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CHANGES OF CATALASE DURING ISCHEMIA REPERFUSION IN RAT RETINA

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Purpose : To evaluate catalase activity in Long Evans rats retina during ischemia and recirculation.

Methods : Rats were anesthetized with pentobarbital. Ischemia was induced

for 90 min by ligation of the optic nerve and recirculation was obtained by removing the ligature. Rats were sacrificed by decapitation after 15 and 120 min of recirculation. Retinas were quickly dissected from the pigment epithelium and stored at -80° C. Catalase activity was assessed by ultraviolet spectrophotometry. Enzyme activity was expressed as U/mg of protein.

Results: Enzyme activity was 7.39 ± 0.26 (n = 11) for controls, 7.67 ± 0.27 (n = 9) for 15 min recirculation, and 9.15 ± 0.45 (n = 7) for 120 min recirculation. The difference between controls and 120 min recirculation group was statistically significant (p = 0.001).

Conclusions : Catalase activity was increased in the retinas after 120 min of recirculation which may indicate a rapid activation of this H₂O₂ degrading enzyme.

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NATURAL HISTORY OF MACULAR SUBRETINAL EXTENSIVE HEMORRHAGES IN AGE RELATED MACULAR DEGENERATION

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Purpose. To precise the natural course of extensive submacular hemorrhages in age-related macular degeneration (AMD).

Methods. 68 eyes (62 patients) with subretinal hemorrhage larger than 1 disk diameter extending beneath the fovea were retrospectively reviewed. All patients, older than 55 years, presented AMD features and had no previous laser treatment. Symptoms were present for less than 3 months. Complete ophthalmologic examination included visual acuity (VA), biomicroscopic and angiographic evaluation (fluorescein and ICG).

Results. At initial examination, mean VA was 20/240 (range 20/70 to LP). During follow-up, VA worsened in 80% of the eyes with a mean final VA of 20/1250 (range 20/100 to LP). The initial size and thickness of the hemorrhage were correlated with initial and final VA. In 40 eyes (58.8%), the blood completely obscured CNV on fluorescein angiography. In 23%, ICG allowed the identification of the edges of the membrane. Anatomic outcome showed fibrous tissue proliferation in 27 eyes, atrophic scars in 13 and occurrence of a RPE tear in 13 eyes.

Conclusion. The visual outcome of the natural history of extensive submacular hemorrhages in eyes with AMD is very poor. In these eyes, a surgical approach should be considered in well selected cases.

DEVELOPMENT OF A KINETIC SLO-MICROPERIMETRY MODULE FOR FUNCTINAL MACULAR DIAGNOSTICS. STETTER M.' SENDTNER R. A.' FITZKE F. W.' and GABEL V.-P.' 'Dept. of Ophthalmology, University of Regonsburg (FRG) 'Institute of Ophthalmology, Moorfield Eye Hospital, London (UK)

Purpose: During a static SLO-microperimetry session, long series of light simuli with fixed contrasts, positions, and durations must be applied in order to find the spatial contrast sensitivity distribution and thus to characterize the patient's scotoma. This work presents a kinetic SLOmicroperimetry module, which allows a good delineation of the scotoma with considerably decreased examination time.

Methods: A computer aided control system for a Rodenstock SLO is presented, which allows the performance of kinetic microperimetry sessions. Each stimulus proceeds radially outward from the previously estimated center of the scotoma, until it is recognized by the patient. This recognition position is then stored by the computer. For each perimetry nun, the radial directions of several stimulus runs add up to a full circle, and a perimetry session includes several full-circle perimetry runs. After the examination, markers at the recognition points, which then encode the original stimulus size and contrast, are superimposed onto a digitized retinal image.

Results and Conclusions: Due to the continuous stimulus presentation during a kinetic microperimetry, each stimulus tested a whole lengthy retinal area segment, which led to reduced examination durations. Examination times of ca. 10 min for a 3x3 deg. macular foramen were found compared to ca. 30 min. using the static Rodenstock microperimetry. In addition, the projections of the spatially corrected recognition points onto a retinal image defined isopteres, which facilitates the readability of the result. In general, the recognition points showed considerable random variations, which were due to variations of the patient's motivation as well as to eye movements. The latter error source can be eliminated by a real time eye tracking system that stabilizes the stimulus with respect to the retina.

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RETINAL SENSITIVITY STUDY IN THE MACULAR HOLE

GOMEZ-ULLA F, BOLIVAR MP, CAPEANS MC, ABELENDA D, GONZALEZ F DEPARTMENT OF OPHTHALMOLOGY, University of Santingo (Spain) PURPOSE: The aim of this study was to determine the sensitivity of the retins with a macular hole measured by microperymetry with the SLO, to demonstrate the existance of an absolute central scotoms and of a new fixation point, and to study the posseible alteration of sensitivity on the ring and arround it. METHODS: We examined 15 eyes with macular holes by means of a SLO suited to perform microperimetry. Each eye was charled at the central site, the surrounding ring and the helthy retina. We also studied the fixation point of each patient. RESULTS: An absolute scotome was detected in 100% of the cases at the central vith the ring sean opticalmoscopically. In all the coincidents with the ring sean opticalmoscopically. In all the cases the fixation point was localized on the ling of the hole. CORCLUSIONS: The SLO microperimetry is a precise examination to detact and follow the evolution of little scotomas in the postarior hole.