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Award Paper

A Clinical Study of Phenomenology and Comorbidity of Paediatric Bipolar Disorder

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Abstract

Background: Considerable controversy exists regarding clinical presentation, diagnosis, and comorbidities especially with Attention Deficit Hyperactivity Disorder (ADHD), in paediatric Bipolar Disorder (BPD).

Aims and objectives: To describe phenomenology and comorbidities of paediatric BPD.

Method: 78 Subjects (6-16 years) attending child and adolescent psychiatry services of C.S.M.M.U. Lucknow, who fulfilled DSM-IV-TR 2000 criteria for BPD were assessed using K-SADS-PL, child mania rating scale (CMRS),child depression rating scale (CDRS), Attention Deficit Hyperactivity Disorder rating scale (ADHD-RS) and Clinical Global Assessment Scale (C-GAS).

Results: All the subjects were diagnosed as BPD-I. There mean chronological age was 13.4±2.1 years. The mean age at onset of BPD was 12.2 ± 2.3 years. The most common symptoms found in manic subjects were increased goal directed activities (100%), distractibility (100%), elation (98.7%), grandiosity (90.5%), physical restlessness (82.4%), poor judgment (82.4%) and decreased need for sleep (81.1%). 19 (24.3%) cases of BPD had other current comorbid disorders. The common comorbidities were Mental Retardation (10.26%), ADHD (10.26%), oppositional defiant disorder (6.41%), and substance abuse (3.85%).

Conclusions: In children and adolescents elation/grandiosity was more common presentation than Irritability. Comorbidities were seen in 24.3% children in paediatric BPD. Differentiation of comorbid disruptive behaviour disorders especially ADHD from BPD is possible with respect to age of onset, quality of the disturbed mood, and the course of each disorder.

Introduction

BPD in children and adolescents (hereafter referred to as children unless specified) is less well studied than BPD in adults and is under diagnosed and misdiagnosed on various counts. The diagnosis of mania among children is made difficult because of the possible developmental modulation of symptom expression (1). Children with BPD present with other psychiatric disorders, particularly attention deficit hyperactivity disorder (ADHD),

oppositional defiant disorder (ODD), conduct disorder (CD), and anxiety disorders. Rates for comorbid disorders with BPD range between 11% -75% for ADHD, 46.4% -75% for ODD, 5.6% -37% for CD, 12.5% -56% for anxiety disorders, and up to 40% for substance abuse disorders (2-7). These comorbidities often result in difficulty in diagnosis. Mania in juveniles has often been misdiagnosed as attention deficit hyperactivity disorder (ADHD); conduct disorder (CD) or schizophrenia (8, 9). This is due to variation in clinical presentation and clinicians being less sensitive in considering a phenomenology of mania especially in children, which can vary from the classic descriptions of BPD in adults (1). Younger children often present with irritability and emotional lability, whereas older children present with euphoria, elation, paranoia and grandiose delusions (10). The findings from other studies (11, 7) also indicate that irritability is the most common mood disturbance followed by elation and expansive mood.

Differentiating between BPD and ADHD presents special diagnostic problems due to a considerable symptom overlap. Symptoms such as inattention, distractibility, impulsivity and increased psychomotor activity may be common in both ADHD and BPD. Differences between these disorders with respect to age of onset, quality of the disturbed mood, and the course of each disorder may be helpful to clarify the diagnosis (1). Grandiosity, elated mood, racing thoughts, hypersexuality, increased sociability and decreased need for sleep are more specific to BPD (12).

Indian literature regarding paediatric BPD is limited. A clinic based study in NIMHANS reported that out of 840 children and adolescents assessed, 21 (2.5%) met DSM-III criteria for mania, and that none of them had comorbid ADHD. Thirteen (61%) of the children with mania had delusions and/or hallucinations. The most frequent symptoms were: pressured speech, irritability, elation, distractibility, grandiosity and expansive mood (11). Rajeev et al found that 36(26%) BPD subjects (aged < 16 years) had a comorbid diagnosis, with 16 (11%) having ADHD, 13 (9%) having ODD and 11 (8%) having CD, on the basis of a retrospective chart review and at the time of review, except in few cases, the bulk of the subjects and their caregivers were not interviewed for this study. It is possible that ADHD was not temporally comorbid with BPD although it was diagnosed earlier and was mentioned as lifetime comorbidity (13). In a subsequent clinic based study, Jaideep et al reported that 14% of juvenile BPD patients had comorbid disorders of ADHD (4%), ODD (11%), and CD (3%) (14). they did not describe phenomenology of these 73 BPD subjects.

BPD in children is commonly misdiagnosed due to overlap of diagnostic criteria with other more commonly diagnosed disorders like ADHD. Systematic study of BPD in children will shed light on clinical manifestations of BPD in our setup and ways of clinically distinguishing it from other comorbidities. This will facilitate accurate diagnosis and appropriate treatment in such patients leading to a better outcome. In view of these considerations, it was proposed to study the phenomenology of paediatric BPD and comorbid disorders specially ADHD.

