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Clinical Characteristics of Bipolar Disorder in Children and Adolescents in Egypt

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ABSTRACT

Introduction: Clinical features of bipolar disorder (BD) in children and adolescents are usually a matter of controversy.

Aim of the Study: To explore differences in demographics, family history and clinical presentation of children and adolescents with bipolar I, bipolar II and bipolar disorder not otherwise specified.

Subjects and Methods: Children and adolescents were assessed by obtaining historical information and Schedule for Affective Disorders and Schizophrenia for School-Age Children- Present and Lifetime Version (K-SADS-PL), administered individually to the children and adolescents and to their parents. Patients having BD (92 children and 147 adolescents), diagnosed according to DSM-IV criteria were classified into two groups according to age of onset and subtype of BD and compared together regarding their demographic characteristics, family history of psychiatric disorders, psychiatric comorbidity and clinical features.

Results: Children with BD showed less functional impairment and psychotic symptoms than adolescents having BD. Children with BD had more comorbid psychiatric disorders than adolescents. Attention deficit hyperactivity disorder, oppositional disorder and nocturnal enuresis were significantly more prevalent in children than adolescents. Irritable mood and poor judgment were more common in bipolar children while elevated mood, decreased need for sleep, grandiosity, accelerated speech, flight of ideas, distractibility, motor hyperactivity, hypersexuality and psychotic symptoms were more common in adolescents. Functional impairment was significantly more in bipolar adolescents.

Conclusion: Children and adolescents with BD showed developmental differences in their clinical characteristics, type of psychiatric comorbidity and degree of functional status.

Key words: Bipolar disorder, mania, pediatric, children, adolescents.

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INTRODUCTION

Along the past few years, bipolar disorders (BD) in children and adolescents became a subject of increasing interest, controversy and public health significance. This probably arises from lack of precise definition of its early signs and clinical subtypes and controversy about the best methods of management[1].

Mania, though not uncommon in the child and adolescent population, seemed difficult to diagnose and for this reason the study of typical and atypical clinical presentations at these ages was considered to be particularly important. Some authors had already suggested a specific clinical expression in children. The most common mood disturbance in this developmental period is marked irritability, with ''affective storms'' and prolonged bursts of rage[2]. Severe, persistent and often violent irritability led to the incorrect diagnosis of many cases as conduct disorder[3].

The clinical course also seemed to differ from that of adults, tending to be more chronic and continuous than acute and episodic[4,5] and with more frequent rapid cycles and mixed mania[4,6]. These differences in clinical presentation and course between children and adolescents and adults generated considerable controversy among professionals in the field.

Despite interest and controversy, there are relatively few published studies examining the clinical phenomenology of pediatric BP, especially in developing countries.

The objective of this study was to examine demographics of children and adolescents diagnosed with BP, to ascertain their clinical characteristics and to study possible clinical differences between child and adolescent onset groups.

SUBJECTS AND METHODS

Patients were recruited from children referred to outpatient clinic of Neuropsychiatry Department, Tanta University Hospital, for psychiatric evaluation, along the period from June 2006 to December 2009.

A consecutive sample of 239 Children and adolescents aged 7 to 18 years who fulfilled the DSM-IV criteria for bipolar disorder I (BP-I) or bipolar disorder II (BP-II) or bipolar disorder not otherwise specified (BP-NOS) were included in this study[7].

Children who had BP-NOS were one of two; (1) Children with rapid alternation (over days) between manic symptoms and depressive symptoms that meet symptom threshold criteria but not minimal duration criteria for Manic, Hypomanic, or Major Depressive Episodes, or (2) Children with recurrent hypomanic episodes without intercurrent depressive symptoms.

Diagnosis was made at the end of the diagnostic procedure, which included obtaining careful historical information (including previous medical and/or psychiatric and/or school reports) and administration of the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL)[8]. The K-SADS-PL was administered individually to the patients and to their parents during the diagnostic process by the research team.

To improve the diagnosis, after each interview clinical data from each patient-parent pair were reviewed for the purpose of consensus by the researchers. When patient/parent interview endorsed bipolar diagnosis and the other did not or when other questions arose, another consultation with both patient and parent was added for further clarification to obtain a definitive diagnosis. Diagnoses were considered positive only if DSM-IV criteria were unequivocally met.

