

Category : **Brain: cerebro-vascular accidents**

**A280 - Assessing outcome in ischemic stroke patients with automated pupillometry**

**E Marinangeli ; A Marudi ; G Bettelli ; G Melegari ; C Dallai ; S Rinaldi ; L Pietropaoli ; G Branchetti ; E Bertellini**

*Azienda Ospedaliero Universitaria Policlinico di Modena, Anestesia e Rianimazione, Modena, Italy*

### **Introduction:**

The assessment of pupillary light reflex (PLR) is essential in critical care. Automated pupillary is now available and provides a precise measure of the Constriction Velocity (CV), latency, dilation velocity, size, percent change, and Neurological Pupil index (NPi) [1] [2]. The purpose of this study is to find a correlation between NPi, CV and unfavorable outcome in patients with ischemic stroke.

### **Methods:**

We included patients with ischemic stroke admitted to NeuroIntensive Care Unit in Modena Hospital from August 2019 to August 2020. We collected NPi and CV in the first 72 h of hospitalization, selecting the worst measurement as significant. We used the Neuroptics NPi-200 pupillometer: NPi values  $< 3$  and CV  $< 0,8$  mm/sec were considered abnormal. Finally we collected the GCS at the discharge of our patients, evaluating as  $GCS \leq 8$  as an unfavorable outcome. A Fisher's exact test was added to the analysis to lend reliability to the significance of the stratified binary variables. We performed the statistical analysis with SPSS statistic version 25.

### **Results:**

We included 18 patients, 12 male, the median of age is 71,5; in the first 72 h of admission 2 patients had left NPi  $< 3$  and 9 patients left CV  $< 0,8$  mm/sec, 3 patients right NPi  $< 3$  and 6 patients right CV  $< 0,8$  mm/sec. At the discharge from ICU 7 patients had  $GCS \leq 8$ . 2 patients had left NPi  $< 3$  and  $GCS$  at the discharge  $\leq 8$ ; 2 patients had right NPi  $< 3$  and  $GCS$  at the discharge  $\leq 8$ ; 5 patients had left CV  $< 0.8$  mm/sec and  $GCS$  at the discharge  $\leq 8$ ; 3 patients had right CV  $< 0,8$  mm/sec and  $GCS$  at the discharge  $\leq 8$ . There was no statistically difference between each group.

### **Conclusion:**

CV and NPi evaluate two different aspects of the PLR; NPi and CV are both unlinked to ischemic stroke outcome at discharge, maybe due to the sample size. Further studies are required to determine the utility of CV and NPi in the prognostication of ischemic stroke outcome.

### **References:**

[1] Shoyombo et al. Scientific Reports 8:6992, 2018

[2] Jahns et al. Critical Care 23:155, 2019