

Poster P192

Diagnostic Value of Pupillometry in the Setting of Pentobarbital-Induced Burst-Suppression Coma

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Introduction

The neurological exam is crucial in ICU patients who have sustained neurological injury. Early signs of neurological deterioration can be masked by pentobarbital. Automated pupillometry and use of the Neurological Pupil Index (NPI) is shown to increase sensitivity and consistency when compared to neurological examination alone.

Hypothesis

The Neurological Pupil Index (NPI) is a good indicator of cerebral function even when EEG was suppressed from a pharmacologically induced, specifically pentobarbital, coma.

Methods

Collected hourly Pupillometry and EEG data on 3 consecutive patients in pentobarbital coma admitted to a NeuroICU. Pupil size, reactivity, and neurological pupil index (NPI) were measured and recorded using the NPi-200 Pupillometer system developed by NeuroOptics.

Results

In all 3 patients, the pupillary reactivity, as assessed by NPI was 1) Preserved, though diminished, at different pentobarbital doses 2) Persists even in the presence of near isoelectric EEG patterns.

Conclusion

Pupillary reactivity is independent of pharmacological influences as demonstrated by automated pupillometry.