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PIBIC Last Name - Maia First Name - Mauricio Middle -

Service (sector) Retina and Vitreous N° CEP

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### **Effects of intravitreal indocyanine green injection in rabbits**

Authors: Mauricio Maia, MD, PhD, Mark O. M. Tso, MD, D. SC, Eugene de Juan, Jr, MD†, Michel E. Farah, MD‡,†Mark S. Humayun, MD, PhD† Purpose: To report clinical, electrophysiological and histological findings of different concentrations of indocyanine green (ICG) injected into the vitreous cavity of rabbit eyes. Methods: Forty-two rabbits had intravitreal injections of 0.1ml of ICG in three different concentrations: 0.5mg/ml (250mOsm), 5mg/ml (270mOsm) and 25mg/ml (170 mOsm). The opposite eyes were injected with 0.1ml of balanced salt solution (BSS). Biomicroscopy, ophthalmoscopy, electroretinography, fluorescein angiography and histological evaluation were performed. Results. Eyes injected with 0.5mg/ml of ICG had a delay in the B-wave latency on the first day after injection ( $P<0.05$ ). Eyes injected with 5mg/ml of ICG had a delay in the B wave latency and a decrease in B-wave amplitude on the first and seventh days after injection ( $P<0.01$ ); a delay in the A wave latency on the first day after injection ( $p<0.05$ ) was also observed. Eyes injected with 25mg/ml of ICG had both B and A-waves amplitude and latency abnormalities during the entire follow up ( $P<0.01$ ). Histology demonstrated a direct relation of increasing amount of retinal edema proportional to the progressive ICG concentrations. Conclusion: Intravitreal injection of ICG in rabbit eyes may impair retinal function and morphology proportionally to the progressive increment of the ICG dose.