Thyroid and Cortisol hormones in Attention Deficit Hyperactivity Disorder: A case-control study.

Kuppili PP, Pattanayak RD, Sagar R, Mehta M, Vivekanandhan S.

doi: 10.1016/j.ajp.2017.03.005.

Abstract

AIM:
There is paucity of research in the putative role of hormonal biomarkers in Attention Deficit Hyperactivity Disorder (ADHD). The current study aimed to analyze the clinical profile, socio-demographic status, co-morbidity, hormonal biomarkers namely Thyroid hormones and Cortisol in children with ADHD and compare them with healthy controls and to explore the association of the hormonal biomarkers with severity of ADHD.

METHODS:
Thirty children with DSM-IV TR diagnosis of ADHD were assessed using semi structured proforma, Conners' Parent Rating Scale revised short (CPRS - R: S) , Mini international neuropsychiatric interview for children and adolescents and Childrens' Global Assessment Scale as well as serum levels of total Triiodothyronine (T3) ,total Thyroxine (T4) , Thyroid Stimulating Hormone (TSH) and Cortisol using chemiluminescent immunometric assay and compared with 30 age- and gender -matched controls.

RESULTS:
The typical profile of cases of ADHD was of a male with mean age of 9.47 years (S.D=2.43) belonging to Hyperactive subtype of ADHD. Serum T4 was significantly lower in cases compared to controls. No significant difference was found in serum T3, TSH and Cortisol levels. No significant correlation between the CPRS : R-S scores and the hormonal biomarkers.

CONCLUSIONS:
There is need for exploration of Serum T4 as putative biomarker for ADHD with replication in future studies. It may also be important to report the negative finding of Cortisol as a biomarker of ADHD in the context of effective utilization of resources for research with special relevance to resource deficit developing countries.