Common Drugs & Routes of administration in Ophthalmology

Dr Rajat Mohan Srivastava
Department of Ophthalmology
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- No financial interest involved.
- The images of drugs in this presentation are representational and for educative purpose only.
Route of Administration

- Bio-availability
- Pharmacokinetics
- Pharmacodynamics

- Common Routes:
  - Oral
  - Parenteral

Efficacy vs Toxicity
Eye

Special considerations

• Blood Ocular Barrier

• Corneal Physiology (avascular)

BAB: Blood Aqueous Barrier
BRB: Blood Retinal Barrier
Drug Routes:

1. Oral
   I. Antibiotics/NSAIDS
   II. Acetazolamide/Glycerol

2. Parenteral
   I. Intravenous (Antibiotics/Mannitol)
   II. Intramuscular (rare-Inj. Botulinum Toxin)

3. Topical (most common)
   I. Eye Drops
   II. Eye Ointment/Gel

4. Subconjunctival Injections

5. Subtenon Injections

6. Retrobulbar

7. Intracorneal (Voriconazole injections)

8. Intracameral (Anterior Chamber)

9. Intra-vitreal (Vitreous)
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Limitations
- Reflex Tearing
- Limited Volume
- Naso-lacrimal Passage
- Complex Absorption
- Compliance
4. Subconjunctival Injections (antibiotics)

5. Subtenon Injections

6. Peribulbar/Retrobulbar Injection (lignocaine)

Bypassing Corneal & Conjunctival Epithelium
7. Intracorneal (stromal)  
   (Voriconazole injections)

8. Intracameral  
   (Anterior Chamber)

9. Intra-vitreal (Vitreous)  
   (Anti-VEGF/Triamcinolone/Antibiotics)
Recent Advancements:

- Supra-choroidal implants (Dexamethasone)
- Subretinal Injections: Gene & Cell therapy
  - Age Related macular Degeneration/ Retinitis pigmentosa
- Intra-vitreal Implants (steroid implants/ ganciclovir implants)
To summarise,
Thank You.

rajatmohansrivastava@kgmcindia.edu