Annals of General Psychiatry

BioMed Central

Oral presentation

Open Access

Schizophrenia and Bipolar illness: can imaging answer the dichotomy or spectrum question?

Monte S Buchsbaum*, M Mehmet Haznedar and Erin Hazlett

Address: Department of Psychiatry and Neuroscience PET Laboratory, Mount Sinai School of Medicine, New York, USA
* Corresponding author

from International Society on Brain and Behaviour: 3rd International Congress on Brain and Behaviour
Thessaloniki, Greece. 28 November – 2 December 2007

Published: 17 April 2008

Annals of General Psychiatry 2008, **7**(Suppl 1):S67 doi:10.1186/1744-859X-7-S1-S67

This abstract is available from: http://www.annals-general-psychiatry.com/content/7/S1/S67

© 2008 Buchsbaum et al.; licensee BioMed Central Ltd.

Background

Both schizophrenia and bipolar illness are associated with a continuous spectrum of illness. In schizophrenia patients range from the chronically hospitalized to the employed and independent. Genetic studies of adopted twins and families have supported the concept of a range of severity appearing in the relatives of the severely ill. Similarly in the bipolar spectrum, individuals range from the severely agitated to the mildly activated. Mood variation and disordered thought may appear in both groups. Factor-analytic approaches applied to symptoms have not clearly supported a two-group dichotomy.

Material and methods

We examined cortical gray and white matter volumes in a large sample including unmedicated schizophrenia-spectrum patients (n=79 SPD, n=57 schizophrenia) and healthy controls (n=148). For the bipolar spectrum we had 40 patients with bipolar spectrum (BPS) illnesses (bipolar type I = 17, bipolar type II = 7, cyclothymia = 16) and 36 sex- and age-matched control subjects.

Results

Within the schizophrenia spectrum, schizophrenia patients had reduced gray matter volume widely across the cortex but more marked in frontal and temporal lobes. The SPD patients had reductions in the same regions but only about half that observed in schizophrenia and sparing was in key regions including BA10, superior and middle temporal gyrus. The BPS patients had significantly reduced volume of the white and the gray matter of the frontal cortex, findings also appearing in the schizophrenia spectrum.

Discussion

Taken together, the anatomical imaging findings are indicative of significant brain size differences with psychosis but do not strongly support the distinctiveness of either illness from their respective spectra or from each other. This may reflect imperfections in symptom-based diagnosis, multidimensional illnesses, or the non-specificity of brain volume decreases in psychiatric illness. Variation in the loss of Brodmann area 10 or lack of change in Brodmann area 22 may provide clues to dimensions related to severity of spectrum expression. Diffusion tensor imaging may provide additional dimensional answers to this diagnostic conundrum.