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LETTERS TO THE EDITORS

Hippocampus size does not correlate with body mass index in bipolar disorder

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The hippocampus has been a focus of attention in neuroimaging studies of bipolar disorder (BD). This structure has been recognized as particularly vulnerable to the neurotoxic effects of obesity, and it is apparently subject to synergistic, deleterious action from obesity and mood disorders.[1] Comorbid obesity is highly prevalent in people with BD.[2,3] In addition, there is a robust body of evidence showing that obese individuals with BD have poor cognitive performance and increased levels of inflammatory mediators as compared to those with normal weight.[4] Thus, the objective of this study was to ascertain whether an association exists between body mass index (BMI) and hippocampal volume in individuals with BD and to compare hippocampal volumes between patients and healthy controls.

Sixty-five subjects were enrolled: 26 patients with BD in euthymia and 39 controls. Inclusion criteria for patients were: a) age $>$ 18 years; b) DSM-IV criteria for bipolar I; and c) criteria for remission, defined as scores $<$ 7 on the 17-item Hamilton Depression Scale (HAM-D) and on the Young Mania Rating Scale (YMRS) for at least 1 month prior to assessment. Patients with severe clinical illnesses were excluded. The control group consisted of healthy volunteers who had no current or previous history and no first-degree family history of a major psychiatric disorder, including dementia, as assessed by the non-patient version of the Structured Clinical Interview for DSM-IV. Written informed consent was obtained from all subjects in accordance with the Declaration of Helsinki, and the study protocol was approved by the local ethics committee.

Magnetic resonance imaging data were obtained in a Philips Achieva 1.5-tesla scanner (Amsterdam, the Netherlands). T1 high-resolution sagittal 3D magnetization-prepared rapid acquisition gradient-echo (MPRAGE) sequences were acquired with NEX = 1, image matrix = 256 x 232, flip angle = 8 degrees, echo time = 4 ms, repetition time = 8.63 ms, and voxel size 1 x 1 x 1 mm^3, yielding 160 slices. Subcortical volumetric segmentations were performed with the Freesurfer image analysis suite, version 5.1.0 (http://surfer.nmr.mgh.harvard.edu/). Intracranial volume was regressed out from hippocampal volume. Descriptive analyses are presented as mean (standard deviation) or median (interquartile range). Appropriate tests for parametric or nonparametric distribution are indicated in Table 1. Correlations were obtained by Spearman rank correlation coefficients.

Clinical and demographic characteristics of the sample are summarized in Table 1. There was no significant difference in total hippocampus size between patients and controls (p = 0.123). There was no correlation between total hippocampus size and BMI in the overall sample (p = 0.153, rho = -0.194), nor separately in the BD (p = 0.084, rho = -0.345) and control (p = 0.823, rho = -0.043) groups. Significant BMI and BD diagnosis interactions for white and gray matter reductions have been described[3,5]; furthermore, obesity in BD has been associated with worse disease progression, suggesting that nutritional interventions are highly desirable for better outcomes. Although obesity is a potentially modifiable condition that is highly prevalent in individuals with BD and the hippocampus is very susceptible to the neurotoxic effects of obesity, this study did not find an association between hippocampus size and BMI.

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Disclosure

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Table 1 Characteristics of healthy controls and patients with BD

	BD (n=26)	Controls (n=30)	p-value
Age (years)	45.77±14.14	44.00±11.07	0.602*
Gender (male/female)	8/18	15/15	0.145†
Illness duration (years)	11 (17.75)	-	-
Number of mood episodes	8 (12)	-	-
Suicide attempts	2 (1)	-	-
YMRS	0 (3)	-	-
HAM-D	2 (5)	-	-
Total hippocampus size	21.36 (928.92)	372.18 (870.80)	0.123‡
BMI	28.92±6.28	27.63±4.62	0.382*

Data presented as mean ± standard deviation or median (interquartile range), unless otherwise specified.
BD = bipolar disorder; BMI = body mass index; HAM-D = Hamilton Depression Scale; YMRS = Young Mania Rating Scale.
* *t* test, † chi-square test, ‡ Mann-Whitney *U* test.

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Intimate partner violence during pregnancy: case report of a forensic psychiatric evaluation

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Intimate partner violence (IPV), also known as domestic violence, is defined by the World Health Organization[1] as "any behavior within an intimate relationship that causes physical, psychological, or sexual harm to those in the relationship." While IPV may be perpetrated by women against men or in homosexual relations of both sexes, most cases (85%) consist of men victimizing women. This produces a worldwide problem with serious implications for women's health and well-being.[2,3]

Special populations of women are at increased risk of IPV, including pregnant women (especially in unplanned pregnancies), those living in low-income settings, rural women, and older, indigenous, military, and immigrant women. Within this context, a study on the prevalence of IPV among Japanese women noted that all those victimized before pregnancy continued to suffer violence during pregnancy.[4] A prospective cohort study conducted by Silva et al. in Recife, state of Pernambuco, Brazil, found a high incidence of IPV in the postpartum period (9.3%), with predominance of psychological violence.[5]

Lévesque & Chamberland investigated IPV in the perinatal period in young women and warned about the difficulty these women experience in identifying themselves as victims and categorizing the acts of their partners as domestic violence. The fear of family separation and the victims' desire to protect their children contribute to the complexity of violence experienced during maternity.[6]

In addition to the sequelae experienced by non-pregnant women victimized by conjugal violence, IPV can have additional negative effects when perpetrated against pregnant women, increasing the risk of inappropriate antenatal care, poor weight gain, anemia, infections, bleeding, maternal depression, and suicidal ideation and suicide attempts.

We illustrate the aspects listed above with the case of a young couple from the Southern region of Brazil. The husband was an unemployed man with a criminal record who kept his wife (5 months along a planned pregnancy) under false imprisonment while causing her grievous bodily harm. A complaint to police was made by neighbors who noticed the false imprisonment. Although there was a previous history of domestic violence, the victim and the perpetrator minimized the aggressive acts to the police, judge, and forensic psychiatrists who evaluated the case. The victim did not report any concerns about the baby's health or physical integrity during any of the psychiatric interviews. Surprisingly, both the wife and the husband attributed the responsibility of the facts to the victim, including in a handwritten letter by the wife, directed to the judge in the case, blaming herself for having received such treatment from her husband. Forensic psychiatric evaluation of the offender identified controlling behavior and narcissistic personality traits. He was considered fully capable of understanding the nature of his offense and of controlling his actions voluntarily.

This report demonstrates the pathological family dynamics common in such cases. Future research should focus on the motivational and psychopathological characteristics of perpetrators and victims alike, aiming at a more comprehensive knowledge of this type of criminal behavior, as well as preventive assistance through monitoring of high-risk groups. Professionals involved in antenatal and psychiatric care must remain vigilant of the possibility of IPV during pregnancy.

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