

ABSTRACT:

The present work related to create smaller eye drops of glaucoma medications of the drug Timolol Maleate by reducing the dropper tip design. Most ocular diseases are treated with topical application of eyedrops. After instillation of an eyedrop, typically less than 5% of the applied drug penetrates the cornea and reaches intraocular tissues, while a major fraction of the instilled dose is absorbed and enters the systemic circulation.

Ophthalmic solutions are available in multidose or single dose administration in a wide variety of glass and plastic dropper bottles that deliver drops with a volume between 25 and 70 μL . with an average value of 40 μL . The low capacity of the precorneal area resulting in an optimal drop volume of about 20 μL and the risk of adverse systemic effects of drugs due to systemic absorption via the nasal mucosa. Biopharmaceutical and economic point of view smaller drops of 5 to 15 μL should be instilled in to eye.

The present work is carried by reducing the dropper tip by inserting glass capillary. The solutions of drug timolol maleate prepared in different concentrations by using Tween 80, i.e,0.05% & 0.1% of tween 80.The drop sizes of different marketed products analyzed with the present formulations and the concentrations of drug in each drop analyzed and compared for the monthly and annually cost of medications. The 0.1% of tween 80 with inserted glass capillary shows to be effective in terms of smaller drop size, drug concentration, total volume and effective in cost therapy for monthly and year cost.

Key words: Glaucoma, Timolol maleate, Eyedropper tip, Glass capillary, Cost effective.