Laboratory title : INRA UMR 1286 - Sophie Layé

Supervisor

Name : Pascal BARAT

Thesis title :
Hypothalamo-pituitary adrenal axis and neuropsychological consequences in paediatric diabetes

Keywords : stress, depression, diabetes, children, brain-imaging

Contact

Firstname : Pascal Name : BARAT

E-mail : pascal.barat@chu-bordeaux.fr

phone number : 05 56 79 87 25

Fax : 05 56 79 56 58

Abstract

Type 1 diabetes is steadily increasing in childhood. In diabetic patients, depression and anxiety are more frequent, as well as changes in activity of the hypothalamo-pituitary adrenal (HPA) axis and as changes of cerebral volumes, in particular in hippocampus. We hypothesize that type 1 diabetes in children is associated with genetically modulated hyperactivity of HPA axis. We think that this hyperactivity could impact on anxiety and depression outcome and hippocampal tissue alterations found in diabetes. To test this hypothesis, we currently lead a clinical research entitled CORTICODIAB, for which inclusions of patients end in December 2014. The project of this thesis is:
1) to complete results of transcriptomic analysis and brain MRI
2) to participate to the analysis of results: description of HPA axis activity (awakening salivary cortisol, urinary glucocorticoids metabolites, transcriptomic analysis of glucocorticoids signaling) in relation to anxiety and depression scores, analysis of hippocampal volume and diffusion tension as well as functional MRI, study of the impact of gene polymorphisms implicated in regulation of HPA axis on phenotypes.
3) to complete our human study by experiments on diabetic juvenile rats

Qualification required

Determination to be implicated in clinical research, aptitude to embrace multidisciplinary research (psychology, endocrinology, molecular biology, imaging, genetic), basic knowledge in molecular biology and statistic techniques