair given the tremendous medical response to the Marathon Bombings last April when Boston demonstrated to the nation how a well-coordinated EMS and Disaster system can save lives. The mediocre grade does not diminish that accomplishment but rather points to our states extremely low bed surge capacity statewide as well as our relatively long wait times in Emergency Departments. We have served our population well while having only a razors edge of excess hospital beds for disasters or epidemics. The wait time in EDs also shows that we are operating "at capacity" already.

Lastly, the Commonwealth's grade for our Medical Liability Environment was a dismal D-. With the highest average malpractice payout in the nation and poor protections for health care providers in disasters and when caring for patients under the federal EMTALA mandate, Massachusetts lags far behind most of America. Our state runs the risk of endangering the availability of high quality emergency care by reducing the number of specialists who are willing to be "on call" for our community hospitals or even practice in Massachusetts. This is a travesty in a state that has always been at the vanguard of health care.

This report card will help guide our efforts to influence policy in Massachusetts that protects citizen's access to the best possible emergency care. MACEP is already attuned to these issues and continues to work on the behalf of our patients and providers. Our bill "An Act Relative to Emergency and Disaster Planning for Health Care Providers" has been heard in committee on Beacon Hill and would protect healthcare professionals in disaster situations and while rendering EMTALA mandated care. If passed, patients can be taken care of quickly and with the maximum resources brought to bear without undue concern of excessive liability. We hope you will urge your legislators in the Massachusetts House and Senate to support H. 1485 and S. 1012 so that this important opportunity does not pass by.

MACEP members also continue to work tirelessly on the issue of behavioral health patients boarding in emergency departments. Creating a system in Massachusetts that makes sense for our patients suffering from mental illness would not only improve their care, it would free up much needed capacity in our hospital emergency departments. This would improve day-to-day waiting times in our states EDs and would be critically important in any kind of widespread disaster or epidemic.

The state-by-state report card is not an indictment of emergency medicine or emergency care but rather a measure of the health policy environment that is the framework on which we have built our system. In many cases emergency physicians, nurses, and pre-hospital personnel provide exceptional care despite flawed policies and priorities. But we can do better. Since the last national report card our state has slipped from a B to a B- and the nation has gone from a C- to a D+. In Massachusetts, looking both within and beyond our borders gives us a glimpse of the opportunities and challenges facing emergency care. The report card should serve as a warning to our nation as well as a roadmap to set our course for better policies, better protections, and the best possible care in our country's emergency departments and hospitals. Again we have much of which to be proud of here at home, but much work to do if we are to ensure our continued ability to provide the highest quality emergency care for our patients.

At MACEP we are not satisfied with a B-. Are you?

Call for Award Nominations

March 14, 2014 is the deadline to submit your nominations for the following MACEP Annual Awards:

Emergency Medicine Physician of the Year
Recognizes and honors an emergency medicine physician who has made significant contributions to the advancement of emergency medicine in Massachusetts.

Emergency Medicine Resident of the Year
Recognizes and honors an outstanding emergency medicine resident whose combination of clinical promise, leadership, ability to think outside the box, and commitment to their patients and emergency medicine separate them from majority.

Medical Student of the Year
Recognizes and honors an outstanding medical student with an interest in Emergency Medicine. The award is intended to recognize students who excel in compassionate care of patients, professional behavior, and service to the community and/or specialty.

To submit a nomination, please complete nomination forms found at www.macep.org/nominations and submit to the MACEP office. All materials must be e-mailed, postmarked or faxed by March 14, 2014. Awards will be presented at MACEP's Annual meeting May 7, 2014.

LEGISLATIVE continued from cover

H.1485 is pending before the Judiciary Committee, S.1012 before the Public Health Committee. For more information on how you can help advance this bill, go to our website.

