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Adult-Onset Type 1 Diabetes Development Following COVID-19 mRNA Vaccination

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Abstract

During the coronavirus disease 2019 (COVID-19) pandemic, COVID-19 vaccination-induced hyperglycemia and related complications have been reported. However, there have been few reports of type 1 diabetes triggered by COVID-19 vaccines in subjects without diabetes. Here, we report the case of a 56-year-old female patient who developed hyperglycemia after the second dose of COVID-19 mRNA-based vaccination without a prior history of diabetes. She visited our hospital with uncontrolled hyperglycemia despite administration of oral hyperglycemic agents. Her initial glycated hemoglobin level was high (11.0%), and fasting serum C-peptide level was normal. The fasting serum C-peptide level decreased to 0.269 ng/mL 5 days after admission, and the anti-glutamic acid decarboxylase antibody was positive. The patient was discharged in stable condition with insulin treatment. To our knowledge, this is the first case of the development of type 1 diabetes without diabetic ketoacidosis after mRNA-based COVID-19 vaccination, and is the oldest case of type 1 diabetes development under such circumstances.

Keywords: COVID-19; Type 1 Diabetes; Vaccination; mRNA Vaccines.

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