

4th Article:

Topical Gatifloxacin 0.5% and Moxifloxacin 0.5% as a Prophylactic Measure before Intraocular Surgery

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Abstract:

Aim: To compare equal concentrations (0.5%) of moxifloxacin and gatifloxacin ophthalmic solutions as regards conjunctival bacterial reduction as well as anterior chamber penetration. **Methods:** In the present prospective randomized study, 100 patients were included and divided into two groups. Group A; received moxifloxacin hydrochloride ophthalmic solution and group B; received gatifloxacin 0.5% ophthalmic solution. The patients were instructed to use their antibiotic drops 4 times a day for 3 days before surgery and 5 times with 30 minutes intervals on the day of surgery. Two conjunctival swabs were obtained; one prior to instillation of antibiotic and the second 30 minutes after instillation of the last antibiotic drop. Specimens were sent for culture and susceptibility testing. At the time of surgery 0.1 ml of aqueous fluid was aspirated and aqueous concentration of fluoroquinolones was identified using reverse-phase high-pressure liquid chromatography assay technique. **Results:** The commonest flora isolated were Coagulase negative Staphylococcus (32.9%) followed by Staphylococcus aureus (24.8%), Corynebacterium diphtheria (19.1%). Moxifloxacin aqueous concentration was higher compared to gatifloxacin (1.75 ± 0.98 SD and 0.75 ± 0.22 SD, respectively). This 2.3 folds difference in aqueous humor antibiotic concentrations was statistically significant ($P = <0.001$). There was significant difference between the means of conjunctival colony forming unit after antibiotic administration in both study groups (2.17 ± 1.54 SD in moxifloxacin group and 1.56 ± 1.09 SD in gatifloxacin group). **Conclusion:** Moxifloxacin 0.5% was found to penetrate anterior chamber more than gatifloxacin 0.5% enforcing its use for prophylaxis before intraocular surgeries. However, gatifloxacin 0.5% eye drops was able to reduce conjunctival bacterial load more supporting its use for prophylaxis before extraocular and refractive surgeries.