Introduction

A large amount of evidence supports the involvement of the hypothalamic-pituitary-adrenal axis (HPA) in the pathophysiology of mood disorders.¹

Findings include higher serum and salivary cortisol levels among patients with major depressive disorder (MDD) than among controls, as well as a higher rate of negative dexamethasone suppression test. These results suggest HPA hyperactivity is present in patients with MDD.²

Nevertheless, possible gender differences regarding this involvement have not yet been properly addressed.

We carried out a cross-sectional study focusing on serum cortisol levels among patients with unipolar depression, with special attention to putative gender-related differences on those levels.

Materials and Methods

Setting: the study was conducted at the Division of Mood and Anxiety Disorders of the Department of Psychiatry of the University of Texas Health Science Center at San Antonio.

Participants: the sample consisted of 71 unmedicated patients with unipolar depression (21 males, 50 females; age = 38.65 ± 13.66) and 60 healthy controls (19 males, 41 females; age = 33.25 ± 11.79). All patients met the DSM-IV-R criteria for Major Depressive Disorder, confirmed through the Structured Clinical Interview for DSM Disorders (SCID). Thirty-seven patients were depressed at the time of study participation, and 34 were euthymic.

Procedures: we obtained serum cortisol samples of all participants. Comparisons on the mean cortisol levels between groups were carried out using factorial analysis of covariance, with age and body weight as covariates. This study was approved by the respective Institutional Review Board, and informed consent was obtained from all subjects and their parents or legal representatives.

Results

No significant differences were found between patients and controls in regard to serum cortisol levels (Graphic 1).

However, there was a statistically significant interaction between diagnosis and gender (F=6.72, d.f.=1/120, p=0.01).

Male patients had significantly higher cortisol levels compared to male controls (patients =12.33 ± 3.63 mcg/dl, controls=10.16 ± 3.44 mcg/dl; F=6.25, d.f.= 1/35, p=0.01) whereas female patients had nonsignificantly lower cortisol levels compared to female controls (patients=9.88 ± 3.03 mcg/dl, controls=11.79 ± 5.70 mcg/dl; F=2.68, d.f.= 1/83, p=0.10). These results are summarized in Graphic 2.

Conclusions

Although preliminary, our findings suggest that gender may in part moderate HPA dysfunction in unipolar depression.

References


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