STATE SENATE FORMS PANEL TO EXAMINE DRUG ADDICTION, TREATMENT, COMMITMENTS

In response to the high rate of heroin use and opioid abuse in Massachusetts, the State Senate has formed a special committee to study drug addiction and treatment options in Massachusetts, with a focus on the civil commitment process. The committee will be chaired by Senator Jennifer Flanagan (D-Leominster). Sen. Flanagan stated that the committee will review addiction from "detox to treatment" and "analyze the effectiveness of the current Section 35 process in which courts can commit an addict for up to 90 days for detox from drug addiction." Sens. William Brownsberger, (D-Belmont); John Keenan, (D-Quincy); Joan Lovely, (D-Salem); Linda Dorcena Forry (D-Boston); and Richard Ross (R-Wrentham) have been named to the committee. The committee has no specific timetable, but recommendations are likely to turn into standalone legislation or be added to the Senate budget, which is expected to be released in May. MACEP looks forward to working with the Senate committee.

The drug epidemic continues to dominate MACEP's time on the regulatory level, as well. MACEP works closely with the Department of Public Health as a member of the Best Practices Work Group, charged with "promoting safe and responsible opioid prescribing and dispensing practices for acute and chronic pain." MACEP expressed concern over recently released draft guidelines, which continue to ignore the unique needs of emergency physicians and threaten patient's access to necessary pain medication. The Work Group was formed by Chapter 244 of the Acts of 2012, which also mandates usage of the Prescription Monitoring Program when prescribing a schedule II or III narcotic to a patient for the first time. Regulations to implement that provision have not moved forward.

UPDATE ON PSYCH BOARDING

MACEP recently submitted comments to the state Mental Health Advisory Committee in response to an interim report analyzing the public and private behavioral health care services available to the residents of the Commonwealth. To address many of the short comings of the current mental health delivery system, MACEP put forth specific proposals to identify and remove barriers to care; hold the Department of Mental Health accountable; and to explore and implement new ways to deliver mental health care in an efficient and cost effective manner. MACEP is hopeful that these recommendations will help ensure patient access to medically necessary behavioral health services, delivered in a timely fashion and consistent with the delivery of medical/surgical services.

Save the date...

Dousing the Flames of E/M Burnout
Monday, April 7, 2014
8 AM - 2 PM
Massachusetts Medical Society
860 Winter Street, Waltham, MA 02451

MACEP is planning a conference designed to help members prevent and combat emergency physician burnout. This one-day educational forum will enable Massachusetts emergency physicians to learn from national and local experts in addition to developing strategies for improving their own resilience to stress and for creating a healthier ED workplace.

Thanks to a chapter grant from ACEP, there will be no cost to ACEP members to attend. For more information and to register go to www.macep.org.

DOUSING THE FLAMES
OF EMERGENCY MEDICINE BURNOUT

MACEP Call for Volunteers

MACEP is seeking members who are interested in serving on committees. Committee membership terms are one year, and most committees usually meet four times per year. If you would like to join a committee, please contact MACEP at tpearson@macep.org or 781-890-4407.

Education Committee monitors and develops CME programs throughout the year. Examples of courses offered are Ultrasound, Reimbursement & Coding, Resident Night, and the Annual Meeting.

EMS Committee develops, supports and implements MACEP positions on EMS issues.

Government Affairs Committee supports MACEP's PAC and networking with state legislators. Key issues are identified for action and strategies are developed to ensure a positive practice environment.

Membership Committee works to develop services to members and potential MACEP members. Membership recruitment and retention are the committee's objectives.

Public Health Committee works to enhance the recognition and effective application of public health activities as part of EM practice by collaborating with coalitions, organizations, and individuals with similar interest.

Reimbursement Committee advocates for fair compensation for all E/M Physicians. Monitors activities of third party payers in cooperation with such groups as MMS, other state chapters and national ACEP. Develops annual Reimbursement & Coding Conference.

MACEP Launches New Website and Member Community

Have you visited www.macep.org lately? Have you noticed anything different? MACEP has launched a new website!

