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Service (sector)

Retina and Vitreous

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Subretinal Bevacizumab Detection after Intravitreal Injection in Rabbits

Abstract

Purpose. To evaluate subretinal detection of bevacizumab 2 hours after intravitreal injection of 1.25 mg in rabbit eyes.

Methods. Anterior chamber paracentesis using a 30-gauge needle was performed in nine female Dutch-belted rabbits following by removal of 0.05 mL of aqueous humor. Transscleral retinal detachment was performed with a modified 25-gauge infusion cannula connected to a bottle of balanced salt solution (BSS). The animals were divided into experimental group 1, intravitreal injection of 0.05 ml of bevacizumab (1.25 mg) using a 30-gauge needle (n=6) and the control group 2, intravitreal injection of 0.05 mL of BSS using a 30-gauge needle (n=3). Two hours after the intravitreal injection or BSS injection, subretinal fluid was aspirated and immunoassayed to detect bevacizumab. The rabbits were sacrificed by intravenous pentobarbital injection. The eyes were enucleated and fixed in 10% formaldehyde. The pars plana site at which the transscleral cannula was introduced was analyzed by light microscopy to exclude iatrogenic retinal tears. Rabbits with accidental retinal tears were excluded.

Results. Subretinal bevacizumab molecules were detected in the six eyes that received an intravitreal bevacizumab injection. No subretinal bevacizumab was detected in the control eyes. Light microscopy showed no evidence of retinal tears or holes in any rabbits used for the avastin detection and control group.

Conclusions. Bevacizumab molecules were detected in the subretinal space after intravitreal injection of 1.25 mg of bevacizumab possibly as the result of diffusion through the retina in a rabbit model.