Patients with current or lifetime DSM-IV diagnosis of schizophrenia, mental retardation, pervasive developmental disorders or mood disorders due to substance abuse or medical condition were excluded from the study.

Patients and parents received detailed information on the details of the study and of the assessment instruments, in age-appropriate language. Patients and parents gave a written informed consent.

Patients were categorized into groups according to age of onset (Childhood-onset BP (children younger than 12 years of age) and adolescent-onset [age range 12–18 years]) and according to DSM-IV subtype of BD.

Functional impairment was assessed during the same visits using the Children's Global Assessment Scale[9] on a scale from 0 (severe impairment) to 100 (superior functioning).

Statistical analysis

SPSS 15 software for Windows was used for data analysis. The statistical significance level was defined as P<.05. Subjects with childhood-onset and adolescent-onset BP were compared using chi-square analysis on categorical variables and an unpaired t-test on continuous variables.

RESULTS

Demographic and diagnostic characteristics

This study included 92 children (group 1) whose age ranged from 7.30-11.8 years (9.83±1.15) years and 147 adolescents (group 2) whose age ranged from 12.7-17.2 (14.88±1). Patients' age who had BP-I ranged from 8.5-17.2 years (14.03±2.02), while patients' age who had BP-II ranged from 7.3-17 (13.15±2.71). In BP-NOS the age of patients ranged from 7.6-16.4 years (11.28±2.62). The age of patients was higher in BP-I than those with BP-II and in both than those with BP-NOS with statistically significant difference (P=0.000) (table 1, 2).

Sixty four children (69.56 %) were males while 89 adolescents (60.54 %) were males. There was no significant gender difference among children and adolescents suffering from BD. No statistical gender difference was found in BP-I and BP-II among children and adolescents (P > 0.05). However male children suffering from BPNOS were significantly more than adolescents suffering from BP-NOS (P=0.002) (table 1, 2).

Table 1: Demographic and clinical features in children and adolescents with BD.

	Children (n= 92)	Adolescents (n= 147)	P
Age, y, mean (SD)	9.83±1.15	14.88±1	
Sex, males, no. (%)	64	89	0.169
CGAS, baseline, mean (SD)	54.54±2.43	51.24±3.24	0.000*
Psychotic symptoms, no. (%)	3 (3.26%)	40 (27.21 %)	0.000*
Family History (FH)	34 (36.95%)	52 (35.37%)	0.89
FH BP	8 (8.69 %)	21 (14.28 %)	0.22
FH MDD	10 (10.86 %)	16 (10.88 %)	1.00
FH Anxiety	14 (15.21 %)	19 (12.92%)	0.70
FH Schizophrenia	3 (3.26 %)	4 (2.72 %)	1.00
FH Addiction	7 (7.60%)	7 (4.76 %)	0.40
FH ADHD	6 (6.52 %)	5 (3.40 %)	0.34
Comorbidity	63 (68.47 %)	67 (45.57 %)	0.001*
Any anxiety disorder	12 (13.04 %)	24 (16.32 %)	0.57
ADHD	37 (40.21 %)	31 (21.08%)	0.002*
Oppositional defiant disorder	26 (28.26 %)	6 (4.08 %)	0.000*
Conduct disorder	2 (2.17 %)	2 (1.36 %)	0.640
Substance use	1 (1.08 %)	13 (8.84 %)	0.013*
Tics	4 (4.34 %)	1 (1.68 %)	0.074
Enuresis	7 (9.60 %)	0	0.001*

Note: BP I = bipolar disorder type I; BP II = bipolar disorder type II; NOS = not otherwise specified. CGAS = Children's Global Assessment Scale; * = Significant difference

Table 2: Comparison of childhood-onset and adolescent-onset manic symptoms.

