CASE REPORT

Simultaneous Early-Onset Bipolar Disorder in Monozygotic Twins

Suria Hussin[1], Noorul Amilin Harun[1], Aini Hayati Mohd Hashim[2], Nik Suhaila Zakaria[3]

[1]Department of Psychiatry & Mental Health, Hospital Tengku Ampuan Afzan, Ministry of Health Malaysia, Kuantan, Pahang, Malaysia
[2]Department of Psychiatry & Mental Health, Hospital Sultanah Nur Zahirah, Ministry of Health Malaysia,Terengganu, Malaysia
[3]Klinik Kesihatan Labok, Machang, Ministry of Health, Kelantan, Malaysia

Abstract

Objective: This case report highlights the importance of genetic contribution to the liability of bipolar disorder and atypical complex presentation. Methods: We describe a pair of monozygotic twins presented with acute manic symptoms with psychosis that occurred simultaneously. Results: The cases were chosen as they illustrate various presentations of bipolar disorder in children and adolescent and the importance of early treatment. Conclusions: Bipolar disorder should be considered in children and adolescent presented with episodic mood and behaviour changes.

Keywords: Early-Onset Bipolar Disorder, Monozygotic Twin, Adolescent, Simultaneous

Introduction

Bipolar disorder is a mental disorder that marked by obvious changes in mood and behavior which can occur at various times in life. Most cases begin at 15 to 19 years age range, known as early-onset bipolar and the second most frequent age range is between 20 to 24 years [1]. However, most genetics research defined early-onset bipolar disorder as occurring before the age of 18 to 25 [2]. Early-onset bipolar disorder is difficult to diagnose because of overlapping symptoms with other disorders, diagnostic confusion, different clinical features, and lack of awareness [3]. Therefore, it requires a careful and thorough evaluation by an experienced mental health professional. Research showed that early-onset bipolar was attributed by 60% to 70% genetic loading and 30% to 40% environmental factors [2]. Children and adolescent who received a diagnosis of bipolar disorder typically present with rapid fluctuations in mood and behavior, non-episodic course, grandiosity, psychomotor agitation, chronic rapid cycling, and presence of mixed states [4 and 5]. Early-onset bipolar has often been associated with a worse prognosis, more psychotic features, substance use disorder, comorbidity with panic and obsessive–compulsive disorders, rapid cycling, lower

lithium-response, and more suicide attempts [6]. Here, we report a pair of monozygotic twins that simultaneously presented with acute mania and psychosis.

Case Report

The twins are 16-year-old Malay female with both having good academic background and positive family history of untreated mood disorder.

Twin A

Twin A presented to psychiatry clinic with one-week history of increased irritability, excessive talkativeness and loudness, reduced need for sleep, with demanding and aggressive behaviour. These symptoms preceded by having worries of her upcoming exam, covid-19 pandemic and her father's health who was diagnosed with stage 4 colon cancer. Further questioning revealed presence of hypomanic symptoms since the age of 9, which lasted for 3 to 4 days and occurred up to 2-3 times per year. One of the hypomanic symptoms that she experienced was increased goal directed activity in the form of theft wherein family attributed to behavioural problems. In ward, her vital signs and systemic physical examination was unremarkable. Her mental status assessment revealed full-blown manic symptoms with psychotic features, and the initial Young Mania rating Scale (YMRS) score was 47. Her routine laboratory test and imaging were normal. A DSM-5 provisional diagnosis of Bipolar I Disorder severe, most recent episode manic with mood congruent psychotic features was made. Because of the severity of the disorder, she required both chemical and physical restraints, and was put on Epilim, Olanzapine and Lorazepam. After 2 weeks of unimprovement with pharmacotherapy, electroconvulsive therapy (ECT) was commenced wherein she responded well, with post ECT YMRS score of 9. However, she complained of amnesia post ECT, scoring 27/30 on Mini Mental State Examination (MMSE). She was able to be discharged home after 8th courses of ECT. During follow-ups at clinic, her mood was stable, and amnesia improved with full score on repeated MMSE.

