

Gene X Environment interactions in suicidal behaviour

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The causes of why certain people engage in suicidal behaviors involve both environmental and genetic factors, and interactions in-between. The aim here was to study certain aspects of stress-vulnerability in SA, i.e. the association of polymorphisms in genes which e.g. regulate the neuroendocrine hypothalamic-pituitary-adrenal (HPA) axis stress-response, as well as the importance of gene-environment interactions (GxE).

We studied genetic associations in the context of parent-child inheritance, as well as gene-environment interaction (GxE) patterns considering life timing of trauma and gender, concerning polymorphisms in candidate hypothalamic-pituitary-adrenal (HPA) axis gene networks, as well as on a genome-wide scale. For GxEs, we assessed exposures to physical assault (PA, below or over age of 18) or cumulative, lifetime exposure to a panel of stressful life events (SLEs) in male and females. Studies were conducted by a family-based design (n=660 trios) in relation to the outcome of severe lifetime SA in the offspring.

We have previously shown the associations of several HPA-regulatory candidate genes. The current results aim to present an extension involving more genes and make an attempt to shift towards polygenetic associations, which may lead to a better understanding of etiology. We investigate the patterns of GxE vs non-GxE associations, with the aim to better define the genetic components of the stress diathesis model for suicidal behaviors.