Here is what you'll find on the new site:

What's new?
- New Member Only section with discussion forums
- Upcoming events Calendar
- Recent Twitter posts
- Easy to follow us on Twitter and like us on Facebook

Members, if you are visiting the site for the first time, please log in gain access to the Members Only section. Your user ID is your email address and your temporary password is your ACEP Membership ID Number. If you do not know your ID #, select "forgot my password."

You will be able to update your member profile, use the member directory, and join in a discussion forum

What can I find in the Members Only section of the Web site?

This section was designed with you – our members – in mind, to provide you with an easy-to-use and informative resource. Here, members have complete access to their profiles plus an easy way to register for meetings and programs.

Within the Members Only section, you will be able to:
- Manage your account, including updating your contact information
- Register for meetings and programs
- Access updated Member Directories to find members
- Join an online Discussion Forum about topics of interest to you

MACEP's member-only online discussion forum allows MACEP members to network and communicate with colleagues. Have expertise to share? Answer a colleague's question. Share experiences, and help each other with similar issues. The online discussion forum is password protected and the best place to interact with your MACEP leaders on the issues that are important to you.

As you use this forum, please remember that you're among colleagues, and treat others as you would hope to be treated. Personal attacks and other unprofessional conduct will not be tolerated. Consult our moderation policy for more guidelines on conduct while using these forums.

Also, you will find information on who is representing you on the MACEP board of directors and various committees. Take a look at the various ways you can get more involved with MACEP. Please contact the MACEP office at tpearson@macep.org or 781-890-4407 if you have any questions about the website.

Case Management: Acute Angle Glaucoma

Boston Medical Center, Department of Emergency Medicine
Kathleen C. Olsen, MD, Resident Author
Jasmine C. Mathews, MD, Resident Editor
Kalpana Narayan Shankar, MD, Faculty Reviewer

CC: Headache.

HPI: A 61 year-old female with PMH of diabetes and hyperlipidemia, visiting from Morocco, presents to the ED for the second time within 24 hours for the evaluation of a headache.

During the initial ED presentation, the patient came from an outside clinic where she presented with sudden onset bilateral headache associated with an elevated blood pressure. Due to a concern for a stroke, the patient was sent to the ED for evaluation by the neurology service. Her review of systems was otherwise unremarkable including any vision changes and focal neurologic abnormalities. Her exam was notable only for a dense cataract on the right eye, which she was already scheduled for surgical removal. Her non-contrast head CT was negative for any intracranial abnormalities and was provided ketorolac and promethazine with complete resolution of symptoms. She was ultimately discharged home with instructions for outpatient follow-up of her blood pressure.

A few hours after discharge, the patient returned to the ED with a headache. Consistent with the initial presentation, the headache is located in the bilateral frontal region but is now focused around the right periorbital area with associated lacrimation, bilateral photophobia and nausea. The patient's review of systems is again otherwise unremarkable including any fevers, vision changes, neck stiffness and any focal neurologic abnormalities.

PMH: Diabetes, hyperlipidemia, cataract right eye.

Social: Visiting from Morocco, non-English speaking. Denies drugs, alcohol or tobacco.

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FH: Denies family history of stroke, migraines or glaucoma..

Medications: Glipizide, aspirin and metformin.

Allergies: NKDA.

PHYSICAL EXAM

Vitals: Temp 98.7 Oral, BP 149/91 HR 86 RR 16 96% on RA
Gen: Patient appears uncomfortable, alert and oriented x 3, eyes closed.
HEENT: Atraumatic, normocephalic, right pupil with dense white cataract with a non-reactive pupil, left pupil 5 mm and reactive, right globe noted to be firm on palpation, sclera injected on the right side. Intraocular pressure in the right eye measures 70mmHg and in the left eye 15mmHg. No neck stiffness.
Respiratory: CTAB, no rhales/rhonchi/wheezes.
Cardiac: RRR, no murmurs/rubs/gallops.
Abdomen: Soft, non-tender, non-distended, no rebound or guarding.
Skin: Warm, well perfused, dry, no rashes.
Neuro: No focal motor or sensory defects, cranial nerves intact except for limited right pupillary exam.

