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Research report

Diagnosis and classification of pediatric bipolar disorder

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Abstract

Background: Many children and adolescents with apparent bipolar disorder cannot be meaningfully diagnosed using the DSM-IV. The variety of pediatric bipolar phenotypes observed in clinical practice remains unclarified.
Method: 130 consecutively evaluated bipolar children and adolescents were assessed using semistructured clinical interviews and operational criteria that abandoned adherence to the DSM-IV cardinal symptom, duration of symptom persistence, and episodicity requirements.
Results: 97.6% of the total sample manifested either all three, or two of the three symptoms elation, grandiosity, and racing thoughts, when manic. 96.9% of the total sample exhibited five or more of the eight DSM-IV criterion symptoms when manic. 52.3% of the subjects manifested ultradian cycling; 22.3% manifested chronic mania or chronic simultaneous manic mixed conditions. Only 21.5% could be classified within the Leibenluft et al. [Leibenluft, E., Charney, D.S., Towbin, K.E., Bhangoo, R.K., Pine, D.S., 2003. Defining clinical phenotypes of juvenile mania. Am. J. Psychiatry 160, 430–437.] system. Problematic distractibility–inattention was present in 89.9% and recurrent rage attacks in 48.5% of the total sample. Older subjects exhibited significantly more depressive symptoms, and nonsignificantly greater prevalences of major depression, severe depression, and ultradian cycling than did younger subjects. The number of depressive symptoms was significantly correlated with ultradian cycling.
Limitations: This study relied upon retrospective as well as current reports of symptoms. The study results cannot be generalized to community samples.
Conclusions: We propose two testable hypotheses: (1) that the recurrent, or chronic, simultaneous presence of any two of the symptoms elation, grandiosity, and racing thoughts and a total of five DSM-IV manic symptoms (without specific cardinal symptom, duration, or episodicity requirements) will identify nearly all clinic-referred bipolar children and adolescents; and (2) that a comprehensive classification of pediatric bipolar phenotypes based upon pattern of manic symptom episodicity or chronicity and degree of depression will identify subtypes of pediatric bipolar disorder that have greater correspondence with treatment response than do those of the DSM-IV classification. Problematic distractibility–inattention and explosive irritability–rage are highly prevalent; their presences should be specified when indicated.

Keywords: Bipolar disorder; Children; Diagnosis; Phenotypes; Classification

1. Introduction

Barbara Geller and her Washington University group have conducted numerous validation studies of the pediatric bipolar I disorder phenotype (Geller et al., 2004, and

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included references). The pathology manifested by many, if not most, pediatric bipolar patients, however, conforms poorly to the DSM-IV (American Psychiatric Association, 1994) classification of bipolar disorder phenotypes (Birmaher et al., 2006; Leibenluft et al., 2003; Masi et al., 2006), primarily because of the stringent DSM-IV duration requirements. The Leibenluft et al. (2003) classification accommodates one-to-three day manic episodicity, but fails to recognize conditions characterized by polarity switching *within one day* (defined as "ultradian" cycling by Kramlinger and Post, 1996) and also fails to recognize chronic non-mixed manic conditions and most chronic mixed conditions. The DSM-IV cardinal symptom requirement for elation (or irritability) is also problematic. Geller (referenced in Geller et al., 2004) and Leibenluft et al. (2003) permit substitution of grandiosity for elation, although there is no substantial evidence that either of these two hedonic-factor symptoms is more central to the core pathophysiology of manic states than are the symptoms of psychomotor acceleration (*e.g.*, racing thoughts) (Akiskal et al., 2003; Angst et al., 2003; Bauer et al., 1991; Benazzi, 2004; Benazzi and Akiskal, 2003; Cassidy et al., 1998b; Swann et al., 2001).

No empirical description of the variety of pediatric bipolar phenotypes observed in clinical practice, unbiased by the DSM-IV diagnostic restrictions, has been reported. This study, based upon observations made during clinical assessments of a large sample of children and adolescents who appeared to have bipolar spectrum illnesses: (1) generates a testable hypothesis regarding diagnostic criteria that may identify all, or nearly all, clinic-referred bipolar children and adolescents; (2) generates the testable hypothesis that a comprehensive classification of pediatric bipolar phenotypes based upon pattern of manic symptom episodicity or chronicity and degree of depression will identify subtypes of pediatric bipolar disorder that have greater correspondence with treatment response than do those of the DSM-IV classification; and (3) provides information regarding the prevalences of depression, problematic distractibility–inattention, and rage among clinic-referred pediatric bipolar patients (Staton et al., 2004a). Bipolar status was determined by the recurrent or chronic, simultaneous presence of four or more of the eight DSM-IV criterion symptoms for mania, including either elation, or grandiosity, or racing thoughts (as operationally defined in the Methods), and excluding irritability. The DSM-IV duration and cardinal symptom requirements and classification system were not utilized, since strict adherence to these criteria, in our judgment, precludes recognition of the variety of pediatric bipolar phenotypes that are reasonably considered to be manic states in the course of clinical practice.

2. Methods

The data described in this study were derived from the intake psychiatric diagnostic assessments of 130 consecutively evaluated bipolar children and adolescents, ages 3–17, mean age 11.6 years, who were referred to five treatment facilities in Minnesota and North Dakota, between June 2004 and November 2005. The assessments were conducted by the first two authors, utilizing semi-structured clinical interviews and operational criteria. No exclusion criteria were applied. Each data set included all of the symptoms and operational criteria described below: the eight DSM-IV criteria for mania, excluding irritability; three severity forms of depression; the presence or absence of rage and severe distractibility–inattention; *typical* pattern of manic symptom episodicity or chronicity, when discernible (typical duration and frequency of manic episodes, diurnality, or chronic manic or simultaneous manic mixed conditions); and diagnostic classification. No screening or standardized rating instrument was utilized. Each data set was reviewed by both interviewers to produce agreement for each diagnostic assignment.

Parents, guardians, or older adolescents gave written consent for these evaluations. Strict confidentiality and anonymity was insured by utilizing numerical identification of all data sets. Only pooled data was analysed and reported. Each case received "treatment as usual"; there was no treatment–response component of this investigation.

2.1. Definitions and operational diagnostic criteria

2.1.1. Mania

Diagnosis required the simultaneous presence, recurrent or chronic, of four or more of the eight DSM-IV criterion symptoms for mania, including either elation, or grandiosity, or racing thoughts, and excluding irritability. No minimum duration of manic episode was required. The symptom elation was distinct from normative extremes of joy and excitement (Luby and Belden, 2006) and was out-of-context. The symptom grandiosity was identified by the presence of extreme, non-normative entitlement or self-confidence (Luby and Belden, 2006). Grandiose ideas were distinct from normal fantasy. The symptom racing thoughts was identified in young children by recurrent periods of speech so rapid that it was difficult to comprehend, or was incomprehensible, or by flight of ideas.

2.1.2. Bipolar disorder

Bipolar disorder was identified by the presence of mania. Episodic course was not required. No particular