Symptom	Children (n= 92)	Adolescents (n= 147)	P
Elevated or expansive mood	13 (14.13 %)	50 (34.01 %)	0.001*
Irritable mood	79 (85.86 %)	97 (65.98 %)	0.001*
Decreased need for sleep,	28 (30.43%)	81 (55.10 %)	0.001*
Inflated self-esteem/grandiosity,	10 (10.86 %)	91 (61.90 %)	0.000*
Motor hyperactivity	54 (58.69 %)	108 (73.46 %)	0.02*
Accelerated speech	55 (59.78 %)	118 (80.27 %)	0.001*
Flight of ideas	8 (8.69 %)	30 (20.40 %)	0.018*
Distractibility	53 (57.60 %)	120 (81.63 %)	0.000*
Poor judgment	55 (59.78 %)	53 (36.05%)	0.000*
Hypersexuality	23 (25 %)	89 (60.54 %)	0.000*

* = Significant difference

Family history

Psychiatric disorders reported in families of children and adolescents suffering from BD included BD, major depressive disorder, anxiety disorders, schizophrenia, drug dependence and ADHD. There was no significant difference among children and adolescents suffering from BD or among subtypes of BD regarding family history of psychiatric disorders (P>0.05), (table 1, 3).

Table 3: Demographic and clinical features in children and adolescents with BD.

	BP I (n =93)			BP II (n =75)			BP -NOS (n =71)		
	Children (n = 19)	Adolescents (n = 74)	p	Children (n = 26)	Adolescents (n = 49)	p	Children (n = 47)	Adolescents (n = 24)	P
Sex, males, no. (%)	14 (73.68 %)	53 (71.62 %)	1	14 (53.84 %)	27 (55.10 %)	1	36 (76.59%)	9 (37.5 %)	0.002*
CGAS, baseline, mean (SD)	52.47±2.19	49.5± 3.55	.00*	52.6 ±1.41	52.85± 1.47	0.50	56.44±1.07	53.33±1.55	.000*
Family History	9 (47.36%)	32 (43.24 %)	0.78	11 (42.30 %)	17 (34.69%)	0.62	14 (29.78 %)	3 (12.5 %)	0.15
FH BP	4 (21.05 %)	16 (1.62 %)	1	1 (3.84 %)	4 (8.16 %)	0.65	3 (6.38 %)	1 (4.16 %)	1
FH MDD	0	6 (8.10 %)	0.34	6 (23.07 %)	9 (18.36 %)	0.76	4 (8.51 %)	1 (4.16 %)	0.66
FH anxiety	4 (21.04%)	10 (13.51 %)	0.47	5 (19.23%)	6 (12.24 %)	0.50	5 (10.63 %)	3 (12.5 %)	1
FH schizophrenia	2 (10.52 %)	3 (4.05 %)	0.27	0	1 (2.04 %)	1	1 (2.12 %)	0	1
FH addiction	3 (15.78 %)	5 (6.75 %)	0.35	2 (7.69%)	2 (4.08 %)	0.61	2 (4.25%)	0	.55
FH ADHD	3 (15.78 %)	3 (4.05%)	0.10	3 (11.53 %)	2 (4.08 %)	0.33	0	0	
Lifetime comorbidity, no. (%)	15 (78.99 %)	35 (47.29 %)	0.02*	18 (69.23%)	24 (48.97%)	0.14	30 (63.82 %)	8 (33.33 %)	0.02*
Anxiety disorder	2 (10.52 %)	12 (16.21 %)	0.73	6 (23.07 %)	7 (14.28 %)	0.35	4 (8.51 %)	5 (20.83 %)	0.26
ADHD	10 (52.63%)	11 (4.86 %)	0.001*	10 (38.46 %)	17 (34.69 %)	0.47	17 (36.17 %)	3 (12.5 %)	0.031*
Oppositional defiant Disorder	6 (31.57 %)	5 (6.75 %)	0.008*	7 (26.92 %)	1 (2.04 %)	0.002*	13 (27.65%)	0	0.003*
Conduct disorder	0 (%)	2 (2.70 %)	1.00	1 (3.84%)	0	0.35	1 (2.12%)	0	1
Substance depend	1 (5.26 %)	12 (16.21%)	0.29	0	1 (2.04 %)	1	0	0	
Tics	2 (10.52%)	1 (1.35 %)	0.11	0	0		2 (4.25%)	0	0.55
Enuresis	2 (10.52 %)	0	0.04*	3 (11.53%)	0	0.04*	2 (4.25 %)	0	0.55

Note: MDD major depressive disorder; BP I = bipolar disorder type I; BP II = bipolar disorder type II; NOS = not otherwise specified; * = Significant difference.

