

QUANTITATIVE EEG IN NICU. AN EASILY INTERPRETABLE TOOL FOR THE INTENSIVIST?

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Introduction

Difficulties in interpreting continuous EEG (cEEG) make impracticable its use in neurointensive care unit (NICU). Quantitative EEG (qEEG), visually presented as density spectral array (DSA) and cerebral function monitoring (CFM), could support the intensivist in interpreting cEEG. Nevertheless the ability of the NICU personnel, without educational intervention, in interpreting this new monitoring modality has not been evaluated.

Objective

In the early phase of a multistage implementation program, NICU personnel have been assessed in reviewing qEEG panels and in identifying EEG patterns such as seizures, artifacts, level of sedation and asymmetry.

Materials and Methods

We report the result of an initial implementation of qEEG. 10 qEEG panels were selected from NICU patients. NICU personnel, using a web-based tool, evaluated the panels for hemispheric asymmetry, level of sedation, artifacts and seizures. The answers were registered blindly and compared with those of 2 expert neurophysiologists, defined as “gold standard”.

Results

Data were collected in autumn 2015 in two hospitals (HS Gerardo and HPG XIII) from 32 NICU physicians, 1 nurse and 7 neurophysiology technologists. Seizures were recognized in 54,7% of the cases. Asymmetries were recognized in 69.8%, artifacts in 41,3 % and deep of sedation was correctly identified in 38,7 % of the panels.

Conclusions

Without a formal training, NICU participants did not achieve acceptable level of accuracy for using qEEG at the bedside. We will test after summer 2016 the improvement of the interpretation after an educational intervention.