Antecedent ADHD, dementia, and metabolic dysregulation: A U.S. based cohort analysis.

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Abstract

INTRODUCTION:
Epidemiological and genetic studies have reported a link between antecedent ADHD and dementia. The underpinning mechanisms of these associations are not known and have generated considerable speculation.

METHODS:
We have extracted hospitalization discharge data on dementia and ADHD (representing a severe phenotype) from the Healthcare Cost and Utilization Project (HCUPnet) and utilized a Poisson regression with two-ways fixed effects to investigate this association.

RESULTS:
An unadjusted ten-year lagged measure of a severe ADHD phenotype increases hospitalization risk for an all-listed Lewy Body Dementia (LBD) diagnosis (IRR: 1.21, 95% C.I. 1.08-1.35) and Alzheimer's disease (AD) discharge diagnosis (IRR: 1.15, 95% C.I.: 1.05-1.27). However, these relationships may be dependent upon the extent of metabolic dysregulation in a subtype-specific manner, as controlling for diabetes removes the significant association between antecedent ADHD and risk of AD but not LBD.

DISCUSSION:
These results indicate that the association between antecedent ADHD and dementia risk may be uniquely influenced by metabolic dysregulation, building upon prior discussion in this journal of a purported link between AD and diabetes. We tie the current findings to environmental risk factors that we have previously implicated in the etiology of ADHD to generate testable hypotheses on the underlying brain neurochemistry that may facilitate the link between metabolic dysregulation and dementia subtype risk.