Method

Subjects were recruited from the child and Adolescent Psychiatry OPD of C.S.M. Medical University, U.P. Lucknow who presented with prominent affective symptoms Suggestive of BPD, with symptoms of ADHD, ODD and symptoms of conduct disorder. The study sample was a purposive sample which consisted of 78 subjects who were included in the study during the period from 1st September 2007 to 31st July 2009. All the subjects were diagnosed as BPD-I. There mean chronological age was 13.4±2.1 years and mean I.Q. was 89.8 ± 15.3. The M: F ratio was 3.6:1 and the mean age at onset of BPD was 12.2 ± 2.3 years. Inclusion criteria were Children and adolescents up to 16 years of age with a DSM-IV-TR 2000 diagnosis of BPD with availability of at least one reliable informant who was either a parent or guardian of the subject, who were willing to give informed consent. Exclusion criteria were severe physical/psychiatric disorder or condition which required priority medical management and mental age<6 years (IQ<35).

Assessment

Information regarding details of identification data, demographic details, chief complaints, history of present illness, history of past illness, family history, personal history and physical examination was obtained on a semi-structured proforma. Appointment was fixed up with the parent/ attendant of the subject included in the study for a detailed assessment of the subject at a mutually agreeable date and time.

The subject and the parent/guardian were interviewed separately on K-SADS-PL (16) for BPD, ADHD and other comorbid disorders. Child Mania Rating Scale (CMRS) or Child Depression Rating Scale (CDRS) was applied in subjects having episodes of mania/hypomania and depression respectively. Diagnosis of disorders not present in K-SAIDS PL e.g., dissociative disorders and somatoform disorders was made on the basis of clinical assessment. A timeline was constructed regarding the onset of BPD, ADHD and comorbid disorders. Diagnosis was made as per DSM-IV-TR 2000 for BPD, and comorbid disorders. I.Q. was derived from percentile scores of intelligence as measured by a clinical psychologist by using Raven's Standard Progressive Matrices (SPM) and Raven's Coloured Progressive Matrices (CPM). The child was assessed for the possibility of ADHD on the basis of history. After the remission of the affective episode, the child was clinically assessed for ADHD on the basis of MSE in ADHD. The severity of the symptoms of ADHD was measured on (ADHD-RS-IV; 17). Children Global assessment Scale (C-GAS; 18) was applied in all subjects to assess impairment of functioning.

Results

All the subjects were diagnosed as BPD-I. Among which 73 cases presented with manic episode, 1 with hypomanic episode and 4 cases with depressive episode. Mean duration of all mood episodes was 7.8±14.6 months. Chronic course was present in only 2 subjects. Family history of mood disorders in their first degree relatives was present in 26.9 % of subjects.

The symptoms found in manic (and hypomanic) subjects on K-SADS-PL were increased goal directed activities (100%), distractibility (100%), elation (98.7%), and grandiosity (90.5%), physical restlessness (82.4%), poor judgment (82.4%), decreased need for sleep (81.1%) pressured speech (60.8%), racing thought (50%) and psychotic symptoms

(14.9%) . Irritability was seen in 58(78.3%) of cases on CMRS but not without elation except one subject. 24.4% cases of BPD had current comorbid disorders. 7.7% cases have more than one comorbid disorders. The comorbidities were Mental retardation (MR) (10.26%) and ADHD (10.26%), Seizure disorders (2.56%), oppositional defiant disorder (ODD) (6.41%), substance abuse (3.85%), Anxiety Disorders (2.56 %), conduct disorder (CD) (1.28) and Enuresis (1.28%).

Discussion

In the present study, clinical picture of mania in children and adolescents is found to be similar to the symptomatology of mania in adults (APA 2000; 19). Although minor irritability was reported in all the subjects, it was found to be prominent (often or very often) only in 78.37% of the subjects (based on CMRS). However elation was prominent in 83.78% of the subjects. There was only one subject who had irritability without elation or expansive mood. This observation is in contrast with the available literatures. Among Indian studies on phenomenology on paediatric BPD, [11] reported that irritability was more common affective disturbance than elation or expansive mood. Alexander *et al*. (15) also reported irritability in 3 subjects and euphoria in 2 (n=5). Similarly, the Western studies [20, 21] also reported that irritability, rather than euphoria, tends to be the predominant and most impairing mood state. Apart from the symptom of irritability, rest of the manic symptomatology found in the present study is consistent with the variations of symptoms seen in various studies as described above and also in meta-analysis by Kowatch *et al.* [22].

