

R1 R2 R3 PG0 PG1 Estagiário Tecnólogo
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Service (sector) Retina and Vitreous N° CEP

Comparative Study of Intravitreal Perfluoropropane gas, Tissue Plasminogen Activator, and Hyaluronidase in the Treatment of Experimental Vitreous Hemorrhage Magalhães Junior, O; Mello Filho, PAA; Mitre, J; Cardillo, JA; Morales, PH

Purpose: To evaluate the efficacy of intravitreal Perfluoropropane gas (C3F8), Tissue Plasminogen Activator (tPA), and Hyaluronidase in promoting short term clearance of a dense vitreous hemorrhage in a rabbit model.

Material and Methods: Autologous 0,4ml blood was transsclerally injected into the vitreous of 20 New Zealand white rabbits. One day later, 0,2 ml of 100 % C3F8 (group 1), 0,2 ml of saline substance (group 2), 0,2 ml (50 micrograms) of tPA (group 3), and 0,2ml (75 UI) of Hyaluronidase (group 4) were injected, into the vitreous, in one eye of 6, 4, 5 and 5 rabbits, respectively. Vitreous hemorrhage was graded based on the visibility of retinal details in each quadrant. Indirect ophthalmoscopy was performed on all animals prior to the autologous blood injection (D-1), right after the blood injection (D0), immediately after C3F8, tPa, Hyaluronidase and saline substance injection (D1), and then, twice a week ,for 63 days. Statistical analyses were performed with Friedman ANOVA and Kruskal-Wallis tests.

Results: Statistically significant reduction of the vitreous hemorrhage grade was seen in the C3F8 injected group after D12 when it was compared to the others groups. In tPa group, 80% of the rabbits (4/5) and 60% (3/5) of the Hyaluronidase group showed post lens opacities . Cornea and iris neovascularization were seen in 60 % (3/5) of the group 4 animals.

Conclusions: Intravitreal C3F8 injection promoted short term clearance of vitreous hemorrhage after two weeks and no statistically significant alteration was seen in the use of tPA and Hyaluronidase in this experimental model.