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Child behavior checklist profiles in adolescents with bipolar and depressive disorders

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Abstract

Objective: We aimed to evaluate the Child Behavior Checklist (CBCL) profiles in youths with bipolar and depressive disorders.
Methods: Seventy-four subjects with a mean age of 14.9 ± 1.6 years (36 boys) with mood disorders and their parents were recruited from September 2011 to June 2013 in the Department of Psychiatry, Asan Medical Center, Seoul, Korea. Diagnosis of mood disorder and comorbid psychiatric disorder was confirmed by child psychiatrists using the Schedule for Affective Disorders and Schizophrenia for School Age Children - Present and Lifetime version (K-SADS-PL). The parents of the subjects completed the Parent General Behavior Inventory-10-item Mania Scale (P-GBI-10M), Parent-version of Mood Disorder Questionnaire (P-MDQ), ADHD rating scale (ARS) and CBCL. The adolescents completed the 76-item Adolescent General Behavior Inventory (A-GBI), Beck Depression Inventory (BDI), and Adolescent-version of Mood Disorder Questionnaire (A-MDQ).
Results: When adjusted for gender and the comorbidity with ADHD, the Withdrawn and Anxious/Depressed subscale scores of the CBCL were higher in subjects with bipolar disorder than in those with depressive disorder. Higher scores of A-GBI Depressive subscale, A-MDQ and BDI were shown in subjects with bipolar disorder than in those with depressive disorder. There was no significant difference on CBCL-DP, P-GBI-10M, P-MDQ, A-GBI Hypomanic/Biphasic subscale and ARS between two groups. All eight subscales of the CBCL positively correlated with the P-GBI-10M and P-MDQ scores, and seven of all eight subscales of the CBCL positively correlated with A-GBI Depressive and Hypomanic/Biphasic subscales. The BDI score was positively associated with the Withdrawn, Somatic Complaints, Anxious/Depressed, and Social Problems subscale scores. CBCL-DP score was strongly correlated with manic/hypomanic symptoms measured by P-GBI-10M and P-MDQ (r = 0.771 and 0.826).
Conclusions: This study suggests that the CBCL could be used for measuring mood symptoms and combined psychopathology, especially internalizing symptoms, in youth with mood disorder. However, CBCL-DP had limited ability to differentiate bipolar from depressive disorder, at least in adolescents.

1. Introduction

Pediatric bipolar disorder (PBD) is known to severely affect the psychosocial functioning of children and adolescents and increase the risk of suicide, substance abuse, and cause academic, social, and legal problems [1]. The early diagnosis and treatment of PBD is therefore crucial, but it is hard to distinguish from other psychiatric disorders, especially from major depressive disorder [2]. First, PBD can present with very short and frequent syndromal or subsyndromal mood episodes and show chronic fluctuating patterns without remission [1]. Second, the clinical manifestations of PBD can vary according to the developmental stage. In early childhood, irritability and mood fluctuations are common. However, for older subjects, euphoria, elated mood, persecutory ideas, and grandiose delusions are more frequent [1]. Third, PBD is highly comorbid with other psychiatric disorders, such as attention–deficit/hyperactivity disorder (ADHD) or disruptive behavior disorder [1,3].

Previous reports have suggested that PBD subjects show distinct profiles on the Child Behavior Checklist (CBCL) [4] compared to children with other psychiatric disorders [5–7]. An earlier meta-analysis found that PBD subjects have higher scores on the Aggressive Behaviors, Attention Problems, and Anxious/Depressed subscales than those with ADHD [3]. In addition, Biederman et al. [5] proposed

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an algorithm using the subscales from the CBCL, the CBCL-dysregulation profile (CBCL-DP), which is the sum of the Attention Problems, Aggressive Behaviors, and Anxious/Depressed subscale scores of CBCL. Several other groups have suggested that the CBCL-DP could be used for the diagnosis of PBD [8–10]. On the other hand, other investigators failed to find a meaningful association between the CBCL-DP profile and diagnosis of PBD [11–16]. In addition, few studies to date have investigated the discrimination ability of the CBCL between youths with bipolar and depressive disorders [7,14]. Moreover, these studies have mainly been conducted in Western countries. Because cultural background may contribute to different levels of awareness and recognition of mood symptoms [17], the validation in international samples is important.

