

Thursday, September 20, 2018

FOR IMMEDIATE RELEASE

Detroit area high school student publishes article in scientific journal on early detection of comorbid Major Depressive Disorder (MDD) and Post-Traumatic Stress Disorder (PTSD)

Karthik Ravi, a student at the International Academy in Bloomfield Hills, MI, recently published a scientific manuscript titled, "Upregulation of the Ribosomal Pathway as a Potential Blood-Based Genetic Biomarker for Comorbid Major Depressive Disorder (MDD) and PTSD" in the *Journal of Emerging Investigators*.

Ravi's article, published on August 22, 2018, seeks to understand how biochemical markers in the blood can indicate and diagnose comorbid MDD and PTSD. Approximately half of people that suffer from PTSD also suffer from MDD. There are three typical approaches to treatment of these comorbid disorders: to treat them both using the same methods, to treat them sequentially or to treat only one condition. Treating comorbid MDD and PTSD is different than treating one condition alone, and traditional pharmaceuticals (such as selective serotonin reuptake inhibitors, SSRIs, are not as effective).

Ravi examined how genes are expressed in individuals with comorbid MDD and PTSD to look for connections and better understand what we can observe in these cases. Using patient data from 184 blood samples, 253 genes were entered into a database to identify common protein interactions. After investigating the connections between these genes, Ravi found that the ribosomal pathway (or the process of making ribosomes) contained 29 upregulated genes that could potentially serve as a blood-based biomarker for comorbid MDD and PTSD. This novel method of detection can provide physicians with advanced notice of disease so that they may treat it efficiently and with regard to the exact genes that are being expressed.

The *Journal of Emerging Investigators (JEI)* is a non-profit scientific journal operated by graduate students at Harvard University. JEI is dedicated to mentoring young scientists in middle and high school and publishing their research through the online journal. Articles submitted to JEI pass through a rigorous editorial and scientific review process by several PhD-level scientists before they are accepted and published.

Link to Ravi's article: <https://www.emerginginvestigators.org/articles/upregulation-of-the-ribosomal-pathway-as-a-potential-blood-based-genetic-biomarker-for-comorbid-major-depressive-disorder-mdd-and-ptsd>

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