

Pefloxacin Levels in Rabbits Aqueous Humor after the Co-Administration of Digoxin, Propranolol, Nifedipine, Dexamethasone, Indomethacin and Diclofenac as Eye Drops

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INTRODUCTION

Severe endophthalmitis is a devastating infection, and intravitreal antibiotic therapy is limited, by retinal toxicity. Pefloxacin, a fluoroquinolone is often used for the treatment of various ophthalmic infections. The target of the present study was to investigate the probable pharmacokinetic interaction in the eye between, pefloxacin and other co-administered drugs.

MATERIAL AND METHODS

Fifty six New Zealand white rabbits divided in 8 groups were treated as follows

Group I - control (c) group: received 0.5 ml NaCl 9% subconjunctivally

Group II: received 0.5 ml (0.250 mg/ml) Digoxin (Di) subconjunctivally

Group III: received 0.5 ml (1 mg/ml) propranolol (Pr) subconjunctivally

Group IV: received 0.5 ml (0.1%) Diclophenac (Dc) subconjunctivally

Group V: received 0.5 ml (0.5%) Nifedipine (Ni) subconjunctivally

Group VI: received 0.5 ml (0.4%) Dexamethasone (Dx) subconjunctivally

Group VII: received 0.5 ml (25 mg/ml) Indomethacin (In) subconjunctivally

Group VIII: received 2 eyedrops (1%) Indomethacin (Inc) subconjunctivally

All groups: received 100 mg/Kg Pefloxacin (PF) IV. The aqueous humor (Ah) and serum (S) levels of PF in µg/ml were measured by agar diffusion method in 2 and 4 hours after the injection.

RESULTS AND CONVLUSIONS

Pefloxacin levels in two and four hours in µg/ml (Table).

From the above results it is concluded that although there are significant differences in the levels between the control group and some of the coadministered drugs, the achieved concentrations are well above the MICs of the most common involved microorganisms of eye infections.

Table

		2 hours						
	M	Di	Pr	Dc	Ni	Dx	In	Inc
S	23.4	23.8	18.9 (p=0.001)	24.3	22.1	26.16(0=0.05)	30.6 (p<0.001)	22.07
Ah	8.5	9.2	10.6 p<0.001)	9.7 (p<0.0)	8.7	8.7	18.2 (p=0.0001)	8.9
		4 hours						
	M	Di	Pr	Dc	Ni	Dx	In	Inc
S	11.2	7.6 (p=0.00)	6.6 (p<0.01)	12.2	9.7 (p<0.00)	16.2 (p<0.00)	19.3 (p=0.001)	9.7
Ah	4.1	3.4 (p<0.05)	4.1	6 (p<0.00)	5.6 (p<0.5)	4.6	10.8 (p<0.001)	5.8 (p<0.)