The purpose of this study was to compare the CBCL profiles in youth with bipolar and depressive disorders. We also evaluated whether the CBCL-DP could differentiate between youths with bipolar and depressive disorders.

2. Methods

2.1. Participants

Adolescents with bipolar and depressive disorders and their parents were recruited from September 2011 to June 2013 at the outpatient child psychiatric clinic of the Asan Medical Center, Seoul, Korea. All subjects met the following inclusion criteria: (1) aged between 12 and 18 years, and (2) diagnosis of a depressive or bipolar disorder according to the Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition). Subjects were excluded from this study if they had one or more of the following features: (1) suspected mental retardation or an IQ score lower than 70, (2) past and/or current history of schizophrenia, other psychotic disorder, organic mental disorder, or pervasive developmental disorder, and (3) presence of seizures or other neurological disorders. We obtained written informed consent from all subjects and their parents. The institutional review board of the Asan Medical Center approved all procedures used in this study.

2.2. Measures

The diagnoses of mood disorders and comorbid psychiatric disorders were determined based on the Korean version of the Schedule for Affective Disorders and Schizophrenia for School Age Children - Present and Lifetime version (K-SADS-PL) [18,19]. Bipolar disorder not otherwise specified (NOS) was defined based on the criteria for the Course and Outcome of Bipolar Youth (COBY) study [20,21]. The COBY study operationalized criteria as follows: a) elated mood plus two associated B Criteria symptoms of mania or irritable mood plus three B Criteria symptoms; b) clear change of subject's level of functioning; c) symptoms must be evident for a minimum of four hours in a day on a minimum of four separate days. In addition, worsening of any pre-existing symptoms during episode is required.

The participants and their parents completed K-SADS-PL by two child psychiatrists (H.W.K. and H.J.L.). The parents completed the Korean version of the CBCL [22]. The CBCL is a widely-used and easily-accessible screening tool for children's internalizing and externalizing problems [4]. It includes 118 items describing behaviors, which are rated from 0 (not at all typical of the child) to 2 (very typical of the child). After generating T-scores on scales that assess empirically-derived dimensions of psychopathology, a profile of childhood psychological problems can be described on eight subscales. The CBCL-DP is calculated as the sum of the Anxious/Depressed, Aggressive Behaviors, and Attention Problems subscales. The CBCL-DP was defined as positive by a total score of ≥210 [9]. The parents of the subjects also completed the Korean version of the Parent General Behavior Inventory-10-item Mania Scale (P-GBI-10M) [23,24] and the Parent-version Mood Disorder Questionnaire (P-MDQ) [25] which measure manic/hypomanic symptoms and ADHD rating scale (ARS) [26,27]. The adolescent patients completed the Korean version of the 76-item Adolescent General Behavior Inventory (A-GBI) [24,28] assessing manic/hypomanic or depressive symptoms [29], the Adolescent-version of the Mood Disorder Questionnaire (A-MDQ) [25,30] measuring manic/hypomanic symptoms, and the Beck Depression Inventory (BDI) [31,32] which assess depressive symptoms [33].

2.3. Statistical methods

The analysis of covariance (ANCOVA) was used to examine whether the scores of CBCL subscales and other scales of adolescents with bipolar diagnosis differed from those of subjects diagnosed with depression. Partial correlation analysis was employed between the scores of the CBCL subscales and other scales. The diagnostic efficiency of CBCL-DP and other scales was quantified using area under the receiver operating curve (AUROC) analysis. Statistical analyses were performed using the Statistical Package for the Social Sciences, version 20.0 (IBM Corp, Armonk, NY, USA).

3. Results

3.1. Demographic information

Demographics and clinical characteristics are detailed in Table 1. A total of 74 adolescent subjects, 56 with depressive disorder (mean age 14.8 ± 1.6 years, range 12–18; 31 boys (55.4%)) and 18 with bipolar disorder (mean age 15.3 ± 1.5 years, range 13–18; 5 boys (27.8%)) participated in the present study. Among 56 subjects with depressive disorder, 50 (89.3%) were diagnosed as major depressive disorder and nine (16.1%) as dysthymic disorder. In the bipolar group, two (11.1%) subjects had bipolar I disorder and 11 (61.1%)