ED COURSE

The patient was given prochlorperazine with improvement in nausea and pain. Given the patient's asymmetric and elevated intraocular pressure ("IOP"), Ophthalmology was consulted and the patient was brought to the Ophthalmology clinic for further evaluation and treatment.

Ophthalmology Clinic: A thorough eye exam was performed by the ophthalmologist. The right eye showed diffuse conjunctival injection, with corneal edema and clouding. The anterior chamber of the right eye was shallow and the iris was fixed. The lens had a white, dense cataract. The right eye visual acuity was to hand motion only, and the left eye visual acuity was 20/50. Extra ocular movements were intact bilaterally. Pupillary exam showed a fixed, mid-dilated pupil on the right, and a reactive a 4mm pupil on the left. The patient's intraocular pressures were 74mmHg in the right eye and 17mmHg in the left eye. The ophthalmologist's physical exam confirmed the diagnosis of acute angle closure glaucoma ("AACG"), an ophthalmologic emergency.

The ophthalmologist administered oral acetazolamide and multiple eye drops including dorzolamide and timolol combination drops and brimonidine tartrate without adequate improvement of IOP. The right pressures were persistently elevated above 50mmHg so the patient then underwent a laser peripheral iridotomy ("LPI") on the right eye, to allow drainage of aqueous humor to decrease pressure. The LPI effectively lowered the pressure of the right eye to 16mmHg with complete resolution of symptoms.

The patient was discharged home on prednisolone ophthalmic and two eye drops, brimonindine and the combination drop of dorzolamide and timolol. She was scheduled to follow up the following morning in Ophthalmology clinic for IOP checks. At time of discharge from the ED, the patient's IOP in the right eye was 26mmHg.

FOLLOW-UP CLINIC VISIT

The following day in Ophthalmology clinic, the patient's repeat IOP in each eye was 10mmHg. The patient's right eye visual acuity improved to counting fingers, which was noted to be baseline according to Ophthalmology records from one month prior.
One month later, status post cataract extraction, the patient's vision improved from counting fingers to 20/40 in her right eye and she was scheduled for a LPI of the left eye. Despite the delayed diagnosis of acute angle closure glaucoma, the patient did not experience any long-term deleterious effects on her vision.

What is AACG?

Glaucoma is a non-specific term for ocular diseases that cause an optic neuropathy associated with a visual field defect. This typically, but not always, results in increased IOP.[1] AACG is a serious ophthalmologic condition defined by its specific anatomy and pathophysiology. Current consensus among ophthalmologists defines normal intraocular pressure as that between 10 to 21mmHg. AACG is a form of glaucoma resulting in a rapid increase in IOP greater than 21mmHg that can lead to vision loss due to damage of the retinal and optic nerve.[2] It is due to an imbalance between aqueous humor production and drainage. Typically, the pressure increases due to a block in aqueous circulation. The ciliary body produces the aqueous humor that flows from the posterior circulation to the anterior chamber where it is absorbed in the trabecular meshwork. If there is an obstruction of the aqueous humor outflow to the drainage angle, rapid increase in pressure occurs causing the aforementioned symptoms.[3] The outflow may be blocked by the peripheral iris or lens.

AACG is an ocular emergency and requires immediate treatment. Due to the multitude of symptoms it can often be misdiagnosed.[4] Without appropriate treatment, morbidity includes vision loss and blindness which may occur within hours.

Who gets AACG?