Twin B

Twin B was brought by mother for admission two weeks after Twin A was admitted to psychiatric ward. Since her twin's hospitalization, she started to exhibit manic symptom such as irritability, spending spree, talkativeness, reduced need for sleep and persecutory delusion. The peak of the symptoms was when she had reckless behaviour and increased goal directed activity in which she sped to school the night prior to exam day and ended up sustaining soft tissue injury from an accident. The stressor for her emerging symptoms were her upcoming exam, covid-19 pandemic, her father's health, and her twin's condition. In ward, her vital signs and systemic physical examination were unremarkable. Her mental status examination revealed irritable mood, distractibility, talkativeness with pressured speech and presence of persecutory delusion. Her routine laboratory test and imaging were normal. A DSM-5 provisional diagnosis of Bipolar I disorder severe, most recent episode manic with mood congruent psychotic features was made. She was very disturbing, demanding and paranoid towards others which required physical and chemical restraints. She was put on Lithium in addition to initial Olanzapine and Benzodiazepine, where she started to show positive responds. She was able to be discharged after three weeks with some residual hypomanic symptoms.

Discussion

Recognition that bipolar disorder may present differently in children and adolescent than in adults is very important. Using DSM 5 guidelines to diagnose bipolar disorder in children and adolescent is quite difficult, as there is no separate criteria for them. However, Disruptive Mood Dysregulation Disorder (DMDD) is a new addition to DSM 5 that aims to combine bipolar disorder that first appears in childhood with oppositional behaviors [7]. As in Twin A's case, the earlier presentation is most likely toward oppositional behaviour, that can be misdiagnosed.

Bipolar Disorder is one of the most heritable of psychiatric illnesses, second only to autism [8]. Twin studies of bipolar disorder have frequently shown a higher concordance for the disease in monozygotic than in dizygotic twins. Current models of aetiology view bipolar disorder as a primarily genetic illness whose onset and course are influenced by environmental stressors [8]. Chronic stress in family, romantic, and peer relationships are important targets for psychosocial intervention [9]. In our patients, alongside genetic contribution to this disorder, they share a relatively common environment that can attribute to 30%– 40% of the variance besides other stress factors mainly during Covid-19 pandemic [2]. Manifestation of the symptoms in these cases, with two weeks interval can also be explained by the twins' emotional closeness apart from their genetic overlap.

According to the literature, the presence of psychotic symptoms seems to be more frequent in child and early-onset bipolar patients and relates to poorer long-term outcome, more hospitalizations, lower inter-episodic functioning, and a lower clinical recovery rate [4]. The most common mood disturbance in manic children is severe irritability, prolonged and aggressive temper outbursts and aggressive symptoms which may be the primary reason for the high rate of psychiatric hospitalization seen in manic children like in our cases [8 and 10]. In our case, Twin A seemed to exhibit symptoms of bipolar more earlier since the age of 9, but it was described as a behavioral problem, and due to these behaviours in the form of repeated stealing , she had been frequently punished by parents and humilated by others. Thus, it is not surprising that these children could receive the diagnosis of conduct disorder. This is another important consideration when differentiating pathological from non-pathological behaviors whether the behavior is appropriate to the context in which it was displayed [13].

Practice guidelines for the treatment of children and aadolescent with mental health problems tend to mention integrating psychopharmacologic treatment with psychosocial interventions [11]. The management often requires multiple medications especilly in manic with mixed states and presence of psychotic symptoms like in our cases. Mood stabilizers also were frequently used in these children with bipolar and their use was associated with significant improvement of manic-like symptoms and study showed that 65% of the children would improve if treated with lithium carbonate for 2 years [10]. Further psychosocial strategies to augment pharmacotherapy may improve outcome while reducing the medication burden in bipolar disorder in children and adolescent [12].

