

Abstract

Objectives: Heritability of bipolar disorder is a complex inter-play between genetic and environmental factors. Emerging evidences show that a familial risk of bipolar disorder is associated with a higher risk of psychiatric morbidities including subthreshold disorders within the bipolar spectrum. Hypersensitivity of the Behavioral Activation System (BAS) is associated with bipolar spectrum disorders whereas both unipolar and bipolar depressions are associated with Behavioral Inhibition System (BIS) hypersensitivity. Nonetheless, studies of the relationship between the BAS/BIS sensitivities as a trait vulnerability marker of bipolar spectrum disorders and the familial risk of bipolar disorders are lacking. This study aimed to investigate the relationships between BAS/BIS sensitivities as a trait vulnerability, traumatic events, and subthreshold affective symptoms in non-psychiatric individuals at high risk of onset of bipolar spectrum disorders as indicated by their first-degree relative status with bipolar I patients.

Methods: Sixty non-psychiatric first degree relatives of bipolar I patients and sixty gender- and age-matched controls without a family history of bipolar I disorder were recruited. Differences in subthreshold hypomania, subthreshold depression and subthreshold anxiety between the two groups were investigated. Degrees of childhood trauma and lifetime traumatic events were also examined. The BAS and BIS sensitivities were measured by the BIS/BAS scales. A stepwise hierarchal regression model was used to evaluate the significance of BAS and BIS sensitivities as

independent risk factors associated with subthreshold affective symptoms over and above other known factors as such.

Results: Subthreshold depression and subthreshold anxiety were more prominent in the high risk group than the control group, while the BIS sensitivity as represented by the BIS score acted as an independent factor associated with such symptoms over other factors including the genetic risk of bipolar disorder and higher degree of trauma for the whole sample. No significant differences in the BAS sensitivity and the prevalence of subthreshold hypomania were found however between the two groups.

Conclusions: A genetic risk of bipolar disorder in an individual can be reflected by the presence of subthreshold depressive and anxiety symptoms; in which the BIS sensitivity is an independent factor associated with such symptoms. Given that subthreshold conditions may lead to subsequent full-blown affective disorders and are also associated with substantial psycho-social impairments, clinicians should enhance their awareness of the detection of such subthreshold conditions, especially in individuals with high genetic risk of bipolar disorder. It is also worthwhile to further investigate BIS sensitivity as a possible marker of subsequent onset of depressive or anxiety disorders among people at high bipolar risks

Keywords: bipolar spectrum disorder; family history; subthreshold bipolarity; subthreshold depression; subthreshold anxiety; behavioral activation system; behavioral inhibition system; trait vulnerability; childhood trauma; life events