

Associations between C-reactive protein and recent life-events stress with cognitive impairment in patients with bipolar disorder

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Background

Bipolar disorder (BD), a psychiatric illness characterized by extreme mood swings, affects the lives of patients and those around them. The cognitive impairment in BD persists even during euthymic periods, which may have a huge impact on occupational ability and social integration. Accumulating evidence suggests that inflammation may play a role on the pathogenesis of BD, and that C-reactive protein (CRP), a biomarker for inflammation, was associated with BD. Besides, previous reports indicated that the exposure of recent life-events stress caused alternations in mood and behavior, thus increasing the vulnerability to psychiatric disorders. In this study, we aimed (1) to investigate the association between CRP levels with BD, and (2) to investigate the associations between CRP levels and the exposure of recent life-events stress with cognitive impairment.

Method

58 BD patients who met the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-V) were enrolled consecutively by trained psychiatrists. In addition, 112 controls without any psychiatric disorder, neurological disorder, alcohol abuse, and substance abuse were enrolled from community through advertisement. Participants were required to complete the Taiwanese version of the Schedule of Recent Experience, a questionnaire containing 39-item regarding representative life change events in the past 12 months. The Wisconsin Card Sorting Test (WCST) was used as a measure of cognitive function.

Results

The BD patients had higher plasma CRP levels, worse cognitive performance, but similar exposure of recent life-events stress compared to controls. The association between CRP and the exposure of recent life-events stress was found in BD patients ($r=0.338$, $p=0.008$) but not in controls ($r=0.146$, $p=0.130$). Neither CRP nor the exposure of recent life-events stress was associated with cognitive function in BD patients, whereas the exposure of recent life-events stress was associated with preservative errors on WCST ($r=0.228$, $p=0.022$) and the number of completed categories on WCST ($r=-0.213$, $p=0.033$) in controls.

Conclusions

This study examined the associations between CRP levels and the recent life-events stress with cognitive impairment in BD patients. Further studies are needed to elucidate their causal relationships.