

Poster presentation

## **Pupillometric evaluation of patients suffering from age related macular degeneration (AMD): a comparative study with electrophysiological and optical methods**

Catherine Brozou\*, Evangelia Theodoridou, Vasilios Stergiou, Dimitrios Tsiptsios, Irene Kalliolia, Dimitrios Fotiou, Maria Nakou, Charalambos Giantselidis and Evangelia Giza

Address: Laboratory of Clinical Neurophysiology, Aristotle University of Thessaloniki, Greece

\* Corresponding author

from International Society on Brain and Behaviour: 2nd International Congress on Brain and Behaviour Thessaloniki, Greece. 17–20 November 2005

Published: 28 February 2006

*Annals of General Psychiatry* 2006, **5**(Suppl 1):S323 doi:10.1186/1744-859X-5-S1-S323

### **Background**

The aim of this study was to evaluate the retinal activity in patients with retinal lesions in the macular area through the pupillary light reflexes. Pupillometric measurements were studied to this group of patients in order to estimate if the parameters measured were normal or not.

### **Materials and methods**

A total of ten subjects were included in this study: five patients with age-related macular degeneration (AMD) and five subjects with healthy eyes matching sex and age. Patients with AMD had stage 4 exudative AMD with presence of a choroidal neovascular membrane at the macular region. Mean and standard deviations of the pupil size, minimum/initial radius (%), final/initial radius (%) and maximum acceleration were calculated using the student's T-test for both control subjects and patients.

### **Results**

The maximum acceleration mean value in normal control subjects was  $-20.254$  (SD 1.134), whereas in AMD patients mean maximum acceleration was significantly ( $p < 0.05$ ) reduced to  $-11.607 \pm 5.318$ .

In addition, the ratio of minimal to initial radius (%) showed mean values of  $72.43 \pm 4.117$  and  $83.892 \pm 9.598$  in the control subjects and AMD patients respectively.

Finally, the ratio of final to initial radius (%) mean values showed significant ( $p < 0.05$ ) elevation in the AMD group. Mean values were  $93.491$  (%)  $\pm 1.004$  and  $98.687$

$\pm 1.553$  in the control subjects and AMS patients respectively.

### **Discussion**

The presence of the macular degeneration in AMD patients affects the pupil response to light stimulus. All the parameters measured showed a statistically significant difference in AMD patients when compared to normal subjects. Pupillometry can safely be considered as a fast, objective and efficient method of great diagnostic and scientific interest.