Yan Li et al., Epidemiol 2014, 4:4
http://dx.doi.org/10.4172/2161-1165.S1.008

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Epidemiology & Evolutionary Genetics
August 18-19, 2014 DoubleTree by Hilton Beijing, China

BDNF promoter IV methylation analysis for PTSD resilience among survivors of the flood 14 years ago

Yan Li[1], **Ai-Zhong Liu**[1] and **Jie Liu**[2]
[1]Central South University, China
[2]Tongji University, China

Introduction: Brain derived neurotrophic factor (BDNF) has been shown to play an important role in the pathophysiology of mental health diseases including posttraumatic stress disorder (PTSD). PTSD is influenced by the multifactorial interaction of many risk factors. Therefore, epigenetic research may lead to understand the recovery of PTSD. The objective of the study was to investigate whether BDNF gene promoter methylation status were associated with PTSD's prognosis after 14 years.

Methods: A total of 108 patients were followed-up for 14 years, PTSD was diagnosed according to DSM-IV criteria like before. Ten of the patients' study was still found to carry the signs of PTSD, and 98 of the others found to have recovered. By 1:1:1 age and sex matching, we came into 3 groups- those with PTSDs, recovered subjects and healthy controls. The promoter methylation of the gene encoding BDNF was measured by pyrosequencing. The associations of BDNF methylation status and score on PTSD assessment scales were estimated using rank correlation test. Wilcoxon signed-rank test was used to compare the methylation status of the three groups.

Results: Peripheral blood samples from PTSD subjects showed a statistically significant increase of DNA methylation at specific CpG sites in BDNF promoter/exon IV compared with healthy controls ($P<0.05$), but not with recovered subjects. Significant relationship between the methylation level and score correlation were found.

Limitation: Methylation status was investigated with limited area of the BDNF gene and sample size was relatively small. We were also not able to do the longitudinal comparison as we didn't collect the blood sample 14 years ago.

Conclusion: BDNF promoter/exon IV is frequently hypermethylated in the Hunan area of the peripheral blood cell (PBC) of PTSD. Epigenetic alteration of BDNF in the PBC might reflect the prognosis of PTSD, and could be a potential biomarker.

Biography

Yan Li has completed her Bachelor's degree at the age of 24 from Hunan Normal University. She is currently pursuing her Postgraduate in School of Public Health, Central South University. She has published more than three papers in Chinese journal .

414962799@qq.com