

HYPOGLYCEMIA AND CARDIOVASCULAR DISEASE IN TYPE 2 DIABETES

Seung-Hyun Ko

Department of Internal Medicine, St. Vincent's Hospital, The Catholic University of Korea, Korea

kosh@catholic.ac.kr

Abstract

Severe hypoglycemia (SH), which is defined as a hypoglycemic episode requiring assistance to treat, is associated with a wide range of adverse outcomes in patients with diabetes. SH can be fatal; many previous studies have demonstrated that SH was associated with increased mortality in patients with type 1 and type 2 diabetes. SH usually occurs in advanced type 2 diabetes, and patients who experienced SH tend to have a higher cardiovascular risk. Therefore, it is considered that the association of SH with cardiovascular disease (CVD) would be related to reverse causation by the confounding factors rather than direct causality. It is difficult to clearly distinguish whether there is direct causality between SH and CVD. Our study demonstrated the relationship between prior SH and increased risk of CVD and CVD-related mortality, which exhibited a dose-response relationship, wherein subjects who experienced more SH events had a higher risk of mortality and CVD than those who experienced one SH event or those without an SH event using National Health Insurance Service Database in Korea. This study highlights the prognostic importance of prior history of SH on CV events and mortality. SH was strongly and positively associated with and exhibited a dose-dependent and temporal relationship with subsequent macrovascular morbidity and all-cause mortality. In patients who experienced SH, preventing the risk of CVD and mortality should be carefully considered in patients who are at a greater risk of hypoglycemia. In addition, the study illustrates the need for careful management and frequent monitoring of all individuals with type 2 diabetes to minimize the risk of hypoglycemia. Intensive, individualized diabetic education should be performed in these high risk patients for SH.

Keywords

Hypoglycemia, Severe hypoglycemia, Type 2 diabetes, cardiovascular disease