3. OBJECTIVES

Topical ophthalmic dose of Levofloxacin is 1-2 drops of 0.5 % w/v solution in affected eye every 4 h and hourly in the case of severe infections.

Moxifloxacin is also a novel fourth generation fluoroquinolones with high potency against both gram-positive bacterial pathogens. It is presently available as 0.5% eye drops. It is administered at dosing interval of one drop in the affected eye three times a days for 7 days.

Conventional ophthalmic drug delivery system results in poor bioavailability and poor therapeutic response. Conventional ophthalmic drug delivery is associated with patient noncompliance because of high frequency of eye drop installation. Only a small fraction of topically applied dose reaches the inner eye, with the actual amount dependent on the physicochemical properties of the drug and its vehicle.

Eye infection treatment needs the drug residence for longer duration in eye to treat inflammation, so that the damage on optic nerve will be less. The concept to be investigated involves the development of Sustained gel forming Ophthalmic Drug Delivery System which will deliver the fraction of drug for longer duration with increased corneal residence time and improved bioavailability of the drug.

The present study aims at developing a sustained ocular drug delivery system of Levofloxacin and Moxifloxacin based on concept of gel forming systems and ocular insert system, to treat external infection of eye such as acute and sub acute conjunctivitis, bacterial infection and karato conjunctivitis.

We have tried to formulate sustained ophthalmic formulation of levofloxacin and moxifloxacin using combination of different polymers in different concentration to achieve desired drug release.

The prepared sustained ophthalmic gel formulation will have an efficient sustained release effect to provide an advantage of only once or twice daily administration.
The combination approach along with use of viscosity enhancer can be effectively used as gel forming vehicle. The total polymer concentration required to achieve desirable rheological and in vitro release property will be less.

The formulation will sustain the drug release up to 8 h. The prepared formulation will be safe for ocular use and will have an improved patient compliance for patients. The bioavailability of the prepared formulation will be increased manifold than that of the conventional eye drops because of increase in resident time.