Chapter 43

Drugs Used to Treat Glaucoma and Other Eye Disorders

Learning Objectives

Describe the normal flow of aqueous humor in the eye

Identify the changes in normal flow of aqueous humor caused by open-angle and closed-angle glaucoma

Anatomy and Physiology of the Eye

The eye is an organ that is used for vision or allowing the ability for sight

Eyeball is the globe of the eye

The eye has three layers

Anatomy and Physiology of the Eye (cont’d)

Anatomy and Physiology of the Eye (cont’d)

The cornea
- Outermost part of the eyeball
- Transparent, allows light to enter
- Lacks blood vessels
- Diffused air provides oxygen to the cornea
- Resistance to infections
- Contains sensory fibers that release pain if damaged
- Injury to corneal tissue is replaced by scar tissue

- Normal Drainage System of the Eye
- Aqueous humor flows between the lens and the iris into the anterior chamber of the eye
- Aqueous humor drains through channels located near the cornea and the sclera and then drains into the venous system of the eye

- Major Types of Glaucoma
  - Primary
    - Closed-angle glaucoma
    - Open-angle glaucoma
  - Secondary
    - Open angle

- Effect of Light or Ophthalmic Agents on the Iris of the Eye

- Learning Objectives
  - Explain the baseline data that should be gathered when an eye disorder exists
  - Develop teaching plans for a person with an eye infection and a person receiving glaucoma medication
• Review the correct procedure for instilling eye drops or eye ointments
• General Considerations for Topical Ophthalmic Drug Therapy
• Topical application
• Proper administration
• Safety and color coding
• Drugs Used to Treat Glaucoma and Other Eye Disorders
• Osmotic agents reduce intraocular pressure
• Nursing process
• Surgery
  ■ Patient education
  ■ See Table 43-1
• Side Effects from Osmotic Agents
• Thirst
• Nausea
• Dehydration
• Electrolyte imbalance
• Headache
• Circulatory overload
• Osmotic Agents
• Drugs Used to Decrease IOP
  • Carbonic anhydrase inhibitors Table 43-2
  • Cholinergics Table 43-3
  • Phospholine iodide
  • Adrenergic agents Table 43-4
  • Beta-adrenergic blocking agents Table 43-5
  • Prostaglandin agonists Table 43-6

Anticholinergic Agents

• Use—visual exams

• Action
  ■ Visualization of intraocular structures
  ■ Reduce uveal tract inflammation

Additional Ophthalmic Agents

• Antifungal agents
• Antiviral agents
• Antibacterial agents
• Antihistamines
• Antiallergic agents
• Sodium fluorescein
• Artificial tear solutions
• Ophthalmic irrigants
• Vascular endothelial growth factor antagonist