

OFT 851 MECHANISM OF DRUG ACTION IN OCULAR TISSUE

Workload: 30 hours

Credits: 02

Nature: Optional Master and PhD

Professors: Sebastião Cronemberger Sobrinho; Daniel Vitor de Vasconcelos Santos; Marco Aurélio Lana Peixoto; Márcio Bittar Nehemy

Discipline Syllabus: The objective of this course is to qualify the student to understand the mechanism of action, therapeutic and collateral effects of intraocular drugs used in single injections or by extended release systems. To analyze criteria to determine the maximum tolerable dose for ocular tissues and toxic doses of drugs potentially useful in the treatment of vitreoretinal diseases, such as sub retinal neovascular membrane, chorioretinal dystrophies and proliferative vitreoretinopathy. Establish mechanisms of action, concentration and possible toxicity of different dyes to improve visibility of vitreoretinal structures during vitreoretinal surgery. To study the general mechanism of drugs that alter intraocular pressure; Drugs that facilitate aqueous humor flow through the conventional route; Drugs that facilitate the uveoscleral flow; Drugs that decrease the production of the aqueous humor; Fundamentals of tonography; Fluorophotometry fundamentals; Fluorophotometry and volume-minute aqueous humor; Clinical applications of tonography and fluorophotometry.

Bibliographic references:

1.Foureaux G, Franca JR, Nogueira JC, Fulgêncio Gde O, Ribeiro TG, Castilho RO, Yoshida MI, Fuscaldi LL, Fernandes SO, Cardoso VN, Cronemberger S, Faraco AA, Ferreira AJ. Ocular Inserts for Sustained Release of the Angiotensin-Converting Enzyme 2 Activator, Diminazene Aceturate, to Treat Glaucoma in Rats. PLoS One. 2015 Jul 23;10(7):e0133149.

2. Diniz-Filho A, Delano-Wood L, Daga FB, Cronemberger S, Medeiros FA. Association Between Neurocognitive Decline and Visual Field Variability in Glaucoma. *JAMA Ophthalmol.* 2017 May 18.

3. Cronemberger S, Calixto N, Avellar Milhomens TG, Gama PO, Milhomens EG, Rolim H, Mendonça SC. Effect of intraocular pressure control on central corneal thickness, horizontal corneal diameter, and axial length in primary congenital glaucoma. *J AAPOS.* 2014 Oct;18(5):433-6.

4. Franca JR, Foureaux G, Fuscaldi LL, Ribeiro TG, Rodrigues LB, Bravo R, Castilho RO, Yoshida MI, Cardoso VN, Fernandes SO, Cronemberger S, Ferreira AJ, Faraco AA. Bimatoprost-loaded ocular inserts as sustained release drug delivery systems for glaucoma treatment: in vitro and in vivo evaluation. *PLoS One.* 2014. Apr 30;9(4):e95461.

5. Veloso CE, Kanadani TM, Pereira FB, Nehemy MB. Vitreomacular Interface after Anti-Vascular Endothelial Growth Factor Injections in Neovascular Age-Related Macular Degeneration. *Ophthalmology.* 2015 Aug;122(8):1569-72.

6. Veloso CE, de Almeida LN, Recchia FM, Pelayes D, Nehemy MB. VEGF gene polymorphism and response to intravitreal ranibizumab in neovascular age-related macular degeneration. *Ophthalmic Res.* 2014;51(1):1-8.