

Correlation of potential diagnostic biomarkers (peripheral miRNA and protein) of bipolar II disorder

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Background: In our previous studies, we have identified certain peripheral biomarkers of bipolar II disorder (BD-II) including miRNAs (miR-7-5p, miR-142-3p, miR-221-5p, and miR-370-3p) and proteins (Matrix metalloproteinase 9 (MMP9), phenylalanyl-tRNA synthetase subunit beta (FARSB), peroxiredoxin 2 (PRDX2), carbonic anhydrase 1 (CA-1), and proprotein convertase subtilisin/kexin type 9 (PCSK9)).

Aims & Objectives: In order to clarify the underlying connection of the candidate miRNAs and proteins in the pathogenesis of BD-II, it is of interest to investigate the correlation between the peripheral levels of these miRNAs with protein.

Methods: Ninety-nine patients with BD-II and 115 normal controls were included in the current study. Correlations between the peripheral levels of miR-7-5p, miR-142-3p, miR-221-5p, miR-370-3p, and MMP9, FARSB, PRDX2, CA-1 and PCSK9 were analyzed in both BD-II patients and control groups. Correlations between clinical symptoms and these peripheral biomarkers were also analyzed.

Results: We found that the miR221-5p significantly correlated with the PRDX2 ($r=-0.307$, $P=0.002$) and CA-1 ($r=-0.336$, $P=0.001$) levels in the BD-II group. We also found that the FARSB significantly correlated with miR-7-5p ($r=0.338$, $P=0.001$) and miR-370-3p ($r=0.345$, $P<0.001$). No correlations between any miRNAs and proteins were found in the control group.

Discussion & Conclusion: Our result supported that peripheral candidate miRNA and protein biomarkers may share similar pathomechanism in BD-II.