Quantitative EEG features selection in the classification of attention and response control in the children and adolescents with attention deficit hyperactivity disorder

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Abstract

AIM:
Quantitative EEG gives valuable information in the clinical evaluation of psychological disorders. The purpose of the present study is to identify the most prominent features of quantitative electroencephalography (QEEG) that affect attention and response control parameters in children with attention deficit hyperactivity disorder.

METHODS:
The QEEG features and the Integrated Visual and Auditory-Continuous Performance Test (IVA-CPT) of 95 attention deficit hyperactivity disorder subjects were preprocessed by Independent Evaluation Criterion for Binary Classification. Then, the importance of selected features in the classification of desired outputs was evaluated using the artificial neural network.

RESULTS:
Findings uncovered the highest rank of QEEG features in each IVA-CPT parameters related to attention and response control.

CONCLUSION:
Using the designed model could help therapists to determine the existence or absence of defects in attention and response control relying on QEEG.