Psychiatric Comorbidity:

Comorbid psychiatric disorders among children and adolescents suffering from BD included anxiety disorders, ADHD, oppositional defiant disorder (ODD), conduct disorder, drug abuse, tics and nocturnal enuresis. Children with BD had more comorbid psychiatric disorders than adolescents. Attention deficit hyperactivity disorder (ADHD), ODD and nocturnal enuresis were significantly more prevalent in children than adolescents (P<.05) (table 1).

Comorbid ADHD, ODD and nocturnal enuresis were more common in children with BP-I than adolescents. Comorbid ODD and nocturnal enuresis was more in children with BP-II. Comorbid ADHD, ODD was found among children with BP-NOS than adolescents (table 3).

Clinical features:

Irritable mood was more common in children than adolescents; otherwise, all manic symptoms were more common in adolescents (table 2).

Psychotic symptoms were present in 3 children and 40 adolescents with BD-I and were more significantly common in adolescents than children (p<0.05) (table 1).

Comparison of manic symptoms in different BD among children and adolescents revealed that, in cases with BD-I, Irritable mood was significantly more common in children than adolescents, while elevated or expansive mood and inflated self-esteem/grandiosity, were significantly more in adolescents (P<0.05) (table 4).

Table (4): Comparison of childhood-onset and adolescent-onset manic symptoms during episodes of BP-I, BP-I I and BP-NOS.

Symptom	BP I (n =93)			BP II (n =75)			BP -NOS (n =71)		
	Childhood Onset (n = 19)	Adolescent Onset (n = 74)	P	Childhood Onset (n = 26)	Adolescent Onset (n = 49)	p	Childhood Onset (n = 47)	Adolescent Onset (n = 24)	p
Elevated or expansive mood	7 (36.84%)	46 (62.16 %)	0.07	6 (23.07 %)	4 (8.16 %)	0.09	0	0	
Irritable mood	12 (63.15 %)	28 (37.83 %)	0.07	20 (76.92 %)	45 (91.83%)	0.09	47 (100 %)	24 (100 %)	
Decreased need for sleep,	19 (100 %)	71 (95.94 %)	1	4 (15.38 %)	7 (14.28 %)	1	5 (10.63 %)	3 (12.5 %)	
Inflated self-esteem/ grandiosity,	8 (42.10 %)	67 (90.54 %)	.000*	0	15 (30.61%)	0.001*	2 (4.25 %)	9 (37.5 %)	0.001*
Motor hyperactivity	19 (100 %)	74 (100 %)		13 (50 %)	27 (55.10%)	0.81	22 (46.80%)	7 (29.16 %)	0.20
Accelerated speech	19 (100 %)	74 (100 %)		10 (38.46 %)	36 (73.46 %)	0.006*	26 (55.31 %)	8 (33.33 %)	0.13
Flight of ideas	8 (42.10%)	27 (36.48 %)	0.80	0	3 (6.12 %)	0.55	0	0	
Distractibility	19 (100 %)	74 (100 %)		10 (38.46 %)	27 (55.10 %)	0.23	24 (51.06 %)	19 (79.16 %)	0.04*
Poor judgment	15 (78.94 %)	42 (56.75 %)	0.11	18 (69.23 %)	5 (10.20 %)	.000*	22 (46.80 %)	6 (25 %)	0.12
Hypersexuality	16 (84.21 %)	64 (86.48 %)	0.73	3 (11.53 %)	18 (36.73 %)	0.03*	4 (8.51 %)	7 (29.16 %)	0.04*

Note: BP I = bipolar disorder type I; BP II = bipolar disorder type II; NOS = not otherwise specified.

In BD-II, inflated self-esteem/grandiosity, accelerated speech, poor judgment and hypersexuality were significantly more in adolescents (P<0.05) (table 4). In BD-NOS inflated self-esteem/ grandiosity, distractibility and hypersexuality were significantly more in adolescents (P<0.05) (table 4).

Adolescents suffering from BD showed more impairment in functioning (CGAS 51.24±3.24) than children (54.54±2.43). When considering BD subtypes, adolescents suffering from BP-I and BP-NOS showed more functional impairment than children suffering from BP (P<0.05). However, there was no significant difference in functioning among children and adolescents suffering from BP-II (table 1, 3).

