Association of ADHD with recurrent hypoglycemia in type 1 DM

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Abstract

OBJECTIVE:
Data regarding the association between hypoglycemia and attention deficit hyperactivity disorder (ADHD) in children and adolescents with type 1 diabetes mellitus (T1DM) are limited. This study investigated whether hypoglycemia was associated with the risk of ADHD in young people with type 1 diabetes mellitus T1DM.

METHODS:
Children and adolescents with a diagnosis of T1DM were identified from the Longitudinal National Health Insurance Database in Taiwan from 1998-2011. Among them who were newly diagnosed with hypoglycemia during 2000-2007 were selected for the hypoglycemia cohort. The hypoglycemia diagnosis date was defined as the index date. Those who were diagnosed with ADHD before the index date were excluded. The main outcome was the development of ADHD. In total, 726 participants with hypoglycemia and 2,852 participants without hypoglycemia were included in this study.

RESULTS:
The overall incidence density of ADHD was markedly increased among cohort with hypoglycemia compared with cohort without hypoglycemia (4.74 vs. 1.65 per 1,000 person-years), with an adjusted hazard ratio (aHR) of 2.73 (95% confidence interval [CI] = 1.50-4.98). Cohort with hypoglycemia who had experienced a hypoglycemic coma had a significantly higher risk of ADHD (aHR = 6.54, 95% CI = 1.89-22.7) compared with cohort without hypoglycemia.

CONCLUSIONS:
Hypoglycemia, especially hypoglycemic coma, is significantly associated with a subsequent risk of ADHD in young people with T1DM.