Association Between Perinatal and Obstetric Factors and Early Age at Diagnosis of Type 1 Diabetes Mellitus: A Cohort Study

Rodrigo Lima De Meo Martins

The University of São Paulo (USP), São Paulo, Brazil

Abstract:

Introduction: Type 1 diabetes mellitus (T1DM) is a disease with an increasing prevalence and incidence worldwide. This condition is mostly found among young individuals, and the earlier the age at diagnosis, the poorer the prognosis. Several factors have been pointed as risky for an early development it.

Aims: To evaluate the association between perinatal and obstetric factors as potential triggers for the early onset of T1DM.

Methodology: This was a retrospective cohort study enrolling 409 patients diagnosed with T1DM, in Bauru, São Paulo, Brazil, from 1981 to 2023. Data were retrieved from medical records, regarding sociodemographic parameters such as age, sex, ethnicity and socioeconomic status. Perinatal and obstetric factors such as delivery type, gestational age, order of filiation, length of exclusive breastfeeding, maternal age, maternal and fetal blood types, and the occurrence of maternal gestational diabetes were also analyzed. An adapted survival analysis was employed to gauge the impact of each assessed variable at the age of T1DM diagnosis.

Results: The average sample age at T1DM diagnosis was 12.1 ± 8 years. Delivery type and order of filiation were the only factors found to be significantly associated with an early age at T1DM diagnosis. Patients who were born through cesarean section and who were firstborns, showed a 28.6% and 18% lower age at T1DM diagnosis, respectively, compared to those born through vaginal delivery and those that were non-firstborns.

Conclusion: Being born by cesarian section and being firstborn showed to be statistically significant factors to determine an early T1DM diagnosis.

Keywords:

Perinatal; Obstetrics; Diabetes type 1.