Topic #9: Ocular Pharmacology

This post describes the ophthalmology learning objectives related to ocular pharmacology that are covered on the Medical Council of Canada Qualifying Examination (MCCQE). The resources presented here should be sufficient to help you pass the MCCQE exam and have a basic understanding of ocular pharmacology.

Learning Objectives

9(a): List the most important ocular side effects of systemic drugs including:

- Corticosteroids (oral, topical, injected, inhaled)
- Hydroxychloroquine
- Sympathomimetic & anticholinergic medications
- Topiramate
- Amiodarone
- Aminoquinolines

9(b): List the common ocular medications that can have systemic side effects and contraindications to their use:

- Fluorescein
- Topical anesthetic
- Dilation drops (contraindicated in angle closure glaucoma)
- Topical beta blockers
- Topical alpha-2 adrenergic agonists
- Topical anticholinergics

Primary resources

These resources cover learning objectives a and b, meeting all of the learning objectives.

- Ocular side effects of systemic drugs (Dr. Saurabh Sharma): https://youtu.be/Qw9zm0PjDj8
    - Objective a
- Systemic effects of common ocular medications: https://www.geriatricfastfacts.com/fast-facts/systemic-effects-ocular-medications-i-glaucoma-and-pupillary-dilation
    - Objective b

Additional resources

These resources provide more comprehensive information about the learning objectives and will allow you to expand on your understanding.

- Ocular side effects of systemic drugs (Dr. Richard Witlin): https://www.youtube.com/watch?v=46oZfVPO8-s

- Ocular side effects of systemic drugs (AAOPT): https://www.aaopt.org/docs/knowledge-base/outline25402.doc?sfvrsn=a89ef4ac_0
- Principles of Ocular Pharmacology (Pharmacologic Therapy of Ocular Disease): https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7122473/
- Fluorescein-Proparacaine Side Effects (WebMD): https://www.webmd.com/drugs/2/drug-2442/fluorescein-proparacaine-ophthalmic-eye/details/list-sideeffects

Other Undergraduate Medicine Resource Pages

Topic #1: Describe the anatomy of the eye and the visual system

Topic #2: Perform a basic eye exam

Topic #3: Evaluate a patient with acute vision loss

Topic #4: Evaluate a patient with chronic vision loss

Topic #5: Evaluate a patient with a red or painful eye

Topic #6: Evaluate a patient with eye trauma

Topic #7: Evaluate a patient with an eye movement abnormality, diplopia, or pupillary disorders

Topic #8: Evaluate pediatric ophthalmic presentations

Topic #10: Evaluate a patient with ocular manifestations of systemic disease