There is an increased risk of AACG in the elderly. As a patient ages, the lens increases in size, and the anterior chamber becomes increasingly shallow.[5,6] Females, East Asians and Inuit people are at an increased risk due to an anatomically shallower anterior chamber. People of European descent are at lower risk. In Singapore, the

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prevalence of acute angle closure in population over 40 is 2.2% while the European prevalence is 0.1% or less in the over 40 population.[7] The shallow anterior chamber will cause increased contact between the lens and the iris and reduce the outflow of aqueous humor. AACG occurs between 1 and 40 out of every 1000 Americans depending on ethnicity.[8] As populations age the prevalence of AACG also increases. A study out of Kumejima, Japan quotes the prevalence primary angle glaucoma, not specifically AACG, as 2.04 % in patients 40-49 years of age, 8.66% in patients 60-69 years of age, and 10.34% in people age 70-79.[9]

How is AACG diagnosed?

AACG is diagnosed based on clinical presentation and measurement of IOP. AACG attacks are triggered by pupillary dilation with subsequent development of foggy vision or seeing "halos" around lights. The "halos" are due to the IOP increase causing the cornea to become edematous and less transparent. Patients will also report symptoms of severe pain in the affected eye and/or a frontal or periorbital headache that is often associated with nausea and vomiting.[4] The clinical signs of AACG include conjunctival redness, corneal edema, a shallow anterior chamber and a mid-dilated pupil that does not react well to light.

Diagnosis can be confirmed by measuring IOPs. In AACG it can increase to over 50mmHg in an acute attack. If tonometry is not available, each globe should be palpated, and the affected eye should feel firmer than the unaffected eye.[10] The Tono-Pen was used in the ED to check this patient's IOP. The formal diagnosis of AACG requires two of the following symptoms: ocular pain, nausea/vomiting, and a history of intermittent blurring of vision with halos. The definition also requires three of the following physical signs: IOP greater than 21mmHg, conjunctival injection, corneal epithelial edema, mid-dilated, non-reactive pupil, and shallow chamber.[7] This patient presented with ocular pain, nausea, and elevated IOP, corneal edema and a non-reactive pupil.

Similar to this case, AACG can often be missed on initial presentation. Occasionally, the patient does not present with pain or may not notice visual changes. AACG has been misdiagnosed as a migraine, temporal arteritis, subarachnoid hemorrhage and even as non-specific abdominal pain.[5] Visual acuity should be checked on all patients with a headache since patients may not realize they have a decrease in vision. Diagnosis was difficult in this patient given her baseline poor visual acuity secondary to a known cataract and the lack of vision changes or halos.

What is the treatment of AACG?

Treatment of AACG is based on the two principles of: 1) decreasing the production and 2) improving the outflow of aqueous humor. (See Table 1) There are no trials comparing medical treatment options, and recommendations are based on clinical experience.[11] To block production there are multiple agents including beta blocker (0.5% timolol drops), alpha agonists (apraclonidine 1% or brimonidine 0.1%-0.2% drops) and carbonic anyhdyrase inhibitors such as acetazolamide. Pilocarpine is a parasympathomimetic miotic agent that constricts the iris and facilitates outflow of the aqueous humor. However, pilocarpine is not effective unless the IOP is <40mmHg.[5] If the pressure is markedly elevated, pilocarpine is ineffective due to pressure-induced ischemic paralysis of the iris.[4] IV mannitol lowers the volume of vitreous humor by increasing osmolarity of the blood and drawing fluid from the vitreous body in order to subsequently lower IOP. Topical steroids may also be given to decrease secondary inflammation and reduce optic nerve damage.[7] Additionally, it is beneficial to keep patients in the supine position as long as possible to allow gravity to help decrease IOP.

An emergent referral to Ophthalmology is required. If a delay in Ophthalmology consultation is expected, corneal indentation has been historically described and recently validated as a rapid and effective method in the early management of primary angle closure. This is a non-invasive technique of compressing the inferior cornea using a blunt end such as the bud of a cotton tip. The process of applying pressure to the cornea forces the aqueous into the peripheral anterior chamber and opens the drainage angle. This technique may be a first-line management in rural settings that have limited resources and may break an episode.[12] Alternatively, ocular massage through a closed eyelid can be performed while waiting if no other treatment reduces IOP.[8, 13]

Definitive treatment is laser peripheral iridotomy or surgical iridotomy done by an ophthalmologist. The LPI creates a small hole in the peripheral iris that acts as an outflow track for the aqueous humor, which will equalize the anterior and posterior pressures.[14] As Ophthalmology recommended in this case, both eyes should be treated based on an increased risk of the unaffected eye to develop AACG in the future due to anatomic predisposition.[11]

Are there treatments that should be avoided in AACG?

