

Systemic Considerations in Glaucoma Therapy

Glaucoma medical therapy has evolved significantly over the past decade and overall has become safer and more effective compared to that used in the past. In Pennsylvania, as in many other states, non-physicians (optometrists) now have prescribing rights for topical glaucoma medications. Since many glaucoma patients may not be under the care of ophthalmologists, primary care physicians need to be aware of the potential side effects and issues of topical glaucoma therapy.

The mainstay of glaucoma therapy has become the prostaglandin analogues. These include latanoprost (Xalatan), travoprost (Travatan) and bimatoprost (Lumigan). These agents have minimal systemic effects with headache in some younger patients prone to migraines being the most common. The majority of the side effects are local to the eye and periocular area. Red eyes (hyperemia), periocular coloration, and eyelash growth are the most commonly encountered side effects. These side effects are not safety related and are reversible and should not be confused with infections or allergies. Treatment is palliative with use of artificial tears and instruction to wipe away excess eye drops from the face after dosing.

Non-selective beta blockers such as timolol maleate (Timoptic, Cosopt) are used by 20% of patients and have a potential wide range of systemic side effects. Most commonly encountered are exacerbation of restrictive airway disease, bradycardia, hypotension, and exercise intolerance. Other possible side

effects include depression, impotence, hair loss and masking of hypoglycemia. These side effects can be subtle and tend to increase in frequency with duration of therapy.

Alpha2 agonists like brimonidine (AlphaganP) are used by about 10% of patients. The only absolute contraindication for these agents is use in patients on MAO inhibitors. Other common systemic side effects are fatigue, drowsiness, and dry mouth. These are most commonly seen soon after initiation of the drug and tend to improve over time. Those most likely to have these side effects are lower body weight individuals and children. Late ocular allergy may develop after months on the drug and may be confused with conjunctivitis. Discontinuation of the drug results in resolution of these side effects.

Carbonic anhydrase inhibitors (CAIs) are used both in systemic and oral preparations. These drugs are sulfonamides and should be used with caution in patients with sulfa allergies. Aceto-

Robert Noecker, MD, MBA

UPMC Eye Center
Pittsburgh, PA

Primary Care Update from PA's Ophthalmologists

zolamide (Diamox) and other systemic forms are associated with parasthesias, nausea, fatigue, depression and metabolic acidosis. Rare complications include hypoplastic anemia. The topical CAI preparations, such as dorzolamide (Trusopt, Cosopt) have minimal systemic effects, but there are concerns about their use in patients with sulfa allergies and possible idiosyncratic reactions. Metallic taste and ocular stinging are the most common side effects of the topical preparations.

Volume 12 May 2007

777 East Park Drive, PO Box 8820
Harrisburg, PA 17105-8820
(717) 558-7750 phone
(717) 558-7841 fax

Medical Editors: Kenneth P. Cheng, MD
Karl R. Olsen, MD
Staff Editor: Kristi Spargo

Current Concepts in Ophthalmology (ISSN: 1069-8469, ISSN: 1936-1157) established in 1992, is an official publication of the Pennsylvania Academy of Ophthalmology.

All medical content correspondence should be directed to Robert J. Noecker, MD, at UPMC Eye Center, 302 Lothrop St., Suite 820, Pittsburgh, PA 15213.

All other correspondence should be directed to the Staff Editor, Kristi Spargo, at pao@pamedsoc.org

Copyright 2007: Pennsylvania Academy of Ophthalmology

All material subject to this copyright may be photocopied only for noncommercial scientific or educational purposes. The opinions of authors do not necessarily represent the policy of the publisher.

Medical glaucoma therapy is safer than ever, however, systemic side effects are possible. Familiarization with some of the commonly encountered problems will help ensure efficient care and avoidance of unnecessary interventions or additional therapies.

References

Hejkal TW, Camras CB. Prostaglandin analogs in the treatment of glaucoma. *Semin Ophthalmol.* 1999 Sep;14(3):114-23.

Lewis PR, Phillips TG, Sassani JW. Topical therapies for glaucoma: what family physicians need to know. *Am Fam Physician.* 1999 Apr 1;59(7):1871-9, 1882.

Taniguchi T, Kitazawa Y. The potential systemic effect of topically applied beta-blockers in glaucoma therapy. *Curr Opin Ophthalmol.* 1997 Apr;8(2):55-8.