In the present study, psychotic symptoms were present in 14.9% of manic subjects; delusion being the most common. Wide variability (16%–60%) in rates of psychosis have been reported in various Western studies in youths with BPD [3, 4, 7], with auditory hallucinations being the most common [23].

The present study shows low rates of comorbidity in BPD subjects as compared to that reported in the western studies [22]. In the present study MR (10.26%) and ADHD (10.26%) were the commonest comorbidity found and seizure disorder was reported in two cases. The western studies on phenomenology of paediatric BPD excluded patients with MR (24), I.Q<70 [25] and patients with medical or neurological illnesses. This accounts for absence of MR and seizure disorder in their study.

Three cases (3.85%) of substance use disorder (SUD) were found in current study. There is wide variability in the rates of SUD (5-29%) reported in the western data [22]. Comorbid SUD has also not been reported in Indian studies on Paediatric BPD.

Although 59.7% of the subjects in present study reported one or more symptoms of anxiety during their mood episode, only one subject fulfilled diagnostic criteria for generalised anxiety disorder (GAD) and one subject fulfilled diagnostic criteria for obsessive compulsive disorder (OCD). Study conducted by Jairam *et al.* [26] reported one case of OCD while by Srinath *et al.* [27] no case of anxiety disorder was reported. In Western studies anxiety disorders were reported in a 15% to 43% of cases [22].

Using strict DSM-IV-TR criteria, the diagnosis of ODD/CD cannot be made exclusively in the presence of a mood disorder such as BPD. In the present study, most of the subjects with BPD had features of ODD/CD during their manic episode but only five

subjects of ODD and one subject had of CD had symptoms before the onset of illness. After remission of mood episode only symptoms of ODD/CD have persisted. Biederman *et al.* [28] reported much higher rates of comorbid ODD (up to 100%), CD (up to 71%) and anxiety disorder (up to 64%) in their ADHD+BPD subjects. In another study by Biederman *et al.* [29], 41% of youths of BPD had comorbid CD. These studies did not answer the question as to how ODD/CD or anxiety disorder can be diagnosed in a manic subject especially when they reported that their sample had chronic and continuous mania rather than an acute and episodic course. So, the higher rates in their studies might have been because of different assessment methods.

In the present study, observation of ADHD (10.26 %) in BPD is consistent with the findings of previous studies which found rates of ADHD in BPD from 0–11% [11, 28, 30, and 31]. In the present study, the sample is significantly older than the cohorts of other Western studies [3, 7, 31, 32,]. However, this age difference alone could not account for lower rates of co-morbidity of ADHD in the present study. It is well known that ADHD is a lifetime diagnosis and continues in adolescence or adult life. Considering this fact, if co-morbidity of ADHD is prevalent in the children with BPD, this higher rate should have been reflected in the present study sample. As argued by Jaideep *et al.* [14] that recall bias can be a factor which led to lower rate of co-morbid ADHD in younger population. This argument can be applied to under diagnosis of inattentive type of ADHD but there is less chance to under-diagnose more disruptive types like hyperactive/impulsive type and combined type of ADHD.

The author agrees with the view, as mentioned in NIMHANS studies that ascertainment bias can also be one of the reasons for higher comorbidity reported in the Western studies. Samples in those studies recruited were mostly referred subjects from tertiary centres and special clinics. It is possible that those subjects might be suffering from severe form of illness and other multiple comorbidities, hence resulting in obvious ascertainment bias. In contrast subjects recruited in the present study were largely self-referred, and not recruited from special clinical setting.

Strengths of the study are that all subjects were clinically evaluated by the author and the diagnosis was confirmed by consensus with a senior child psychiatrist on the basis of available information. In the present study, diagnoses of BPD as well as its comorbidities were made on the basis of information elicited both from the subject(s) and parent(s) on semi-structured interviews and mental status examination of the subjects. In addition, most of the subjects (93.5%) could be followed up and clinically assessed for ADHD after remission of their mood episode during the study period. To the author's knowledge, this is the largest Indian study on phenomenology of paediatric BPD. Limitations of the study are that the sample in the present study is purposive. Some study findings are based on retrospective recall of patient(s) or parent(s) like age at onset of illness, history of cycling and mixed episodes etc; so the actual picture may be a different than observed in the study. In conclusion, in India the clinical picture of mania in children and adolescents was found to be similar to the symptomatology of mania in adults and elation/grandiosity was more common presentation than Irritability. Comorbidities were less in paediatric BPD-I as compared to Western data. Differentiation

of comorbid disruptive behaviour disorders especially ADHD from BPD is possible with respect to age of onset, quality of the disturbed mood, and the course of each disorder.
The differences in BPD subjects between Indian and Western literatures as discussed above need to be examined by large, prospective, community-based, and multicentre clinical studies with childhood onset BPD. Cross-cultural replication is also essential to identify role of biological, psychological and sociocultural factors in the causation and variation in clinical picture of BPD in paediatric population.

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