

Neuroanatomic characterization of schizoaffective disorder using MRI: a pilot study

Glen E. Getz*, Melissa P. DelBello, David E. Fleck, Molly E. Zimmerman,
Michael L. Schwiers, Stephen M. Strakowski

*Bipolar and Psychotic Disorders Research Program, Department of Psychiatry,
University of Cincinnati College of Medicine, Cincinnati, OH 45267-0559, USA*

Received 29 December 2000; revised 1 March 2001; accepted 5 March 2001

Abstract

For over 50 years, there has been uncertainty in the conceptual understanding and neuropathogenesis of the diagnosis of schizoaffective disorder (SCA). In order to better characterize SCA, we performed a quantitative assessment of MRI neuroanatomical structures in patients with SCA ($n = 12$), compared to patients with bipolar disorder (BPD) ($n = 12$) and healthy volunteers (HV) ($n = 12$). Patients diagnosed with SCA exhibited regional abnormalities on the striatum that resemble those seen in BPD. This study suggests that SCA has some neuroanatomical characteristics similar to BPD. © 2002 Elsevier Science B.V. All rights reserved.

Keywords: Schizoaffective disorder; MRI; Striatum; Morphometry; Psychosis

1. Introduction

The relationship of schizoaffective disorder (SCA) to other psychiatric diagnoses is uncertain. It has been hypothesized to be a variant of schizophrenia (SCZ) or bipolar disorder (BPD), a heterogeneous combination of both of these, or the center of a continuum with affective illness and SCZ at the two poles (Pope et al., 1980; Abrams, 1984; Crow, 1986; Crow, 1990; Shenton et al., 1987; Lapensee, 1992; Taylor, 1994). Attempts to clarify these relationships using phenomenology, outcome and family studies have remained incomplete (Strakowski et al., 1999a).

One approach toward clarifying this uncertainty is

to examine the neuroanatomy of patients with SCA to examine if regional brain abnormalities are similar to, or different from, these other diagnoses. To our knowledge, only two studies have specifically compared the neuroanatomy of patients with SCA to other groups. Reider et al. (1983) using computed tomographic scans, found no differences among patients with SCA, SCZ and BPD in ventricular size, sulcal prominence, and rates of cerebellar atrophy. Lewine et al. (1995) using magnetic resonance imaging (MRI), found that similar to males diagnosed with SCZ, those diagnosed with SCA were more likely to have volume loss or ventricular anomalies than they were to have deep white matter lesions.

With these considerations in mind, and to continue our ongoing work comparing SCA and BPD (Strakowski et al., 1999a), we examined the MRI regional neuroanatomy in patients with SCA and

* Corresponding author. Tel.: +1-513-558-1103; fax: +1-513-558-3399.

E-mail address: getzg@email.uc.edu (G.E. Getz).

BPD and in healthy volunteers (HV). Specifically, we hoped to determine whether patients with SCA exhibited neuroanatomic abnormalities in brain regions thought to modulate human emotion similar to those previously observed in BPD (Strakowski et al., 1999b).

2. Methods

Patients diagnosed with SCA who were hospitalized for an acute psychotic episode, ($N = 12$; bipolar type = 9, depressed type = 3) and BPD, with psychosis, hospitalized for an acute manic or mixed episode ($N = 12$), between the ages of 18 and 45 years, were recruited from consecutive admissions to the inpatient units at the University Hospital. Patients were excluded if their hospitalization was secondary to substance intoxication or withdrawal.

Each diagnosis was made by two independent raters (DEF, MPD) based on stringent criteria. One trained rater used the Structured Clinical Interview for DSM-IV patient edition (SCID-I/P; First et al., 1995) with established inter-rater diagnostic reliability ($\kappa > 0.90$; Strakowski et al., 1999b). The other rater used the longitudinal interval follow-up evaluation (LIFE; Keller et al., 1987) to examine psychotic and affective symptoms during the six months prior to admission. If affective symptoms occurred more than 75% of the time in the presence of psychotic symptoms and psychosis did not persist for more than two weeks in the absence of mood symptoms, the diagnosis of BPD with psychosis was established. If psychosis occurred for greater than two weeks in the absence of significant affective symptoms and affective symptoms persisted 25–75% of time during the course of psychotic symptoms, the diagnosis of SCA was made. If affective symptoms occurred less than 25% of time in the presence of psychotic symptoms, the patients were considered to have SCZ. All data were reviewed and a consensus diagnosis was made. Those patients whose diagnosis was not agreed upon among the raters were not included in the study ($n = 2$).

The HV group ($n = 12$) were matched for age, race and sex, and recruited from the community by newspaper advertisements and flyers posted throughout the community. They were screened for psychopathology

using the SCID-I/P and excluded for a history of any DSM IV Axis I diagnosis or any first-degree relative with an affective or psychotic disorder. Additional exclusion criteria for all participants were the presence of any major neurological or medical illness, a diagnosis of mental retardation, any contraindication to receiving an MRI scan, a history of head trauma with a loss of consciousness greater than 5 min, any lifetime substance dependence, and a lifetime substance abuse history of greater than 10 years duration or within the previous three months. Written informed consent was obtained for all subjects following an explanation of study procedures.

3. Image acquisition and analysis

All subjects were scanned on the same Picker 1.5 Tesla scanner (Picker International, Cleveland, Ohio) using a RF-spoiled FAST 3-D acquisition technique (TR = 22 ms; TE = 7 ms; flip angle = 25°; field of view = 24 cm; and matrix = 256 × 256 pixels). The 3-D images were obtained as 1-mm thick coronal slices. Images were digitally transferred to a Macintosh workstation, where morphometric analysis was performed using commercial software (BRAIN IMAGE version 3.11.4; Reiss et al., 1995) that has the capacity to display images simultaneously in three planes (coronal, sagittal, and axial) and provide interactive semiautomatic region of interest (ROI) measurements (Strakowski et al., 1999b). Measurements were performed by trained raters (MEZ, MPD, GEG) with high interrater and intrarater reliabilities (intra-class correlation coefficient > 0.90) who were blind to subject identity and group. The ROIs [the cerebrum, prefrontal cortex, thalamus, striatum (the sum of the caudate and putamen), globus pallidus, amygdala, hippocampus and lateral ventricles] were then measured as described in detail elsewhere (Strakowski et al., 1999b). Intracranial volume was estimated by manually measuring every 10th slice in the axial plane beginning in the slice which the cerebellum was first visualized and ending at the top of the cranium.

4. Statistical analysis

All statistical analyses were performed using the

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات