عنوان مقاله:

Evaluation of cyclosporine A eye penetration after administration of liposomal or conventional forms in animal model

محل انتشار:

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خلاصه مقاله:

A lot of researches have investigated the effects of topical cyclosporine A on the eye surface layers' diseases. By now the main limitation in cyclosporine application is the low permeation of the drug into the posterior segments of the eye. The aim of present study was to formulate high permeable dosage form can be beneficial in the topical treatment of the uveitis. To reach higher corneal drug absorption and drug concentration in the posterior segments of the eye, 3 nanoliposomal formulations containing 0.5 mg/ml cyclosporine A were prepared. Liposomal formulations and the commercial product (Restasis®) were instilled in the right and left eyes of the rabbits, respectively. The rabbits were killed in the 3, 7, 14 and 28 days of study and the aqueous humor and vitreous were extracted. Mean size of liposomal formulation number 1, number 2 and number 3 were 107.2 ± 0.7, 129.3±0.9 and 144.8±1.8 nm and their zeta potential were -5.0±1.7, -5.5±2.3 and 44.6±6.2 mV, respectively. Results of ocular analysis showed that the liposomal formulations could increase the concentration of the drug in the aqueous and vitreous like Restasis®. But, in contrast with what has been expected the findings of this study implicate nanoliposomal formulations prepared could not make a significant difference in concentration of the drug in aqueous and vitreous humor compared to Restasis® (anionic microemulsion). In conclusion, we can state that liposomes with the same composition as our formulations are not more efficient than microemulsion for cyclosporine as ophthalmic drug delivery.

کلمات کلیدی:

Cyclosporine A, Nanoliposome, Restasis®, Posterior segment