Article: 0252
Topic: FC09 - Free Communications 09: Schizophrenia 3, Genetics and Neurobiology and Neuroimaging

Affective Network Hyperconnectivity and Hypoconnectivity of Cognitive Control and Ventral Attention Networks in Adults with High Neuroticism Scores

A. Carballedo[1], M. Doyle[1], G. Lavelle[1], J. Gormley[1], V. O'Keane[1], T. Frodl[1]

[1]Institute of Neuroscience, Trinity College Dublin, Dublin, Ireland

Subjects with high neuroticism are more likely to interpret ordinary situations as negative, this might contribute towards mood and anxiety. The aim of our study was to determine the localization of neuroticism-related resting state functional connectivity (RSFC) differences between the two groups of high and low neuroticism, and to confirm our hypothesis that subjects with high neuroticism show hyperconnectivity in the affective network and hypoconnectivity in the cognitive control and attention networks.
Forty three healthy participants underwent resting state fMRI and completed the NEO Five Factor Personality Inventory. SPM8 and CONN software was used to pre-process and analyse resting state fMRI data. Correlation maps were produced between seed regions of the affective, cognitive control, attention and default mode networks and differences were analysed between groups fully corrected for multiple testing across the whole brain.
Participants with high neuroticism displayed significantly greater functional connectivity in the affective network. There was significantly less functional connectivity in the cognitive control network and ventral attention network for participants with high neuroticism scores when compared to those with low neuroticism scores.
Affective network hyperconnectivity might be related to emotional problems or mood disorders that are associated with high neuroticism. The hypoconnectivity seen in the cognitive control network might have to do with inattention and cognitive deficits that have consistently been found depression and anxiety disorders. Thus, oversensitivity in affective systems and at the same time reduced cognitive control might be in line with increased stress sensitivity and emotional lability in subjects with high neuroticism.

https://doi.org/10.1016/S0924-9338(15)30207-8 Published online by Cambridge University Press