Lessons From the 1918 Flu Pandemic: A Novel Etiologic Subtype of ADHD?

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J Am Acad Child Adolesc Psychiatry. 2020 Nov 10;S0890-8567(20)32067-0.
doi: 10.1016/j.jaac.2020.09.024.

Abstract

In 2009, Dr. Anthony Fauci stated, "The 1918-1919 influenza pandemic was a defining event in the history of public health."[1] In 2020, a popular medical website suggested that the 1918 pandemic may offer "lasting lessons for the world in the grip of COVID-19."[2] One lesson from the 1918 pandemic relates to residual long-term effects. In his influential book published in 1971, Minimal Brain Dysfunction in Children, Wender[3] reviewed historical accounts of the 1918 pandemic and suggested that viral infection had selective brain effects on catecholamine nuclei, and behavioral sequelae in some children emerged and overlapped with symptoms that now define attention-deficit/hyperactivity disorder (ADHD), and behavioral sequelae emerged in some adults that overlapped with symptoms of Parkinson's disease. Based on this and several excitotoxic models of behavioral disorders (ie, Volpe, Altman, Amsel, Benveniste, and Lou) related to arterial architecture and patterns of blood flow to the brain, previously our group[4] proposed etiologic subtypes of ADHD based on a dopamine-deficit hypothesis and assumption that dopamine neurons might be particularly sensitive to a variety of environmental insults. We speculate that residual effects of 2019 novel coronavirus disease (COVID-19) may selectively affect brain regions underlying attention and motivation deficits associated with ADHD, as documented by positron emission tomography imaging studies of adults (see Volkow et al.[5]), which could increase risk for an infection-triggered etiologic subtype of ADHD.