DISCUSSION

We tried to evaluate different characteristics of BD and its subtypes in children and adolescents, including demographic characteristics, family history, psychiatric disorders, psychiatric comorbidity and clinical features. Many suggestions may be drawn from this study:

Demographic Characteristics

There is increased recognition that BD has an early age of onset. The prevalence of BD in adolescence is approximately 1%; however the prevalence in prepubertal children has not been determined[10]. In this study, BD was confirmed in children as young as 7.3 years. Also, BP-NOS was found more common at younger age than BP-II and in both than those with BP-I, that is mania become more common as age get older. This finding may refer to developmental differences in the evolution of BD, which is the full blown picture of mania is achieved as children grow up.

There was no significant gender difference among children and adolescents suffering from BD in this study. However, male children suffering from BP-NOS were significantly

more than adolescents suffering from BP-NOS. On the other hand no statistical gender difference was found in BP-I and BP-II among children and adolescents. Similar results showed there is no gender difference between children and adolescents suffering from BD or its subtypes[11].

Family history

Our results suggest that family history of psychiatric disorders was not different in families of children and adolescents suffering from BD and its subtypes, a finding which may reflect shared genetic and /or environmental factors in families of those patients. However, childhood-onset BD showed higher percentages of positive first-degree family history for depression, anxiety, ADHD, conduct and substance dependence disorders and suicidal behaviors compared with adolescents[12].

Psychiatric comorbidity

Children with BD had more comorbid psychiatric disorders than adolescents. ADHD, ODD and nocturnal enuresis were significantly more prevalent in children than adolescents.

Comorbid ADHD, ODD and nocturnal enuresis were more common in children with BP-I than adolescents. Comorbid ODD and nocturnal enuresis was more common in children with BP-II. Comorbid ADHD, ODD was found more common among children with BP-NOS than adolescents.

The co-occurrence of ADHD and BD has received much attention in the literature. as compared with adolescent-onset BD, patients with childhood-onset were more frequently males and had more frequent co-morbidity with ADHD and ODD[13,14]. While phenomenologic, genetic, family, neuroimaging and treatment studies revealed that BPD and ADHD have both common and distinct characteristics, some studies suggested that ADHD symptoms represent a prodromal or early manifestation of pediatric-onset BP in certain at-risk individuals. BD with comorbid ADHD may thus represent a developmentally specific phenotype of early-onset BD[15]. Longitudinal and biological studies are warranted to clarify the relationships between BD and ADHD since they may have important diagnostic and treatment implications.

Clinical features

Irritable mood and poor judgment were more common in children with BD than adolescent with BD. Irritable mood was also reported to be more common in the younger group of bipolar youth sample[16].

Manic symptoms that were more common in adolescents included elevated mood, decreased need for sleep, grandiosity, accelerated speech, flight of ideas, poor judgment, distractibility, motor hyperactivity and hypersexuality.

Comparison of manic symptoms in different BD among children and adolescents revealed that inflated self-esteem/grandiosity and flight of ideas were more common in adolescents than children with BD with statistically significant difference. In BP-II inflated self-esteem/ grandiosity, accelerated speech and hypersexuality were more common in adolescents than children. Mood lability and poor judgment were more common in children than adolescents.

In BP-NOS inflated self-esteem/ grandiosity and hypersexuality were more common in adolescents than children and distractibility was more common in children than adolescents.

Adolescents suffering from BP showed more impairment in functioning than children. When considering BD subtypes, adolescents suffering from BP-I and BP-NOS showed more functional impairment than children suffering from BD. However, there was no significant difference in functioning among children and adolescents suffering from BP-II. Other studies found that functional impairment was less in the subjects with BP-II compared with the subjects with BP-I,[17]. Whether the diagnosis of BP-II in children and adolescents has distinct implications from that of BP-I will require replication studies.

Psychotic symptoms were present only in BP-I and were more adolescents than children, a finding which was confirmed by other studies[17]. Thus, Clinicians must be vigilant in identifying psychosis in BD in this age and it should be differentiated from schizophrenia.

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