Title: Genetic and Epigenetic alterations of Serotonin Genes predicting risk for Suicidal Behavior in schizophrenia

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Abstract: Suicide is one of the leading causes of mortality from adolescence to middle-aged adulthood in North America. Schizophrenia, a common mental disorder, has been shown to increase the risk for suicide. Suicide is a complex behavior, in which both genetic and environmental factors may contribute to the predisposition of the behavior. In this study, I examine the association between alterations in DNA in specific genes in the brain and suicide attempt history. We have recruited a sample of 627 schizophrenia patients from the multi-center clinical schizophrenia program at the Centre for Addiction and Mental Health (Toronto, Canada). This sample size will be increased to 727 for this project. Group differences between suicide attempt histories were evaluated using statistical analysis considering intervening variables known to influence suicidal behavior, such as age, gender, duration of illness, stressful life events, and severity of illness. In my preliminary analysis, I found some genetic markers associated with suicide attempt. By completing the study, I may find a potential role of DNA alterations of the selected genes in suicidal behavior. Ultimately, this study aims to parse the contributions between inherited and environment-induced genetic variations to increase our understanding of the genesis of suicide and potentially identify new preventative measures or therapeutic targets to reduce suicidal behavior.

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