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

**A234 -** ***Automated quantitative pupillometry to predict neurologic outcome in sah patients: a pilot study.***

**A Blandino Ortiz [1] ; J Higuera Lucas [1] ; G Alonso Salinas [2] ; C Soriano [1] ; S Saez [1] ; R De Pablo [1]**

*[1]Ramón y Cajal University Hospital, Department of Intensive Care , Madrid, Spain, [2]Complejo Hospitalario de Navarra, Department of Cardiology, Pamplona, Spain*

## Introduction:

Introduction: The pupillary examination is a fundamental part of the neurological assessmentin neurocritical patients, in whom pupillary abnormalities are associated with poor outcome.Traditionally pupillary examination is based on subjective, and inaccurate estimation, nevertheless, in the past years, the use of automated quantitative pupillometry (AQP) has change our way to assess the pupillary function as it allows us to detect subtle changes.

## Methods:

Methods: We included all consecutive patients with aneurysmatic subarachnoid hemorrhage (a-SAH) admitted in our ICU from September 2019-March 2020 (n=21) We recorded demographics data, clinical characteristics, pupillometry measurements during ICU stay, therapies, complications, neurological outcomes at ICU discharge and 3 months.

## Results:

Results: Of 21 patients (age 60 [31-82] years), 16 were aneurysm of anterior circulation (Figure-1.), 9 (42.8%) developed intracerebral hematoma. 81% had endovascular therapy, among these, 28% intra-arterial vasodilators, and 14.2% angioplasty. 57% needed external ventricular drainage, 33% and 28% require osmotic agents and barbiturates respectively. The ICU mortality was 24% (n=5), the mean GOS at ICU discharge was 3, 62% had unfavorable neurological outcome (UO) at ICU discharge, favorable neurological outcome (FO) improved in 52.3% (n=11) at 3 months. Regarding AQP, abnormal NPi values was associated with UO at ICU discharge (RR 2.4 [95% IC 3.4 to 1.4], p=0,0001) and at 3 months (RR 2.1 [95% IC 0.9 to 3.2], p=0.001). On the contrary NPi>3 was associated with FO at ICU discharge (mean diff GOS -2.07; [95% IC -1.4 to -2.7], p=0.0001), as well at 3 months (mean diff GOS 2.4; [95% IC -2.2 to -3.7], p=0.001).

## Conclusion:

Conclusions: AQP seems to be a useful tool to predict neurological outcome (GOS) at ICU discharge and at 3 months in a-SAH patients. We haven't found a significant association with abnormal pupillometry values and ICU mortality; however, this could be explained for the small sample of patients.

## Image :

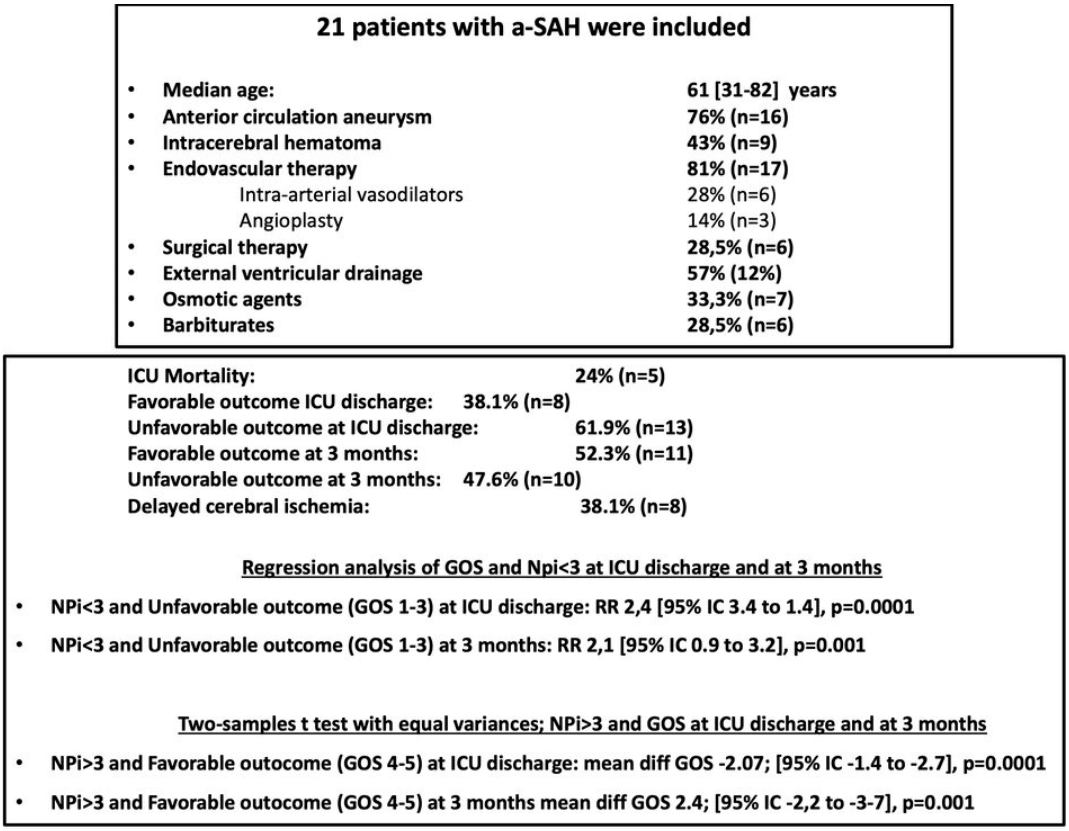


*Figure-1. Results.*