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Junior Temperament Character Inventory together with quantitative EEG discriminate children with Attention Deficit Hyperactivity Disorder combined subtype from children with Attention Deficit Hyperactivity Disorder combined subtype plus Oppositional Defiant Disorder.

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SUMMARY

Oppositional defiant disorder (ODD) is frequently associated with Attention Deficit Hyperactivity Disorder (ADHD) but no clear neurophysiological evidence exists that distinguishes the two groups. Our aim was to identify biomarkers that distinguish children with Attention Deficit Hyperactivity Disorder combined subtype (ADHD_C) from children with ADHD_C+ODD, by combining the results of quantitative EEG (qEEG) and the Junior Temperament Character Inventory (JTCl).

28 ADHD_C and 22 ADHD_C+ODD children who met the DSMV criteria participated in the study. JTCl and EEG were analyzed. Stability based Biomarkers identification methodology was applied to the JTCl and the qEEG separately and combined. The qEEG was tested at the scalp and the sources levels. The classification power of the selected biomarkers was tested with a robust ROC technique. The best discriminant power was obtained when TCl and qEEG were analyzed together. Novelty seeking, self-directedness and cooperativeness were selected as biomarkers together with F4 and Cz in Delta; Fz and F4 in Theta and F7 and F8 in Beta, with a robust AUC of 0.95

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