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Type 1 diabetes mellitus following COVID-19 RNA-based vaccine

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Abstract

The epidemic of coronavirus disease-2019 (COVID-19) is the major public health issue in the world. COVID-19 vaccines are one of the most effective strategies against COVID-19. Here we report a 36-year-old female patient who had thirst, polydipsia, polyuria, palpitations, loss of appetite, and fatigue 3 days after the first dose of COVID-19 RNA-based vaccines without a prior history of diabetes. Ten days after vaccination, she visited our hospital with diabetic ketoacidosis and was diagnosed with type 1 diabetes. Hyperglycemia (501 mg/dL), anion gap metabolic acidosis and ketonuria were observed. The glycated hemoglobin level was 7.0%. Islet-related autoantibodies were all negative. The glucagon tolerance test revealed attenuated secretion of insulin. Human leukocyte antigen was haplotype DRB1*0405-DQB1*0401, which was associated with type 1 diabetes in Japan. The present case suggests that COVID-19 RNA-based vaccines might trigger the onset of type 1 diabetes, even in subjects without prior histories of diabetes.

Keywords: COVID-19 RNA-based vaccines; Ketoacidosis; Type 1 diabetes.

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