Conclusion and recommendation

This is an important case to demonstrate

various presentations in children bipolar including atypical callous behavioural pattern and prominent mixed features of manic with psychosis. Diagnosing bipolar disorder in children and adolescent can be complex and requires a careful and thorough assessment by an experienced mental health professional.

Authors' Contribution

Suria H, Aini Hayati MH and Nik Suhaila NZ were involved in the first draft of the patient's history and content and Noorul Amilin H reviewed and approved the contents of the manuscript.

Ethical Approval

Informed consent was obtained from the patients' parents.

Conflict of Interest

The authors have no conflict of interest to declare.

Acknowledgement

We would like to thank the Director General of Health Malaysia for his permission to publish this article.

References

[1] Stephen S. In what age groups is the onset of bipolar affective disorder (manic-depressive illness) most likely? Medscape, May 2019.

[2] Stephen V. Faraone, Stephen J. Glatt and Ming T. The Genetics of Pediatric-Onset Bipolar Disorder. Biol Psychiatry 2003; 53:970–977.

[3] A.Tsarkov and P.Petlovanyi. Bipolar Disorder in Child Psychiatric Practice: A case report. Medical Journal of Zambia Vol 43, No1:41-46 (2016).

[4] Fu-I L, Gurgel WS, Caetano SC, Machado- Vieira R, Wang YP. Psychotic and affective symptoms of early-onset bipolar disorder: an observational study of patients in first manic episode. Braz J Psychiatry. 2020 Mar-Apr;42(2):168-174.

[5] Tanvir Singh. Pediatric Bipolar Disorder, Diagnostic Challenges in Identifying Symptoms and Course of Illness.Psychiatry June 2008.

[6] Kevin P. Kennedy, Kathryn R. Cullen, Colin G. DeYoung, and Bonnie Klimes-Dougan. The genetics of early-onset bipolar disorder: A systematic review. J Affect Disord. 2015 September 15; 184: 1–12.

[7] David Axelson. Taking Disruptive Mood Dysregulation Disorder Out for a Test Drive. The American Journal of Psychiatry. Published Online :1 Feb 2013.

[8] Dawn O. Taylor and David J. Miklowitz. Bipolar Disorder in Childhood and Adolescence. Rev Bras Psiquiatr. 2004 October; 26(Suppl 3): 22–26.

[9] Eunice Y. Kim, David J. Miklowitz, Adrine Biuckians and Kimberley Mullen, Life Stress and the Course Of Early-Onset Bipolar Disorder. J Affect Disord. 2007 April ; 99(1-3): 37–44.

[10] Joseph Biederman, Eric Mick, Stephen V. Faraone, Thomas Spencer, Timothy E. Wilensand Janet Wozniak. Current concepts in the validity, diagnosis and treatment of paediatric bipolar disorder. International Journal of Neuropsychopharmacology (2003), 6, 293–300.

[11] Gloria Reeves and Bruno Anthony. Multimodal Treatments versus Pharmacotherapy Alone in Children with Psychiatric Disorders: Implications of Access, Effectiveness, and Contextual Treatment. Paediatr Drugs. 2009.

[12] Mona P. Potter, Howard Y. Liu, Michael C. Monuteaux, Carly S. Henderson, Janet Wozniak, Timothy E. Wilens, and Joseph Biederman. Prescribing Patterns for Treatment of Pediatric Bipolar Disorder in a Specialty Clinic. Journal of Child and Adolescent Psychopharmacology Volume 19, Number 5, 2009.

[13] Stephanie Danner, Mary A. Fristad, L. Eugene Arnold, Eric A. Youngstrom, Boris Birmaher, Sarah M. Horwitz et al. Early-Onset Bipolar Spectrum Disorders: Diagnostic Issues, Clin Child Fam Psychol Rev. 2009 September, 12(3): 271–293.

Corresponding Author
Suria Hussin
Department of Psychiatry & Mental Health
Hospital Tengku Ampuan Afzan, Jalan Tanah Putih,
25100 Kuantan, Pahang,
Malaysia

Email: drsuria@moh.gov.my