

Appendix 9: Drug-Induced Ophthalmic Disorders

INTRODUCTION

TABLE A9-1

Common Drug-Induced Ophthalmic Disorders, Causative Agents, and Treatment Recommendations

Reactions	Causative Agents	Treatment Recommendations
Cataracts	Alkylating agents (busulfan) Antiestrogens (tamoxifen) Corticosteroids Statins	Surgical removal of cataract
Dry eye	Alpha-1 antagonists (alfuzosin , tamsulosin , terazosin) Alpha-2 agonists (apraclonidine , brimonidine) Anticholinergics (atropine , homatropine , hyoscine , ipratropium , tolterodine) Anticonvulsants (valproic acid) Antihistamines (cetirizine , chlorpheniramine , diphenhydramine , doxylamine) Antimalarials (chloroquine , hydroxychloroquine) Antineoplastics (busulfan , cyclophosphamide) Antipsychotics (thioridazine) Anxiolytics (lorazepam) Beta agonists (acebutolol) Beta blockers (atenolol , propranolol) Benzalkonium chloride Bisphosphonates Cannabinoids (dronabinol) Systemic decongestants (pseudoephedrine) Diuretics (furosemide , indapamide , metolazone) Oral contraceptives Retinoids (isotretinoin) Topical decongestants (naphazoline) Tricyclic antidepressants (amitriptyline)	Nonpharmacologic therapy: (1) warm compresses, (2) increase fluid intake, (3) use humidifier Increase tear volume: (1) consider artificial tears or other topical lubricants, (2) punctal occlusion Decrease inflammation: (1) 0.05% cyclosporine ophthalmic drugs, (2) LFA-1 antagonist ophthalmic drops, (3) short-term ophthalmic glucocorticoids Medication changes: (1) discontinue medication, (2) use preservative-free ophthalmic drops
Floppy iris syndrome	Alpha-1 antagonists Benzodiazepines Chlorpromazine	Preoperative screening for previous and/or current use of causative agents Consider cataract surgery before initiation of alpha-1 antagonist therapy Intracameral alpha-adrenergic agonists (epinephrine , phenylephrine)

	Donepezil Duloxetine Finasteride Quetiapine	Intraoperative devices: (1) iris retractors, (2) OVDs, (3) pupil expanders
Optic neuropathy	Amiodarone Ethambutol Linezolid PDE-5 inhibitors (avanafil, sildenafil, tadalafil, vardenafil)	Discontinuation of causative drug as medically appropriate Regular ophthalmic examinations
Retinopathy	Aminoquinolines (hydroxychloroquine, chloroquine) Antiestrogens (tamoxifen) Phenothiazines (chlorpromazine, thioridazine) Retinoids (isotretinoin)	Monitor via regular ophthalmic examinations, patient-reported signs and symptoms Vision loss is irreversible

LFA-1, lymphocyte function-associated antigen 1; OVDs, ophthalmic viscosurgical devices; PDE-5, phosphodiesterase 5.

(See Chapter e112, *Drug-Induced Ophthalmic Disorders*, authored by Rena Gosser, for a more detailed discussion of this topic.)