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Brain coordination and the association with diet in prediabetes

Yi-Cheng Hou¹, Jiun-Rong Chen¹, Shwu-Huey Yang¹, Yu-Te Wu², Cheng-yu Chen³ and Chien-Han Lai²¹Taipei Medical University, Taiwan²National Yang-Ming University, Taiwan³Taipei Tzu Chi Hospital, Taiwan

The functional connectivity of diabetes can help us explain the brain function decline in hyperglycemic status. However, the issue has not been addressed much in prediabetes. Therefore, we designed this study to investigate the inter-hemispheric coordination in the prediabetes. Sixty-four prediabetic patients and fifty-four controls were enrolled in this protocol. They received the structural and resting-state functional magnetic resonance imaging screen. The imaging data were preprocessed and analyzed to obtain voxel-mirrored homotopic connectivity (VMHC), which can measure inter-hemispheric coordination. The VMHC values were compared between two groups with age and gender as covariates. The controls had higher VMHC values than prediabetic patients in bilateral anterior cingulate cortex. The prediabetic patients had higher VMHC values than controls in bilateral middle frontal gyrus. The VMHC values were also negatively correlated with pre-prandial serum glucose level in inferior frontal gyrus of prediabetic patients. In addition, the VMHC values of prediabetic patients were negatively correlated with total carbohydrate and calorie intake in anterior cingulate cortex. The inter-hemispheric coordination in anterior sub-network of default mode network and fronto-cingulate regions would play a role in the pathophysiology of prediabetes. The diet impact on the inter-hemispheric coordination is also an interesting issue.

Biography

Yi-Cheng Hou beeing detention since June 2007 in Taipei Tzu Chi Hospital. So far, in the clinical business in the deep understanding of pre-diabetes and diabetes patients have an increasing trend for the active intervention of this group of patients become urgent of the subject. Diabetes and pre-diabetes in addition to blood sugar than the average person, the nutritional intake and diet behavior correction, intestinal function has begun to occur lesions, and even whether the brain structure has begun to change, need to be strictly monitored. Therefore, Hou dietitian research is mainly for pre-diabetes and diabetes patients with the above objectives of the intervention. During the working period, two papers have been published in the domestic society, ten international papers, one from SCI original papers and international journals SCI papers

anny321@tmu.edu.com

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