Until patients have the LPI done on the unaffected eye, they should avoid medications that could trigger an attack or pupillary dilatation. These medications include sympathomimetics, anticholinergics, antidepressants, and some anticonvulsants.[8]

What kind of follow-up care is required for these patients?

AACG is an ophthalmologic emergency and if an ophthalmologist is not available the patient should be transferred for further treatment. Even after definitive treatment with LPI, one third of patients will require further medical management.[8] If patients receive osmotic agents, electrolytes and volume status should be monitored closely.

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Visit our website for more information about our volunteer opportunities, programs, upcoming events and more!

www.macep.org

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Patients will also need to return for immediate follow up in Ophthalmology clinic for subsequent pressure checks and also for LPI of the unaffected eye. If there is any concern regarding continued care at home or return for follow up, patients should be admitted for monitoring. Family members should also be screened for shallow anterior chambers.

What is the prognosis for patients suffering from AACG?

The prognosis of patients with AACG varies depending on the ethnicity, duration of symptoms, and severity of symptoms.[15] In Caucasian patients, IOP is controlled with LPI alone 65-76% of the time, while patients of Asian descent typically need medications after LPI.[8] Prompt treatment and referral for LPI can improve outcomes. Patients who have significant visual loss from the ischemia associated with AACG will unlikely regain vision. The faster patients with AACG are identified and treated, the better the outcome. Untreated glaucoma can result in permanent blindness.

Summary

AACG is an ophthalmologic emergency. The damage to the optic nerve caused by the elevated IOP is irreversible and, therefore, early diagnosis is key. The diagnosis of AACG should be based on the aforementioned clinical symptoms and signs on exam, confirmed by tonometry requiring emergent ophthalmology referral. In the absence of a readily available Ophthalmology, emergent treatment in the ED should be initiated with agents used to block aqueous humor production or aid in aqueous humor outflow.

■■■

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Table 1: Treatment of AACG

Treatment of Acute Angle Closure Glaucoma[4, 16]	**Treatment Mechanism**		
	Decrease Production of AH	Increase Outflow of AH	Other
Topical beta-blocker (0.5% timolol maleate), one drop	**x**		
Topical alpha-agonist (0.5% apraclonidine), one drop	**x**		
Topical steroid (Pred Forte 1%) one drop q15 minutes x 4 doses			**x**
Carbonic Anhydrase inhibitor (Acetazolamide) 500 mg PO or IV	**x**		
Mannitol 1 to 2 g/kg IV			**x**
Topical pilocarpine 1% to 2%, one drop qid once IOP < 40mmHg		**x**	

AH= Aqueous humor

MASSACHUSETTS COLLEGE OF EMERGENCY PHYSICIANS

Calendar of Events

2013-14

January 28, 2014
MACEP Monthly Meeting
Marriott Courtyard Hotel
Marlboro, MA
4:30 - 6:30 PM

February 25, 2014
MACEP Monthly Meeting
Marriott Courtyard Hotel
Marlboro, MA
4:30 - 6:30 PM

March 25, 2014
MACEP Monthly Meeting
Marriott Courtyard Hotel
Marlboro, MA
4:30 - 6:30 PM

April 7, 2014
Dousing the Flames of
Emergency Medicine Burnout
MMS Conference Center
Waltham, MA
7:30 AM - 3:30 PM

May 7, 2014
MACEP Annual Meeting
MMS Conference Center
Waltham, MA
8 AM - 2 PM

For more information, about any of these upcoming events, call MACEP at (781) 890-4407 or visit our website at www.macep.org.